

# Regional PEDESTRIAN PLAN



INDIANAPOLIS MPO

FEBRUARY 2020- DRAFT



safety | equity | wellness | demand | walking comfort

DRAFT - 12.20.2019





# Regional PEDESTRIAN PLAN INDIANAPOLIS MPO



**PREPARED FOR:**

The Indianapolis Metropolitan  
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# TABLE OF CONTENTS

	<b>ACKNOWLEDGEMENTS</b>	<b>06</b>
<b>01.</b>	<b>EXECUTIVE SUMMARY</b>	<b>08</b>
<b>02.</b>	<b>INTRODUCTION</b>	<b>14</b>
	Previous Plans	15
	Why walking is important	15
	Plan Elements	16
	Planning Process	16
	How to use this plan	18
<b>03.</b>	<b>EXISTING CONDITIONS</b>	<b>20</b>
	Walking in Central Indiana	21
	Concerns and challenges related to walking in Central Indiana	29
<b>04.</b>	<b>VISIONING &amp; PLAN DEVELOPMENT</b>	<b>32</b>
	Relationship to other Planning Documents	33
	Planning Overview	34
	Vision Statement	37
	Goals and Objectives	37
<b>05.</b>	<b>PUBLIC ENGAGEMENT</b>	<b>40</b>
	How have we generated and obtained public input?	41
	What did we hear?	51

<b>06. PRIORITIZATION</b>	<b>52</b>
What is the prioritization process?	53
What steps are included in the prioritization process?	53
Priority Investment Area Indices	55
Preliminary Ranking Strategies	66
What does this mean?	72
<b>07. IMPLEMENTATION</b>	<b>74</b>
Why should we invest in pedestrian infrastructure projects?	75
How were projects identified?	75
What are the top projects?	75
Where to get started	79
Case Studies	79
Pedestrian Safety Measures	84
Guiding Policies and Procedures	90
<b>08. MOVING FORWARD</b>	<b>98</b>
<b>RESOURCE APPENDICES</b>	<b>100</b>
Appendix A: References	101
Appendix B: Relevant Plans	110
Appendix C: Steering Committee	114
Appendix D: Public Engagement	138
Appendix E: Ranking Strategies	178
Appendix F: GIS Prioritization	188
Appendix G: Improvement Projects	200





# ACKNOWLEDGEMENTS

The MPO Regional Pedestrian Plan was made possible by the Indianapolis Metropolitan Planning Organization (MPO) leadership and its staff, the MPO Regional Pedestrian Plan Steering Committee, and public input from the 8-county Central Indiana region.

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# 1

# EXECUTIVE SUMMARY





# EXECUTIVE SUMMARY

In 2018, the MPO began the process of updating the pedestrian plan for the Metropolitan Planning Area.

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## Introduction

The Indianapolis MPO is responsible for conducting a continuing, cooperative and comprehensive transportation planning process. The Indianapolis MPO is the designated planning agency for the 8-county Indianapolis/Central Indiana region, known as the Metropolitan Planning Area (MPA). The MPA includes Marion and portions of Boone, Hamilton, Hancock, Hendricks, Johnson, Morgan, and Shelby counties (Fig. 2-1). It plans and programs federal transportation funds for highways, transit, non-motorized transportation, and other means of moving people and goods in Central Indiana.

### What is the Indianapolis MPO Regional Pedestrian Plan?

The Indianapolis MPO plans for all types of transportation, including walking. This plan sets regional priorities for walkway investments for the MPA of Central Indiana. The Regional Pedestrian Plan builds on the previous pedestrian planning efforts of counties and communities throughout the region and focuses on regional connectivity and pedestrian facilities. It examines and prioritizes gaps in the existing regional pedestrian network. Local roads and interstates were not included as part of this study as pedestrians are prohibited on interstates and local roads are inherently low-volume, narrow roads with less chance of pedestrian/vehicular conflicts occurring.

### Why do we need a Regional Pedestrian Plan?

Regional pedestrian plans showcase a commitment to planning methods and policies that place a high-priority on walking as an alternative mode of travel. A regional pedestrian plan provides the framework for the creation of a regional pedestrian network and a balanced transportation system. The Indianapolis MPO Regional Pedestrian Plan was last updated in 2006. Since then, the surroundings of the MPA has changed. As such, the plan has been updated to ensure that it stays current and that the needs of Central Indiana residents are met for those who travel by foot.

### Who is involved in the plan?

The Indianapolis MPO guided the creation of a regional pedestrian plan guided by a Steering Committee representing cities, towns, counties, and health and transportation organizations across Central Indiana. The MPO, as well as the Steering Committee, assisted in identifying and collecting local data and information, provided input and guidance on the development of plan goals, objectives, and priorities and reviewed and provided feedback on project plan elements and recommendations.

# INDIANAPOLIS METROPOLITAN PLANNING ORGANIZATION (MPO)

## Where do we plan?

The MPO follows federal transportation requirements to guide the development of a multi-modal transportation system within the **Metropolitan Planning Area (MPA)** - an area that includes the urbanized area plus areas expected to urbanize over the next 20 years.

## Goals of the MPO

The MPO is dedicated to maintaining a continuing, cooperative, and comprehensive planning process.

- Identify Future Needs
- Prepare Effective Transportation Programs and Plans
- Ensure Community Involvement
- Coordinate Policy

## How are decisions made?

The MPO's plans and recommendations are developed in cooperation with the Indianapolis Regional Transportation Council (IRTC), the governing body of the MPO. The IRTC consists of Policy, Technical, and Administrative committees that are represented by officials from jurisdictions within the MPA.

- Administrative Committees - Review/ Advise
- Technical Committee - Endorse Plans
- Policy Committee - Final Approval of Plans

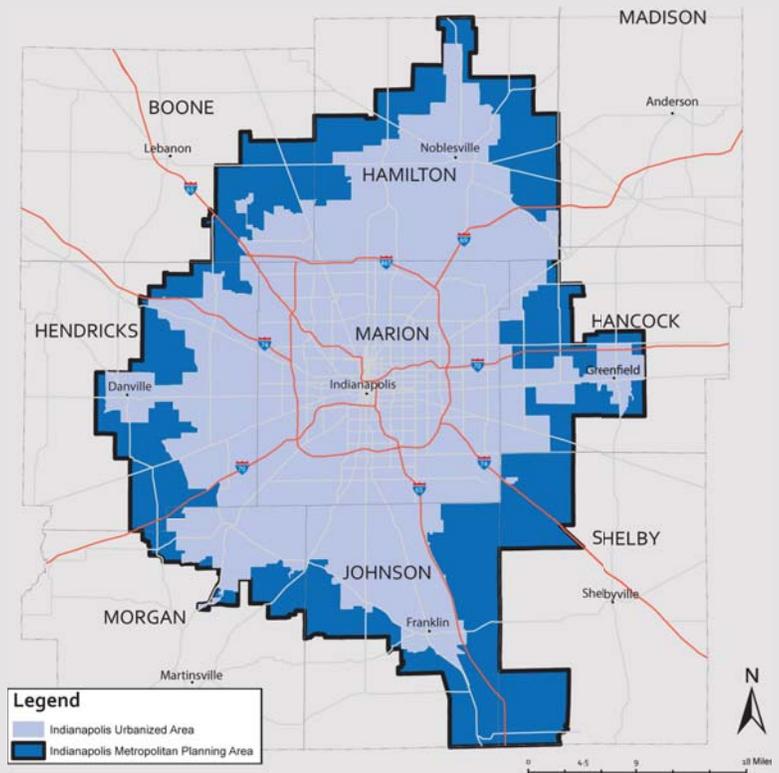


Figure 2-1. | The Indianapolis MPO is the designated planning agency for the Metropolitan Planning Area (MPA).

### 8 Counties

Marion County and parts of Boone, Hamilton, Hancock, Hendricks, Johnson, Morgan, and Shelby counties.

### 11 Cities

Beech Grove, Carmel, Fishers, Franklin, Greenfield, Greenwood, Indianapolis, Lawrence, Noblesville, Southport, and Westfield

### 22 Towns

Arcadia, Atlanta, Avon, Bargersville, Bethany, Brooklyn, Brownsburg, Cicero, Cumberland, Danville, Edinburgh, McCordsville, Mooresville, New Palestine, New Whiteland, Pittsboro, Plainfield, Speedway, Spring Lake, Whiteland, Whitestown, and Zionsville

### MPA

975 Sq. Miles  
Population: 1,509,009

## Purpose

The purpose of this study is to plan for safe, equitable, and convenient regional pedestrian infrastructure to facilitate active transportation opportunities for people in Central Indiana. This study examines pedestrian facilities and connectivity in the MPA. It does not replace recommendations or findings of the Marion County Walkways Plan or any other local or county pedestrian plans. This plan's regional prioritization process was inspired by data-driven analysis. It uses the methodology within the Marion County Walkways Plan as a starting point for plan mapping and recommendations applying different data sets and regional priorities.

## Vision

The plan's vision, goals and objectives, and areas of interest and prioritization were developed based on feedback from the Steering Committee, public input, the Indianapolis MPO, and the consultant team and were validated by the Steering Committee and Public Survey #2. The vision emphasizes the importance of providing for the adequate and equitable distribution of pedestrian facilities in creating a walkable transportation network for Central Indiana (Fig 1-1):

***Provide a safe, efficient, and balanced comprehensive pedestrian network that promotes local and regional connectivity, maximizes community benefit, and establishes pedestrian facilities as an equal component of the regional transportation network. This system should provide for residents' daily transportation, recreation, and everyday walking uses.***

## Goals & Objectives

A series of goals and objectives were established for the plan based on local pedestrian-related practices and previous plans completed by communities in the MPO's planning region. The goals and objectives function as a catalyst for improving the future of walking in Central Indiana. Goals and objectives include:

### Connectivity

Create a regional network of convenient, connected, and well-designed sidewalks and paths throughout the Central Indiana region.

### Safety

Create a safe and inviting sidewalks and paths network throughout the MPA.

### Wellness & Quality of Life

Create sidewalks and paths that promote walking, increase opportunities to walk, and connect people to meaningful destinations.



Figure 1-1. | The vision emphasizes the importance of providing for the adequate and equitable distribution of pedestrian facilities.

## Community Benefit

Recognize and develop projects that provide additional community benefit beyond just the benefits of walking.

## Collaboration & Education

Communities should work together, across municipal and county boundaries, to support sidewalks and paths that are enjoyable, useful, and have a positive impact on the most people's lives (Fig. 1-2).

## Key Takeaways

A series of strategies and recommendations are provided in Chapter 7: Implementation. These strategies and recommendations are intended to provide communities and local organizations with resources to implement safe and accessible pedestrian infrastructure as part of the regional transportation network. Some recommendations include:

- low-cost alternatives to traditional sidewalk installations;
- temporary solutions to immediate infrastructure needs;
- pedestrian safety measures for along and across roadways to integrate pedestrian facilities into existing transportation network; and
- policies and procedures to provide safe places to walk for current and future generations.



Figure 1-2. | Sidewalks and paths should be enjoyable, useful, and have an impact on the most people's lives.



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# 2

## INTRODUCTION





# INTRODUCTION

The Indianapolis Metropolitan Planning Organization (MPO) is creating a community-focused Regional Pedestrian Plan to get people walking more in Central Indiana.

## Previous Plans

The Indianapolis MPO Regional Pedestrian Plan was last updated in November 2006 after the Center Township (Marion County) Pedestrian Plan in 2003 and the Marion County Pedestrian Plan in 2004. The plan focused on providing a basic framework for a regional pedestrian network in Central Indiana. The primary goals of the plan were to reduce reliance on the automobile, develop a balanced and intermodal transportation system, emphasize multi-modal opportunities, and improve quality of life for citizens in the region. The plan provided a series of design guidelines to assist decision makers in implementing plan recommendations in the development and redevelopment of facilities for the regional pedestrian network (Indianapolis Metropolitan Planning Organization, 2006).

In 2016, the City of Indianapolis completed the Walkways Plan, the Indianapolis/Marion County Pedestrian Plan that served as an update to the Marion County portion of the Regional Pedestrian Plan. The Walkways plan focused on identifying pedestrian facilities and needs within Marion County, and examined pedestrian facilities and planning through the lenses of health and wellness. It was built on the physical, social, and health implications of living in a neighborhood without pedestrian infrastructure, established in the State of Walkability Report (WalkWays, 2016). All previous pedestrian planning efforts help set the stage for pedestrian improvements in Central Indiana.

## Why walking is important

Everyone starts and ends their day as a pedestrian. Whether running errands or commuting to work or school, most Central Indiana residents make several walking trips per day. People walk to a variety of destinations, including work, school, public transit facilities, medical services, grocery stores, entertainment centers, and for exercise. For many, walking is an enjoyable and social part of their lifestyle and is a great way to engage with family and friends.

Walking is one of the easiest ways to improve and maintain overall health and well-being. Walking for just 30 minutes a day can increase physical fitness and reduce risks of developing chronic conditions such as heart disease, type 2 diabetes, and cancer. It is a low-impact form of exercise that can be completed at an individual's own pace and incorporated into one's daily routine (Harvard University, 2018).

The average cost of operating a car per year is approximately \$5,170, while the average cost of operating a bicycle per year is only \$120 (Ihling, 2013). Unlike other forms of transportation, walking is free! For many people who are on fixed incomes and/or have health conditions that prevent them from operating motor vehicles, walking is their primary form of transportation. Therefore, they are greatly impacted by the quality and presence of sidewalks in the built environment.

The MPO Regional Pedestrian Plan took approximately 14 months to complete, beginning in October 2018 and ending in February 2020 with the adoption of the plan. The planning process is divided into four general categories, including inventory of existing data, public engagement, data collection and mapping, and identification of pedestrian improvements and prioritization.

Lack of pedestrian facilities, inadequate accommodations for people with mobility limitations, and unsafe intersections and crossing locations contribute to unsafe walking conditions that influence people’s decisions to walk. As the Central Indiana region continues to grow, it is critical to provide quality multi-modal transportation systems with a pedestrian focus to accommodate everyone.

## Plan Elements

This plan includes a series of long-term goals and objectives that form the basis for recommendations and prioritization. A prioritization process for the ranking and development of identified improvements has been provided along with a series of implementation strategies and recommendations to help the region achieve the greatest benefit.

## Planning Process

The plan began with a process of data collection, where the project team examined other pedestrian planning efforts that have been done by communities in the region. These plans were used to develop the project vision, goals and objectives for the evaluation of future recommendations that would come as a result of the pedestrian planning process. [A complete list of relevant plans can be found in Appendix B: Relevant Plans.](#)

The project Steering Committee, representing 8-counties and health and transportation organizations across Central Indiana, assisted the Indianapolis MPO and the consultant team in identifying and collecting local data, provided input and guidance on the development of plan goals, objectives, and priorities, and reviewed and provided feedback on project elements, prioritization, and plan recommendations. Four Steering Committee meetings were held during the project. [Steering](#)

[Committee meeting materials and minutes can be found in Appendix C: Steering Committee Meetings.](#)

An online and in-person public engagement process was used to determine what it’s like to walk in Central Indiana today, including concerns and challenges related to pedestrian connectivity. [Public engagement materials can be found in Appendix D: Public Engagement.](#) Two public surveys gauging the public’s perceptions of existing pedestrian facilities, as well as the elements they would like to see in new improvements coming to the regional sidewalk and pathways system, were conducted during the planning process. The surveys garnered more than 1,000 total responses from Central Indiana residents. Information on the plan was made available on the Indianapolis MPO’s website,



where members could learn more about the project and review public survey results. A series of Facebook posts highlighting various topics relating to walking were shared via the Indianapolis MPO's Facebook page to promote the plan and gather feedback on the future of pedestrian improvements in the region.

The project team hosted a Facebook Live event and Q&A session in May 2019 to provide a brief overview of the project and the prioritization process. The event was hosted as an alternative, to in-person public meetings, to boost attendance, and increase awareness of the plan and Public Survey #2. Participants were invited to ask questions relating to the MPO Regional Pedestrian Plan. The Facebook Live event and Q&A and Public Survey #2 were boosted region-wide and to specific low-income and minority populations.

To promote the Facebook Live event and Public Survey #2, MPO staff visited locations across Central Indiana. People were invited to take the survey via iPad or later using a link provided on business cards.

A prioritization process was developed to help identify the areas of greatest need for pedestrian facilities, and make recommendations to get investments in those particular areas. This approach uses quantitative data from a series of priority investment areas indices derived from the areas of interest presented in Public

Survey #2. They include wellness, pedestrian safety, walking comfort, equity, and pedestrian demand. The existing pedestrian infrastructure network was analyzed to understand where sidewalks and pathways were located throughout Central Indiana.

A series of preliminary ranking strategies based on public input, steering committee feedback, the Marion County Walkways Plan, and planning best practices were developed to help ensure that the areas of greatest need were funded first. [Preliminary ranking strategies maps can be found in Appendix E: Ranking Strategies.](#) These strategies apply weight to the indices based on a series of contributing factors to each ranking strategy. The resulting heat maps assign priority scores, or "tiers" in five categories, where high value tiers represent high priority, and low value tiers represent lower priority. A composite ranking strategy was created to help guide community decision makers in setting priorities for sidewalk projects. [The GIS methodology used to develop maps for the prioritization process can be found in Appendix F: GIS Prioritization.](#)

Based on existing data and the final prioritization map, network gaps at the regional and county levels were mapped by tier to show the distribution of improvements. [These maps can be found in Appendix G: Improvement Projects.](#)



This plan is divided into nine sections. Each section plays a key role in defining the pedestrian planning process and provides context for the final prioritization and recommendations of the plan.

## How to use this plan

The **Executive Summary** provides a summary of the plan document and should be referenced by community decision makers, elected officials, and others who are looking for a brief snapshot of the plan and its contents.

Following the Executive Summary is the **Introduction**, which provides an overview of the MPO Regional Pedestrian Plan and its role in future investments in pedestrian improvement projects in Central Indiana.

The **Existing Conditions** section provides a benchmark from which to measure existing facilities and future performance. It includes a report of the physical conditions of pedestrian facilities in the region and why we should invest in pedestrian infrastructure, as well as some concerns and challenges related to walking.

The **Visioning & Plan Development** section provides an overview of the pedestrian planning process and its relationship to other planning documents, as well as the project Vision, Goals and Objectives.

The **Public Engagement** section identifies the public engagement opportunities provided throughout the planning process, including who participated and the feedback received.

The **Prioritization** section provides an overview of the prioritization process used to establish areas of high priority investment for pedestrian improvement projects. It discusses the priority investment areas indices used to generate final priorities and the preliminary and final comprehensive ranking strategies used to weight them.

The **Implementation** section includes a detailed overview of how the plan will be used, as well as final recommendations and a list of projects at the regional and county levels to serve as a guide for decision makers to use in prioritizing funding for pedestrian facilities in Central Indiana.

The **Moving Forward** section offers closing comments and insights into the pedestrian planning process.

The **Resource Appendices** section contains a compilation of the tools used to help to develop the plan, including Prioritization Measures, GIS Prioritization Methodology, Public Engagement Efforts, and Steering Committee Meeting notes.





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# 3

## EXISTING CONDITIONS





## EXISTING CONDITIONS

While many communities throughout Central Indiana have made investments in pedestrian infrastructure over the past several years, these efforts have not kept pace with pedestrian demand.

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### Walking in Central Indiana

Many communities throughout Central Indiana are not pedestrian friendly and still lack sidewalks, restricting the ways in which people can move. In many ways, transportation funding has focused on projects targeting vehicles, rather than pedestrians, leaving many people who don't or can't drive without the ability to safely walk around their communities.

#### Existing Pedestrian Facilities

A significant portion of Central Indiana was constructed in a time when the automobile was prioritized over other modes of transportation. The prevalence of wide, multi-lane roadways without pedestrian infrastructure reflects the region's car-centric mindset. Most of the region's best pedestrian connectivity is focused in areas where jobs and housing opportunities have been attracting more residents. Some of these residents may be looking for alternatives to driving, and the presence of quality pedestrian infrastructure, including sidewalks and multi-use paths, is making these areas more attractive to younger generations.

Based on Public Survey #1, which asked Central Indiana residents to determine their preferences and concerns regarding sidewalks, trails, and other pedestrian facilities in their communities, approximately 77% of respondents reported that they walked for at least thirty (30) minutes at a time during the week for recreation, exercise, to get to/from places, or for any other reason. As the area continues to grow, Central Indiana has an opportunity to attract and retain talent and improve quality of life by planning for walkable environments.

Existing pedestrian facilities in Central Indiana fall into three basic categories:

- Walkways
- Curb Ramps
- Crossings

## Walkways

Walkways are hard surface pathways that provide separate areas within the right-of way for people traveling by foot. There are several types of walkways, including sidewalks, multi-use paths, and paved shoulders. Walkways are made of slip-resistant materials, such as concrete, asphalt, or crushed stone. They range in size from 4-feet for a typical sidewalk to 12-feet or greater for a multi-use path. They may or may not include pedestrian amenities such as a landscape buffer zone, benches, lighting, public transit facilities, and trash receptacles.

People walk for many reasons, including to work or school and for errands, social outings, and recreation. For some people, walking is their primary mode of transportation. Walkways are the fundamental building blocks of our regional pedestrian transportation system, and it is important to provide safe, comfortable, and convenient means for people to access their destinations (Fig. 3-1). Walkways may be found in residential and commercial areas throughout Central Indiana.

Many communities in the region lack sidewalks on one or both sides of the street. Pedestrians in these areas are forced to engage in unsafe walking behaviors in order to access their destinations. Without proper facilities, pedestrians face many dangers from high speed, high volume traffic conditions and distracted driving behaviors.

## Curb Ramps

Curb ramps provide access from the roadway to the sidewalk for people who use assistive devices, such as wheelchairs, walkers, or canes, or those with visual or cognitive impairments who may have trouble stepping on and off curbs. To comply with federal regulations, curb ramps must be installed at all intersections and midblock crossings where pedestrian crossing locations exist. Curb ramps should include detectable warnings with truncated domes to alert pedestrians to changes in grade. Detectable warnings are textured surface patterns that are detectable by cane or foot that alert people with visual impairments that they are approaching street crossings or pavement drop-offs (Fig. 3-2).

Many walkways in Central Indiana lack accessible curb ramps, or aren't up to accessibility standards. Accessibility

standards make pedestrian routes accessible to those with disabilities. For people with mobility limitations, this makes crossing the street not only dangerous, but in some cases, impossible. Despite the best intentions of communities in keeping their sidewalks up to code, many sidewalks still aren't in compliance.

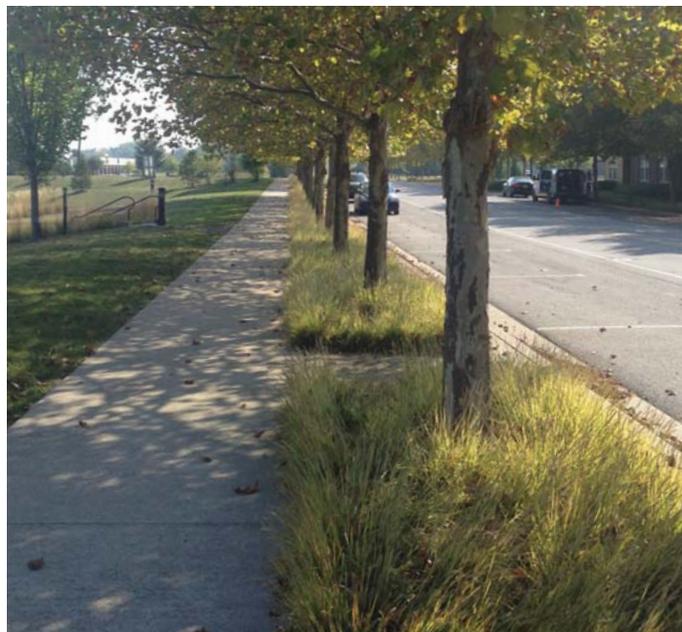


Figure 3-1. | Walkways are the fundamental building blocks of our regional pedestrian transportation system.



Figure 3-2. | Detectable warnings are textured surface patterns that are detectable by cane or foot.

## Crossings

Crossings occur at or in between intersections where pedestrians cross to the other side of the street. These locations may be marked with various crosswalk marking patterns, such as solid, standard, continental, dashed, zebra, or ladder markings (Fig. 3-3). Often, pedestrian crossings are controlled with traffic signalization at intersections. At mid-block locations, crossings may be controlled by pedestrian-activated warning devices such as pedestrian hybrid beacons or rectangular rapid flashing beacons (RRFB), which facilitate crossings in high-speed, multi-lane roadway conditions (Fig. 3-4).

Not all mid-block crossings in Central Indiana are marked, and many lack basic pedestrian crossing signalization, making crossing the road dangerous. This may also lead to jaywalking, where pedestrians do not use designated crosswalks to cross the street.

## Existing Pedestrian Network

A fully-connected and integrated transportation network fosters walkability and increases opportunities for transportation beyond the automobile. Convenience and clarity are essential to the safety and comfort of pedestrians. Efficient and cost-effective transportation systems must take pedestrians into consideration. The Central Indiana regional pedestrian network is disrupted by gaps. A gap in the pedestrian network



Figure 3-4. | Mid-block crossings may be controlled by pedestrian-activated warning devices.

includes any area where pedestrian facilities currently do not exist. Gaps reflect missing infrastructure on one and/or both sides of the road. Quality of existing pedestrian infrastructure was not considered as part of this analysis. Gaps may be a result of poor planning and an automobile-first mindset. For pedestrians, gaps in the pedestrian network are not only inconvenient; they can also be dangerous. Areas in the region lacking pedestrian facilities such as sidewalks and crossings make walking difficult and unsafe.



Figure 3-3. | Crossing locations may be marked with various crosswalk marking patterns, such as solid, standard, continental, dashed, zebra, or ladder markings.

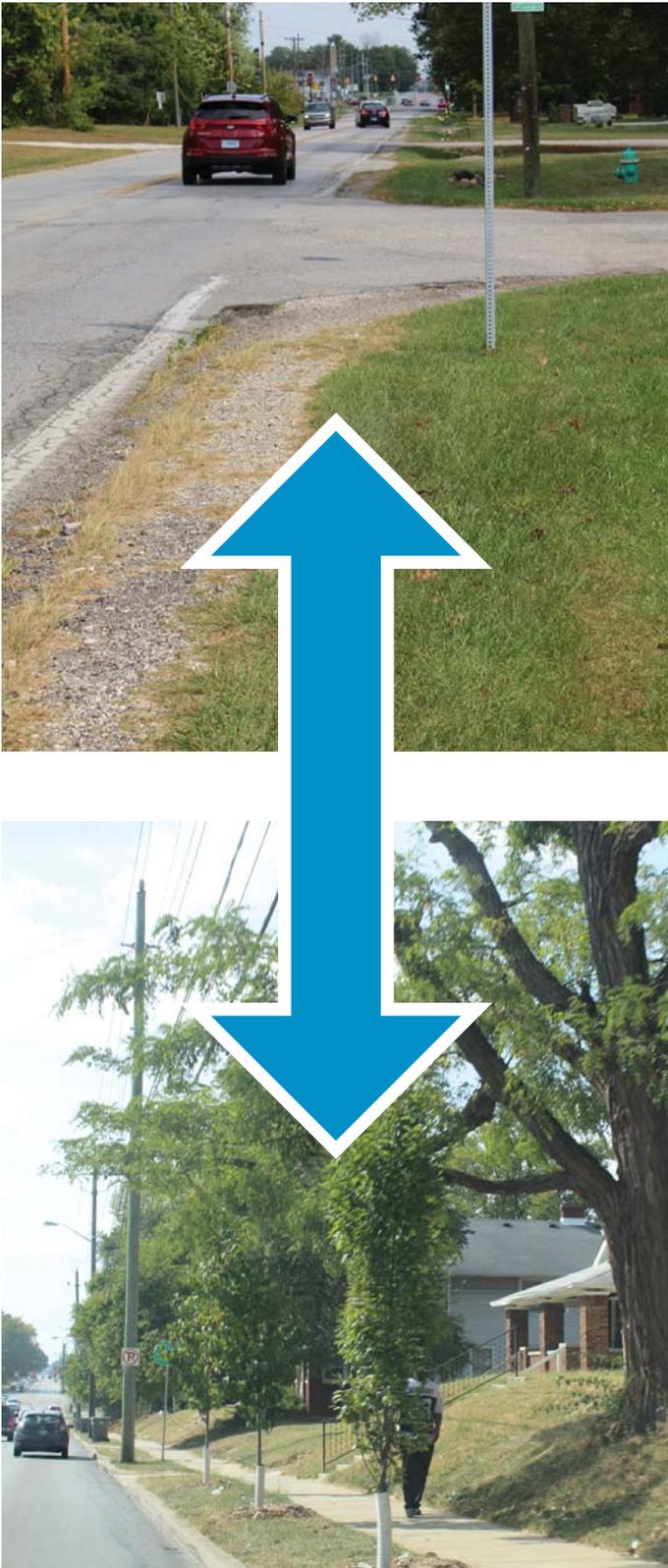


Figure 3-5. | The existing pedestrian network in Central Indiana includes gaps (top) and no gap conditions (above).

Often, gaps present hazardous environments where driving behaviors can be more likely to contribute to pedestrian/vehicular conflicts. Driver perceptions of risk, and speed and volume of vehicular traffic are major contributors to pedestrian fatalities. Familiarity with travel routes, distracted driving, and drug or alcohol related impairments negatively impact driver perceptions of risk. High speeds reduce driver response times, while high traffic volumes on urban streets increase the likelihood of pedestrians and drivers encountering each other on the street.

Central Indiana’s existing regional pedestrian network and gaps are mapped in Figure 3-6. This network includes the location of existing pedestrian facilities and missing segments (i.e. gaps) in the functional classifications network (Fig. 3-5). On the map, a green line represents an existing pedestrian facility segment and a red line represents a missing segment, or a gap. Gaps in the pedestrian network were inventoried and mapped along roads using the functional classifications system. Functional classifications are groupings of streets and roads into categories according to the level of service they provide. Functional classifications used for the purposes of this study include major and minor arterial and collector roads. Arterial roads are high-capacity roads that move traffic between collector roads and interstates, while collector roads are low-to-moderate capacity roads that move traffic between local and arterial roads.

In total, there are 1,704 miles of existing pedestrian facilities in the regional network, including no gap conditions. Existing pedestrian facilities are focused in and around high-density urban centers. However, many gaps remain in the existing pedestrian network of many urban communities. There are 3,748 miles of gaps in the pedestrian network. Many of these gaps are concentrated along major corridors connecting communities in the region. Since the pedestrian network was inventoried along specific road functional classifications, the methodology used in creating the priority investment areas indices (described in Chapter 6: Prioritization) utilized the same road classifications. The maps, in turn, reflect a linear grid pattern for each of the five priority investment areas indices.

# Existing Pedestrian Network & Gaps

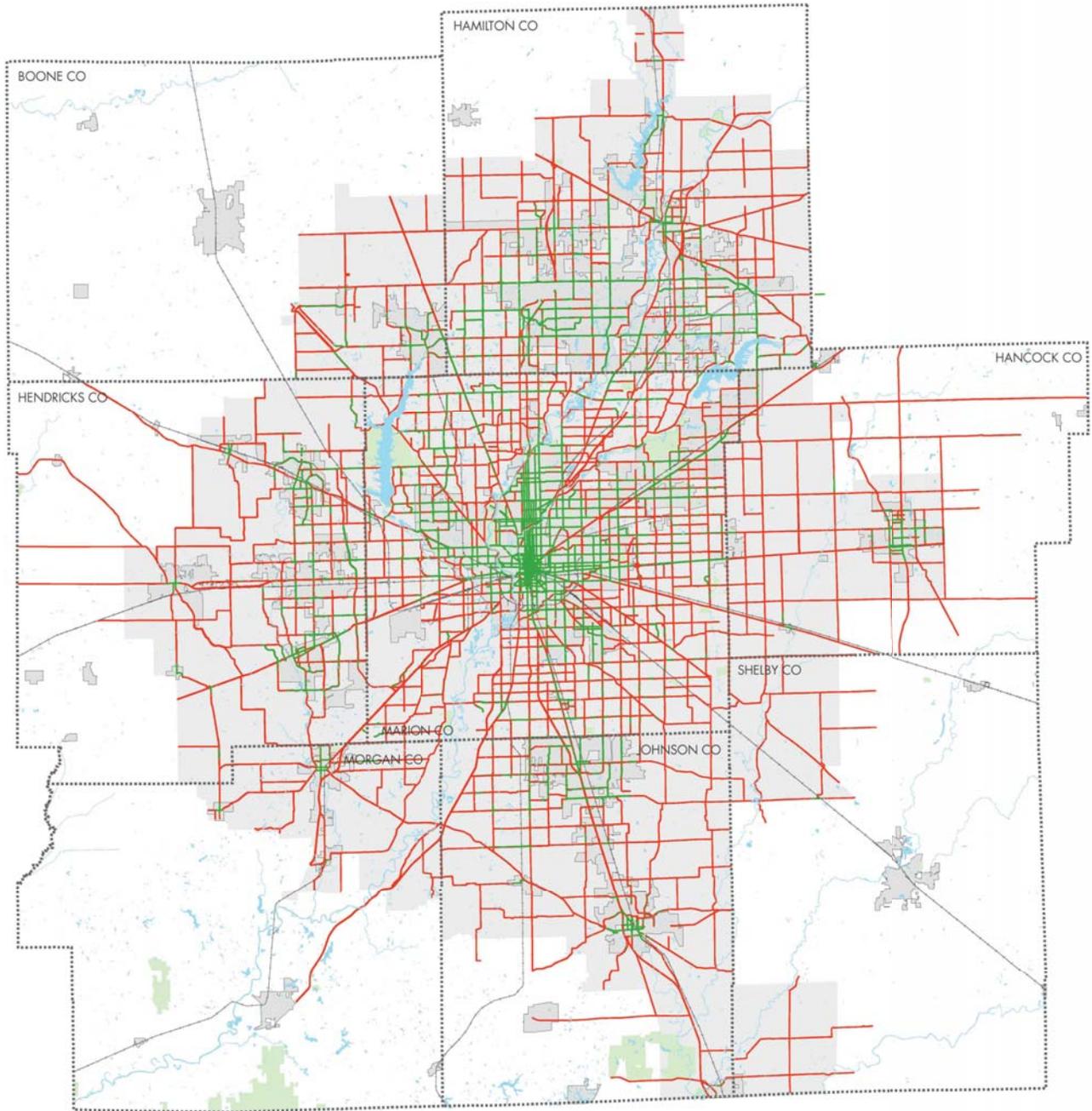


Figure 3-6. Existing Pedestrian Network & Gaps



EXISTING PEDESTRIAN NETWORK & GAPS

<div style="background-color: #0072bc; color: white; padding: 2px; font-weight: bold; text-align: center;">SCALE</div> <div style="text-align: center; margin-top: 10px;">   </div>	<div style="background-color: #0072bc; color: white; padding: 2px; font-weight: bold; text-align: center;">LEGEND</div> <table border="0" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 20px;"><span style="color: red;">■</span></td> <td>Gaps</td> <td style="width: 20px;"></td> <td>Interstates</td> </tr> <tr> <td><span style="color: green;">■</span></td> <td>No Gaps</td> <td></td> <td>Major Streets</td> </tr> <tr> <td></td> <td></td> <td></td> <td>County Lines</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Waterbodies</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Jurisdictions</td> </tr> <tr> <td></td> <td></td> <td></td> <td>MPA</td> </tr> </table>	<span style="color: red;">■</span>	Gaps		Interstates	<span style="color: green;">■</span>	No Gaps		Major Streets				County Lines				Waterbodies				Jurisdictions				MPA
<span style="color: red;">■</span>	Gaps		Interstates																						
<span style="color: green;">■</span>	No Gaps		Major Streets																						
			County Lines																						
			Waterbodies																						
			Jurisdictions																						
			MPA																						

Missing segments in the pedestrian network not only create segmented communities; they also limit transportation opportunities for residents and visitors traversing the region. Within an individual community, gaps in the network create barriers that separate neighborhoods, public facilities, and most importantly, people. For those that don't own cars and are dependent on walking for the majority of their trips, gaps in the pedestrian network create roadblocks that prevent equitable access to educational and employment opportunities, as well as medical services.

Eliminating gaps in the pedestrian network requires prioritization and examination of factors relating to walking, such as public transit. Walksheds play an important role in the regional transportation puzzle. According to NACTO's Transit Street Design Guide, walksheds are the distance a person is willing to walk to their destination. This distance is not fixed; rather, it varies between one-quarter to one-half mile, depending on the quality and condition of the walking environment. Transit riders are more likely to be comfortable walking greater distances to access transit stops if their walking environment is safe and offers pedestrian amenities such as benches and street trees (NACTO, 2016).

When updating individual county and community thoroughfare plans, leadership can reference the existing pedestrian network map to locate the missing segments in their communities. Filling the gaps will create a more cohesive regional pedestrian network for Central Indiana.

### Existing Programs

One of the biggest challenges communities in Central Indiana face is establishing safe, connected pedestrian facilities on arterial street networks, where high speeds, multiple travel lanes, and motorist behavior impacts walkability. The addition of sidewalks and signalized crossings are high priorities in making areas safer and more comfortable for pedestrians.

While it's easy to think about making sidewalk improvements, implementation is a challenge, especially when considering construction planning, maintenance, cost, and prioritization. Efforts targeting sidewalk construction and long-term maintenance planning is

necessary to extend the regional pedestrian network. Central Indiana has taken steps to improve upon pedestrian facilities through efforts including:

- Complete Streets Policies
- INDOT's Common Paths Initiative
- Existing and Developing Trails

### Complete Streets

Central Indiana faces a multitude of challenges when it comes to planning, constructing, and maintaining streets that provide access to all users. The region has an abundance of incomplete streets, which lack basic pedestrian, bicyclist, and public transportation facilities (Smart Growth America, 2019). Incomplete streets can be found in many communities throughout the region. Often, incompleting streets are found in high poverty, high minority neighborhoods with limited access to resources. These areas have the greatest need for quality pedestrian infrastructure.

Complete Streets is a road design and planning approach that has seen nationwide expansion over the past several years due to its popularity. The premise of Complete Streets is simple: get people to and from their destinations safely and efficiently, no matter what mode of travel they use.

In Central Indiana, the following areas have adopted Complete Streets Policies:

- City of Indianapolis (2012)
- City of Westfield (2012)
- Indianapolis MPO (2014)
- INDOT (2014)

Complete Streets create livable communities where safety and convenience are balanced to design roadways that accommodate a wide range of users of all ages and abilities, including pedestrians, bicyclists, motorists, and public transit riders. While each complete street is unique, they may include facilities such as sidewalks, exclusive bike and bus lanes, public transportation amenities, safe crossing opportunities, planted medians, narrow travel lanes, and on-street parking. The benefits of Complete Streets extend beyond providing safe and

efficient connections for people to their destinations; it also can increase economic development, can reduce trip length or vehicle choice which can reduce transportation operating costs, and can improve the environment by encouraging non-motorized options (Smart Growth America, 2019).

Adopting Complete Streets requires alternative thinking about the planning and development of community roads, where, historically, the needs of automobiles have been routinely prioritized over the needs of other users. Complete Streets aren't a quick solution for all transportation issues; however, they do produce positive, gradual improvements that serve long-term needs of communities (Indiana MPO Council, 2015).

#### *INDOT Common Paths Initiative*

Regardless of our mode of travel, we all have "common paths" that we use on a daily basis to access destinations within our communities. According to the Indiana Department of Transportation (INDOT), "The Common Paths program is designed to provide cost effective transportation by considering the mobility needs of all users in our transportation system." The program was designed with the intention of balancing all modes of transportation with considerations towards the cultural, socioeconomic, and environmental impacts of roadway planning.

INDOT's Common Paths Initiative approaches road decision-making, planning, and design with the intention of connecting communities, getting people involved, and providing quality transportation that enhances the quality of life and competitiveness of Indiana (Indiana Department of Transportation, 2019). The initiative has generated the development of several state and regional programs, including the Americans Disabilities Act (ADA) Transition Plan Development and Oversight and the Small Communities Sidewalk Program (SCSP).

The initiative spurred a series of pedestrian improvements across Indiana. According to an INDOT news release published in October 2016, INDOT set aside approximately \$5 million that year to improve sidewalks in rural communities as part of the Common Paths Initiative. Further, INDOT invests approximately \$2.5 million each year to improve crosswalks and pedestrian infrastructure along state highways in rural and urban

communities (Indiana Department of Transportation, 2016).

#### *Americans with Disabilities Act (ADA) Transition Plan Development and Oversight*

As part of the Americans with Disabilities Act (ADA) Transition Plan development and oversight, INDOT is required to remove architectural and programmatic barriers that exclude individuals with disabilities from participating in its programs or activities. INDOT is committed to making reasonable modifications to its policies and programs in order to ensure that those with disabilities have equal opportunities for involvement. As part of the ADA plan, INDOT examined pedestrian facilities for accessibility (Indiana Department of Transportation, 2015).

Following INDOT's lead, many counties, cities, and towns in Central Indiana have developed ADA Transition Plans. ADA Transition Plans include a self-evaluation and inventory of existing pedestrian facilities and barriers, recommendations for compliance, and budgeting and schedules for improvements.

#### *Small Communities Sidewalk Program (SCSP)*

Sidewalks connect communities to important destinations such as employment opportunities, educational facilities, public transit, medical services, grocery stores, entertainment centers, and parks and recreation. They are the basic building blocks of the regional pedestrian network and are found in residential and commercial areas throughout Central Indiana.

However, funding limitations and other challenges are prohibitive to the development of quality pedestrian facilities in small town and rural areas. Since sidewalks are key to developing a regional pedestrian system, INDOT developed the Small Community Sidewalk Program (SCSP) to offer assistance on addressing this issue (Indiana Department of Transportation, 2015). According to INDOT, "Funding will be set aside each fiscal year to construct new sidewalks or to upgrade existing sidewalks to ensure compliance with the most current standards, including Americans with Disabilities Act (ADA) standards." This program is applicable to submitted projects located within the public right-of-way (ROW).

### Existing and Developing Trails

Trails and greenways play important roles in increasing walkability. Walkability measures the walking friendliness of an area. Determinations of walkability include the presence or absence and the condition of pedestrian facilities, pedestrian amenities, traffic conditions, motorist's behavior, and access to community destinations. Walkability benefits the health, environmental, and socioeconomic conditions in Central Indiana. A substantial greenway system has emerged over the past several years, which increases walkability. Our current greenway system includes:

- 106th Street Path (Hamilton Co.)
- 146th Street Trail (Hamilton Co.)
- B&O Trail (Hendricks Co.)
- Big 4 Rail Trail (Boone Co.)
- Bridgewater Club Trail (Hamilton Co.)
- Carey Road Trail (Hamilton Co.)
- Centennial Trail (Hamilton Co.)
- Central Canal Towpath (Marion Co.)
- Eagle Creek Greenway (Marion Co.)
- Fall Creek Greenway (Marion Co.)
- Greyhound Trail (Hamilton Co.)
- Hagan-Burke Trail (Hamilton Co.)

- Indianapolis Cultural Trail (Marion Co.)
- Buck Creek Trail (Marion Co.)
- Landersdale Trail (Morgan Co.)
- Little Buck Creek Greenway (Marion Co.)
- Lenape Trace Trail (Hamilton Co.)
- Midland Trace Trail (Hamilton Co.)
- Monon Trail (Hamilton Co. & Marion Co.)
- Natalie Wheeler Trail (Hamilton Co.)
- P&E Trail (Marion Co.)
- Pennsy Trail (Hancock Co. & Marion Co.)
- Pleasant Run Greenway (Marion Co.)
- Pogues Run Greenway (Marion Co.)
- Ronald Reagan Parkway Trail (Hendricks Co.)
- Tracy Trail (Johnson Co.)
- Vandalia Trail (Hendricks Co.)
- White Lick Creek Trail (Hendricks Co.)
- White River Greenway (Hamilton Co.)
- White River Wapahani Trail (Marion Co.)

These facilities are part of a larger system that not only connects people to community destinations, but also



Figure 3-7. | The Indianapolis Cultural Trail is an 8-mile long trail that winds through downtown Indianapolis.



Figure 3-8. | The Monon Trail is the most well-known trail.

offers commuters active alternatives to driving. Some examples of major trails and greenways located in Central Indiana include the Cultural Trail, the Monon Trail, and the Pennsy Trail.

### The Indianapolis Cultural Trail

The Indianapolis Cultural Trail is an 8-mile long trail that winds through downtown Indianapolis (Fig. 3-7). The trail is a world-class facility that offers safe, healthy, and convenient transportation options for pedestrians and bicyclists. It is the perfect example of how a very automobile-driven city can become more pedestrian friendly and encourage active modes of transportation. The trail replaced one lane of traffic on select downtown streets with curbed bicycle and pedestrian paths and pedestrian amenities such as street trees, swales, benches, lighting, and trash receptacles. The trail is so popular, in fact, that it serves as major attraction for visitors looking to explore the city. While the trail offers opportunities for recreation, one of its most important attributes is its connectivity, between neighborhoods, cultural districts, and other institutions.

### The Monon Trail

The Monon Trail is not only the most well-known trail in the Indianapolis greenways system; it's also one of the most popular (Fig. 3-8). The trail extends 10.3 miles from the Cultural Trail at 10th Street north to Carmel and Westfield. It provides regional connections between neighborhoods, communities and commercial districts from downtown Indianapolis neighborhoods, Carmel, and Westfield. The trail connects to popular landmarks such as the Indiana State Fairgrounds, the Martin Luther King Memorial, Broad Ripple Village, the Nora Commercial Center, the Carmel City Center, the Mass Ave. Cultural District, and Grand Park in Westfield.

### The Pennsy Trail

The Pennsy Trail is an up-and-coming rails to trails multi-use path. The trail is part of the National Road Heritage Trail, which is planned to span over 160 miles and 30 communities from Terre Haute to Richmond (Fig. 3-9). The Pennsy Trail is currently approximately 10-miles long and has completed portions in Indianapolis, Cumberland, and Greenfield. The trail offers users the opportunity to explore shopping, dining, and



Figure 3-9. | The Pennsy Trail is part of the National Road Heritage Trail.

## Concerns and challenges related to walking in Central Indiana

entertainment destinations along the Historic National Road in a naturalized setting.

There are many concerns and challenges related to walking in the region. In Public Survey #1, residents were asked to determine their preferences and concerns related to walking in the region. Major challenges to walking include:

- Lack of Pedestrian Facilities
- Pedestrian Facilities in Poor Condition
- Lack of Amenities
- Unsafe Intersections & Crossings
- Traffic Conditions
- Perceived Crash Risks
- Poor Health

### Lack of Pedestrian Facilities

Many areas in Central Indiana lack basic pedestrian infrastructure. People who may be dependent on walking or public transit for the majority of their trips (i.e., low-income, minority, and senior populations, as well as those with mobility limitations and zero-car households) are severely impacted by lack of sidewalks or gaps in

the pedestrian network. In order to safely access their destinations, pedestrians need routes to high-demand facilities in their communities.

### Pedestrian Facilities in Poor Condition

Many sidewalks and pathways in Central Indiana are in poor condition and in need of repair. These surfaces may be uneven, broken, and/or covered in vegetation and debris. Sidewalks in poor condition are a real hazard for pedestrians and make it difficult to maneuver, especially with mobility aids. In some cases, crumbling sidewalks may create obstacles that lead to tripping, falling, and serious injuries (Langford, 2015).

People with mobility limitations (i.e., those using assistive devices such as wheelchairs, walkers, or canes to move as a pedestrian, or those with visual or cognitive impairments) are negatively impacted by irregular sidewalk conditions, such as broken or chipped surfaces and sudden changes in elevation. Sidewalks that are inaccessible, impassible, and lack curb ramps pose serious safety risks to people with mobility limitations. Sidewalks should be smooth, clear of debris, and wide enough for two wheelchairs to pass one another comfortably in order to make them useable by everyone, regardless of their mobility limitations (Langford, 2015).

### Lack of Amenities

Corridors without proper sidewalk amenities, such as benches, street trees, lighting, and bus shelters reduce pedestrian comfort (Fig. 3-10). These sidewalks may be perceived as unsafe or unfriendly for walking, and influence people's decision to walk. Pedestrian infrastructure should be friendly and inviting and provide a secure environment for people to walk. Sidewalks should have clear sightlines and provide adequate lighting, and the pedestrian walking zone should be clear of obstructions to eliminate potential safety hazards (Langford, 2015).

### Unsafe Intersections and Crossings

Intersections and crossings are where pedestrians and vehicles interact (Fig. 3-11). These areas have the potential for pedestrian/vehicular crashes with serious injuries or fatalities and are the most challenging



Figure 3-10. | Corridors without proper sidewalk amenities reduce pedestrian comfort.

areas in the pedestrian network. Unsafe intersections and crossing locations can discourage walking for pedestrians, and discourage walking (Langford, 2015).

In order to improve safety at intersections and crossing locations, the actions of pedestrians should be as visible and predictable as possible. Pedestrian safety should be maximized through accommodations such as curb ramps and crosswalks. Pedestrians should be encouraged to cross at signalized intersections, where vehicular traffic should be slowed to increase pedestrian awareness. Signal phasing and timing should favor pedestrians to reduce wait times and allow enough time to safely cross the street. Crossing distances should be minimized where possible. In areas with multiple travel lanes, pedestrian safety islands and median treatments should be considered to offer pedestrians a safe place to wait for the next crossing cycle (Langford, 2015).

### Traffic Conditions

Pedestrian perceptions of safety are directly related to traffic conditions. High traffic volumes and travel speeds impact people's decision to walk. Sidewalks that are directly adjacent to high volumes of fast-moving traffic are extremely uncomfortable for pedestrians, and the risk of pedestrian injuries and fatalities significantly increases with higher travel speeds. Road diets, lower speeds, on-street parking, and buffers between the road and the sidewalk should be considered to increase pedestrian comfort and safety. Road diets, also called



Figure 3-11. | Intersections and crossings are where people and vehicles interact.

lane reductions, or techniques where the width of the road and the number of lanes is reduced in order to provide room for other modes of transportation, landscaping, or amenities to achieve transportation improvements.

### Perceived Crash Risks

Perceived crash risks are one reason pedestrians choose not to walk. Perceived crash risks are situations where pedestrians feel exposed to vehicular threats. Built environment factors including lack of pedestrian infrastructure or facilities in poor condition, neighborhood location, and traffic conditions can increase pedestrian perceptions of risk. Crash statistics show that serious pedestrian injuries and fatalities due to vehicular collisions in the United States are on the rise. From 2012-2017 in Central Indiana, 568 pedestrians were seriously injured in a crash with a vehicle, and 163 pedestrians died. Around 30 pedestrians die every year in vehicle crashes (ARIES/MPO). According to the Governors Highway Safety Association (GHSA) in their 2018 Preliminary Data Report on Pedestrian Traffic Fatalities by State, the number of pedestrian fatalities in the United States increased approximately 35% from 2008 to 2017. Between January and June 2018, Indiana had 42 pedestrian fatalities. While that's down 31% since 2017, Indiana pedestrian fatalities remain too high.

### Poor Health

Another reason people may choose not to walk is poor health. People in Indiana are becoming increasingly sedentary as our lifestyles rely on driving as a means of transportation, rather than walking. According to America's Health Rankings Annual Report: Physical Inactivity in Indiana produced by the United Health Foundation, in 2018, 31.6% of women and 27.8% of men in Indiana were considered physically inactive (United Health Foundation). Further, obesity rates in Indiana are very high. According to the State of Childhood Obesity, "Indiana has the 15th highest adult obesity rate in the nation, and the 11th highest obesity rate for youth ages 10 to 17" (Robert Wood Johnson Foundation, 2018).

While there are numerous health risks associated with an inactive lifestyle, walking can help you improve health by helping to maintain a healthy weight, manage chronic conditions, and improve mental wellbeing. According to the former U.S. Surgeon General Vivek H. Murthy in 2013, "An average of 22 minutes a day of physical activity – such as brisk walking – can significantly reduce the risk of heart disease and diabetes," (Project for Public Spaces). Many of the existing challenges and concerns form the basis for establishing a vision for pedestrian connectivity in Central Indiana.

# 4

## VISIONING & PLAN DEVELOPMENT





## VISIONING & PLAN DEVELOPMENT

In 2018, the MPO began the process of updating the pedestrian plan for the Metropolitan Planning Area (MPA). This study builds upon previous planning efforts conducted by other counties and communities throughout Central Indiana and seeks to increase regional walkability.

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### Relationship to other Planning Documents

The MPO Regional Pedestrian Plan relies on existing data and planning documents as a foundation. At the beginning of this process, an inventory of existing plans and resources was conducted to build a comprehensive understanding of local pedestrian-related practices. With assistance from the Indianapolis MPO and the project Steering Committee, identified and evaluated existing plans were used to ensure that all relevant data was accounted for. [For a complete list of relevant existing plans and resources at the county, city, and town levels, please refer to Appendix B: Relevant Plans.](#)

During future transportation planning, the Pedestrian Plan will be used as a reference for applicable pedestrian infrastructure improvements. The recommendations outlined in this plan should also be considered when updating other Central Indiana plans.

Pedestrian planning is a process that emphasizes the importance of walking as a form of active transportation.

## Planning Overview

### Part 1: Inventory of Existing Resources

#### *Inventory of Existing Data*

Based on information provided by the Indianapolis MPO and the project Steering Committee, an inventory of existing city plans for the MPO planning region pertaining to pedestrian planning or improvements was conducted. The intent of this review was to gain a better understanding of local pedestrian-related practices and plans.

These resources were reviewed to understand the methodologies and best practices to develop consistent parameters for the extension of the planning process to all counties in Central Indiana. In particular, the team utilized the Indianapolis MPO Regional Pedestrian Plan and the Marion County WalkWays Plan as building blocks for the Regional Pedestrian Plan.

### Part 2: Vision, Goals and Objectives

#### *Development of Vision, Goals and Objectives*

Working with the project Steering Committee, a preliminary vision, goals and objectives for the project were developed based on relevant plans and documents to form the basis for future recommendations and prioritization. The vision, goals and objectives were reviewed and approved by the project Steering Committee (Fig. 4-1).

### Part 2: Public Engagement

#### *Public Outreach*

A series of public outreach opportunities were held to publicize the plan, explain the process, and encourage involvement by local residents, community groups, government entities, and other organizations who have a stake in the development of pedestrian facilities. These meetings and materials were developed to broaden

awareness of the planning process and encourage the engagement of these groups. Brochures and materials with general information about the project were provided to project Steering Committee members for distribution to public officials and at areas around Central Indiana. These materials were also made available on the project's website.

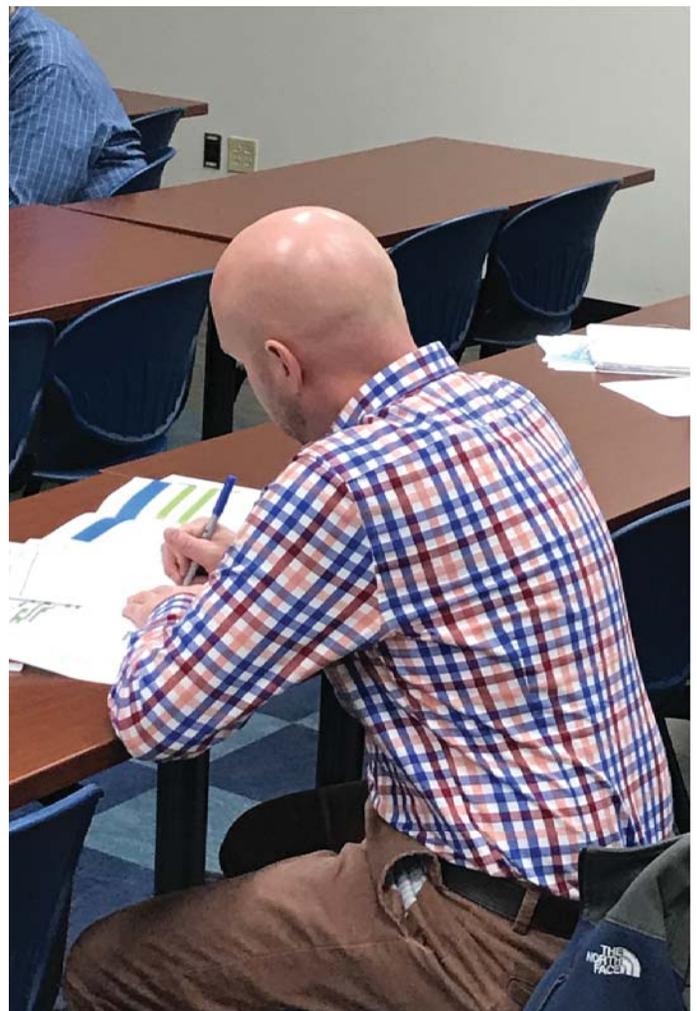


Figure 4-1. | The vision, goals and objectives were reviewed and approved by the project Steering Committee.

### Online and In-Person Public Engagement

A series of public engagement opportunities were developed to help promote the plan and engage Central Indiana residents in the planning process. Social media was used for outreach (Fig. 4-2). Participants were asked to provide feedback, suggestions, and other ideas on plan components and topics related to regional walkability. Public engagement opportunities included two public surveys, a series of Facebook posts, and a Facebook Live event providing a general overview of the Regional Pedestrian Plan. During May, MPO staff visited locations across Central Indiana including libraries, festivals, and city halls to allow people to take Public Survey #2 and promote the Facebook Live event.



Figure 4-2. | Social media was used as one form of outreach communication.

### Part 3: Data Collection and Mapping

#### Collection of Existing Data

In order to develop a comprehensive understanding of the existing conditions of pedestrian facilities in Central Indiana, the project team gathered relevant data from MPO staff and local communities and organizations in the planning area. This data was reviewed to identify potential recommendations for the regional pedestrian network.

#### Existing Conditions Mapping

Using existing data, a series of base maps were created as part of the existing conditions assessment for Central Indiana. This mapping identified general areas with deficient pedestrian infrastructure or lack of pedestrian facilities.

### Part 4: Identification of Pedestrian Improvements and Prioritization

#### Identification of Potential Improvement Areas

Based on existing data from the MPO, other communities and organizations within the planning area, the project Steering Committee, and initial public feedback, potential areas of improvement were mapped. This process used indices derived from the areas of interest presented in Public Survey #2, including wellness, pedestrian safety, walking comfort, equity, and pedestrian demand.

#### Develop a Prioritization Process

The indices were used to guide the prioritization of future improvement projects and identify improvement areas that have the greatest potential for impact to the regional pedestrian network (Fig. 4-3).

#### Rank Prioritization Metrics

Ranking procedures were used to ensure that areas with the greatest need for pedestrian infrastructure are funded first. These strategies use the indices to identify areas of priority investment. Four preliminary ranking strategies were developed for the project, including Public Input Driven, Steering Committee Feedback, Marion County Walkways Plan Priorities, and Planning Best Practices.

### *Develop a Composite Ranking Procedure*

A final, composite ranking strategy was developed based on the preliminary ranking strategies to help guide decision makers on where to make investments for pedestrian infrastructure.

### *Develop a Final Priority Map of Projects*

The next step in the prioritization process was to develop project priorities. Based on the priority investment areas identified by the composite ranking strategy, the gaps in the pedestrian network were weighted and organized into five priority tiers. Tier 1 included the top priority gaps and Tier 5 included the lowest priority gaps. **Maps at the regional and county levels can be found in Appendix G: Improvement Projects.**

### *Establish Pedestrian Safety Measures and Policies and Procedures*

Potential pedestrian safety measures and policies and procedures were provided to guide the implementation of pedestrian infrastructure and make Central Indiana a safer, more comfortable place to walk. These recommendations are tools for the integration of pedestrians into roadway design and should be considered and implemented in future roadway, intersection, and pedestrian crossing projects to ensure the safety and comfort of all users.



Figure 4-3. | The indices guide the prioritization of future improvement projects and seek to identify improvement areas that will bring the greatest amount of impact to the regional pedestrian network.



## Vision, Goals and Objectives

### Vision

The vision statement for this project is a reflection of the desires for a future walkable, pedestrian-friendly Central Indiana.

*Provide a safe, efficient, and balanced comprehensive pedestrian network that promotes local and regional connectivity, maximizes community benefit, and establishes pedestrian facilities as an equal component of the regional transportation network. This system should provide for residents' daily transportation, recreation, and everyday walking uses.*

### Goals and Objectives

Several goals and objectives were identified in the first Public Survey and the Steering Committee process. These goals and objectives were developed by vetting topical areas against local and national best practices. The resulting goals objectives were organized into specific categories for this project. The goals and objectives are as follows:



### Connectivity

*Create a regional network of convenient, connected, and well-designed sidewalks and paths throughout the Central Indiana region.*

- Establish a “web” network of convenient, safe, and well-designed pedestrian facilities that link local and regional systems and community destinations.
- Provide pedestrian connectivity to community destinations such as health care/medical facilities, job centers, schools, shopping centers, and other community destinations.
- Promote the use of pedestrian facilities to aid in the mitigation of traffic congestion.
- Identify pedestrian connections to transit.
- Encourage the expansion of key existing pedestrian infrastructure across jurisdiction lines to targeted growth areas through coordination between utility providers, municipalities, and counties.
- Complete the pedestrian network where gaps currently exist.



## Vision, Goals and Objectives



### Safety

*Create a safe and inviting sidewalks and paths network throughout the MPA.*

- Provide safe pedestrian movement as part of transportation projects through safety standards for pedestrian facilities, appropriate designs for transportation systems, and community awareness campaigns.
- Create pedestrian infrastructure that provides an increased level of safety for users.
- Design safe, low-stress, and appropriate roadway crossings.
- Work tactically to reduce pedestrian-vehicle crashes.
- Follow national complete streets design guidelines for roadways.
- Address pedestrian safety concerns for urban, suburban, and rural intersections to with pedestrian safety countermeasures, such as curb ramps and extensions, marked crosswalks, crossing islands, raised pedestrian crossings, and advance stop/yield signage.
- Support the creation of targeted programs for increased safety of students, seniors, and at-risk populations, such as Safe Routes to School and Safe Routes for Seniors.



### Wellness & Quality of Life

*Create sidewalks and paths that promote walking, increase opportunities to walk, and connect people to meaningful destinations.*

- Provide fair and equitable pedestrian access to schools, job centers, and other locations frequently used by residents
- Partner and support local initiatives to use the pedestrian system as a tool to address public health concerns.
- Provide a convenient network of pedestrian facilities for people of all demographics to encourage health and fitness.
- Collect and analyze data to identify and target areas with higher rates of chronic diseases for pedestrian infrastructure improvements.
- Partner with Central Indiana communities to monitor and integrate additional projects to the needs list and collaborate on funding.
- Enhance natural, cultural, and historic resources with a compatible pedestrian system.



## Community Benefit

*Recognize and develop projects that provide additional community benefit beyond just the benefits of walking.*

- Promote the pedestrian system to support regional population attraction and retention, businesses, tourism links, and other economic opportunities.
- Prioritize developer investment with pedestrian infrastructure between developments and existing facilities.



## Collaboration & Education

*Communities should work together, across municipal and county boundaries, to support sidewalks and paths that are enjoyable, useful, and have an impact on the most people's lives.*

- Collaborate with local partners to program pedestrian facilities to highlight learning opportunities.
- Engage people in the planning and development of the pedestrian system to build consensus and create regional pride.
- Provide program and policy recommendations that help support and increase walking in communities.
- Collaborate with regional partners to establish funding for an educational campaign that promotes engagement of all demographics of the pedestrian network.

# 5

## PUBLIC ENGAGEMENT





# PUBLIC ENGAGEMENT

The Indianapolis MPO facilitated a series of public engagement opportunities to inform local residents and organizations about the plan and the planning process and to determine residents' opinions on walking in Central Indiana.

## How have we generated and obtained public input?

Input was gathered from community stakeholders, elected officials, local organizations, and the general public in order to determine walking needs and challenges and refine plan content to improve regional mobility. Participants were invited to provide feedback, suggestions, and other ideas. Public engagement opportunities included the following:

- Community Outreach
- Website and Social Media Materials
- Public Engagement Materials
- Public Survey #1
- Public Survey #2
- Facebook Posts
- Facebook Live Event

### Community Outreach

In-person public feedback was solicited from a broad, diverse group of people from across the region, including the general public (pedestrians, bicyclists, and motorists), local organizations, and regional partners. MPO staff visited locations across Central Indiana including libraries, festivals, and city halls to allow people to take Public Survey #2 and promote the Facebook Live event. [A full list](#)

of locations can be found in [Appendix D: Public Engagement](#). Survey responses were collected on site using iPads. People who wanted to take the survey later were given business cards with a link to the online survey.

### Website and Social Media

For all feedback opportunities, including the public engagement materials, Public Surveys #1 and #2, and the Facebook Live Event, the Indianapolis MPO used their existing website, social media accounts, and the teMPO newsletter to promote the plan and encourage public participation.

#### *Indianapolis MPO website*

The Indianapolis MPO website offers general information about the project, project milestones and next steps, and links to the public engagement materials.

#### *Social Media*

Residents were invited to follow the Indianapolis MPO's Facebook ([facebook.com/IndyMPO](https://facebook.com/IndyMPO)) and Twitter ([twitter.com/indympo](https://twitter.com/indympo)) accounts for project updates and future public engagement opportunities.

## teMPO Newsletter

The Indianapolis MPO's weekly email newsletter, the teMPO, provides information about regional project updates, upcoming educational and public input opportunities, and useful transportation news. Participants were invited to subscribe at [indympo.org/tempo](http://indympo.org/tempo).

## Public Engagement Materials

Public engagement materials, including a Frequently Asked Questions (FAQ) sheet, a rack card, a survey reminder sheet, and Public Surveys #1 and #2 results were made available to the public on the Indianapolis MPO's Website (Fig. 5-1). A complete list of the public engagement materials can be found in Appendix A.

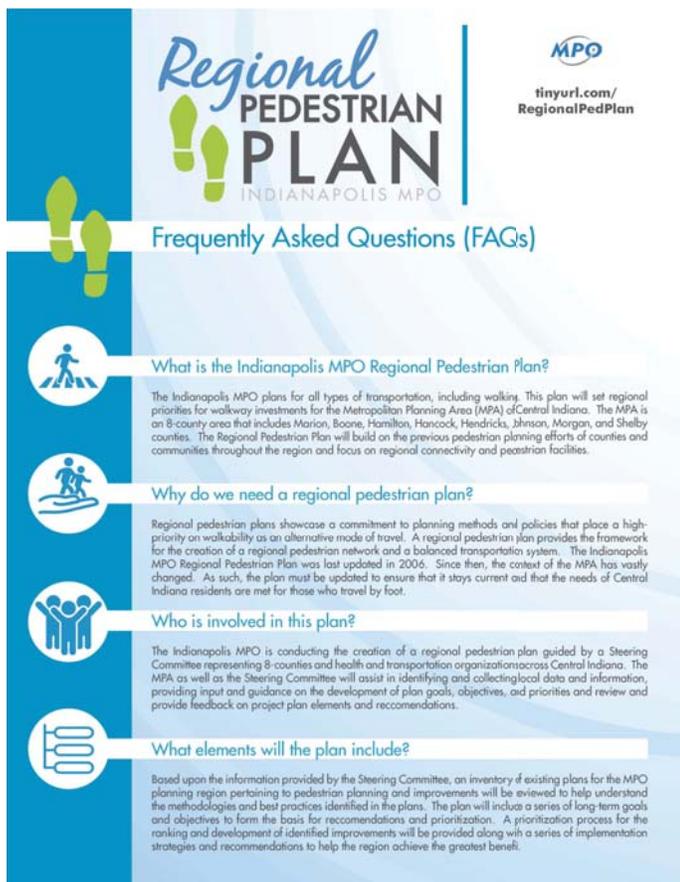


Figure 5-1. Public engagement materials were made available to the public on the Indianapolis MPO's Website.

## Public Survey #1

The first public survey asked Central Indiana residents to determine their preferences and concerns regarding sidewalks, trails, and other pedestrian facilities in their communities. The survey was active for approximately one month from Friday, November 9, 2018 to Saturday, December 15, 2018. It asked about concerns and challenges related to pedestrian connectivity and to help the Central Indiana region become more walkable. Results of the survey were evaluated and used to help set priorities for walkway investments (Fig. 5-2). A total of 283 people responded to the survey, which focused on the following:

- Determining how respondents are walking (prevalence, mode, and destination).
- Determining where respondents would walk to if they had better pedestrian access or lived somewhere else.
- Understanding what makes Central Indiana a great place to walk.
- Examining challenges to walking (i.e., personal safety and/or other reasons).
- Gathering recommendations for improving the walking environment.

## Survey results

Below are some of the general conclusions from the first public survey:

### Demographics

Nearly half of the respondents were between the ages of 25-44. 65% of respondents were female, while 87% identified as white or Caucasian. Nearly half of respondents reported incomes greater than \$62,000. 80% of respondents reported they lived in Marion County, while 78% of respondents reported they worked in Marion County.

### Prevalence of Walking

Most respondents (77%) said that they walked for at least thirty (30) minutes at a time during the week for recreation, exercise, to get to/from places, or for any other reason.

### Assistive Devices

Most respondents (98%) said that they do not use an assistive device to move as a pedestrian. Of those that said that they use an assistive device, most said that they moved using a cane (71%), while others used a walker (15%) or a motorized scooter/wheelchair (15%).

### Destinations for Walking (Current)

Respondents were asked to determine which destinations they did or didn't walk to now from a list of seven (7) destinations, including work, school, public transit facilities, medical services, grocery facilities, entertainment facilities, and for exercise. Most respondents (87%) said that they currently walk for exercise more than walking to a specific destination. The top three destinations that respondents currently do NOT walk to/from included:

- Medical services - 66%
- Work - 65%
- Grocery facilities - 62%

### Destinations for Walking (Future)

Respondents were asked to determine which destinations they would want to walk to if they had better pedestrian access or lived somewhere else from a list of seven (7) destinations, including work, school, public transit facilities, medical services, grocery facilities, entertainment facilities, and for exercise. Most respondents (95%) said that they would like to walk for exercise more than any other destination, closely followed by walking to/from entertainment facilities (92%). The top three destinations that respondents do NOT want to walk to/from included:

- Medical services - 23%
- Work - 18%
- Grocery facilities - 12%

While respondents of the first public survey did not indicate being interested in walking to medical services, work, or grocery facilities, the project Steering Committee felt these destinations were important considerations to include for the ranking of priority investment areas.

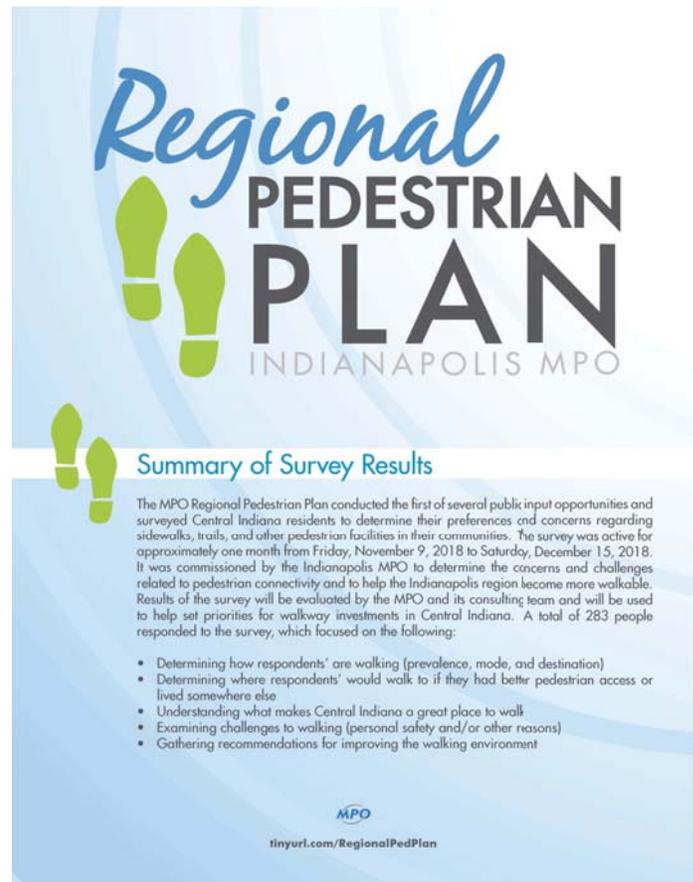


Figure 5-2. | Results of the survey were evaluated by the project team and used to help set priorities.

### Community Walking Amenities

Respondents were asked to identify what makes their community a great place to walk from a list of options. Most respondents (59%) said that their community had a good network of pedestrian facilities (ex. sidewalks, multi-use paths). Nearly 52% of respondents identified that being within walking distance of their destinations is what made their community a great place to walk.

### Personal Safety

Respondents were asked if they ever felt threatened for their personal safety when they walked, and, if so, why. Most respondents (69%) said that they felt threatened for their personal safety at some point when they were walking.

Options for why respondents felt threatened for their personal safety while walking included motorists behavior, potential for crime, not enough people, unsafe pedestrian facilities, bicycles, skateboards, or scooters using sidewalks or trails, people walking dogs, and loose dogs or other animals (Figure 5-3). The top three responses to these threats included:

- Motorists behavior - 51%
- Motorists too close to walkways - 40%
- Unsafe pedestrian facilities - 35%

### Challenges to Walking

Respondents were asked to identify reasons they did not walk more frequently from a list of options. Most respondents (50%) cited the speed of automobile traffic being too fast and/or the volume of automobile traffic being too high as a major reason they did not walk more frequently. This was closely followed by unsafe intersections or crossing locations due to the lack of pedestrian signals and/or time to cross (47%) and a lack of pedestrian facilities such as sidewalks or multi-use paths (46%) (Fig.5-4).

### Locations for Improvement

Respondents were asked to identify the types of locations they think need the most improvement in their walking environment from a list of options. Most respondents (53%) said that major intersections needed the most improvement, closely followed by major street corridors (51%). Other results included:

- Near parks or other recreation centers - 21%
- Near entertainment facilities - 21%
- Near highway interchanges - 35%
- Near public transit - 22%
- Near schools - 17%
- On bridges or overpasses - 16%

### Public Survey #2

Public Survey #2 gauged Central Indiana residents' priorities when it comes to pedestrian infrastructure like



Figure 5-3. | Motorists behaviors are one reason pedestrians felt threatened for their personal safety.

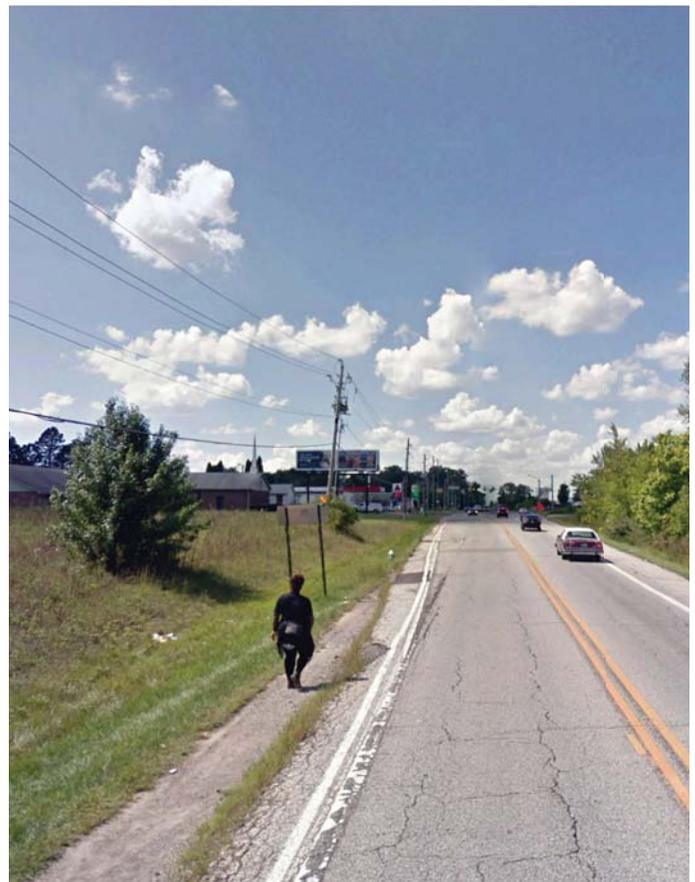
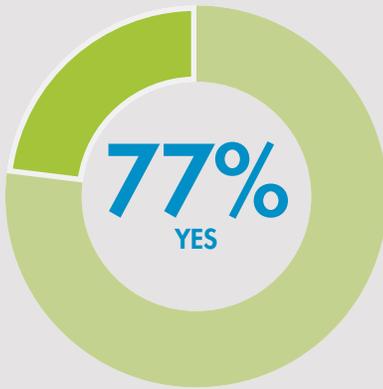


Figure 5-4. | Lack of pedestrian facilities is a major reason respondents chose not to walk more frequently.

# PUBLIC SURVEY #1: SNAPSHOT

## PREVALENCE OF WALKING



In your usual week, do you WALK for at least thirty (30) minutes at a time?

## ASSISTIVE DEVICES

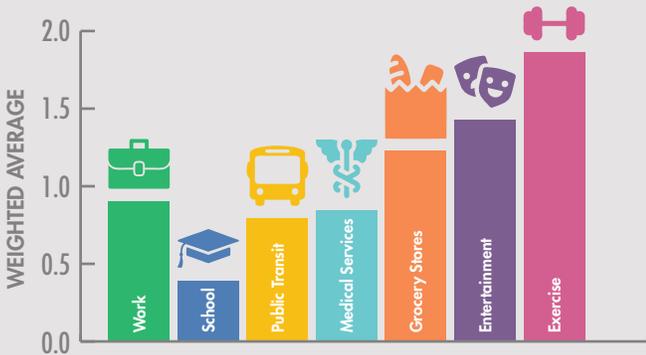


Do you use an assistive device to move as a pedestrian?

## PERSONAL SAFETY



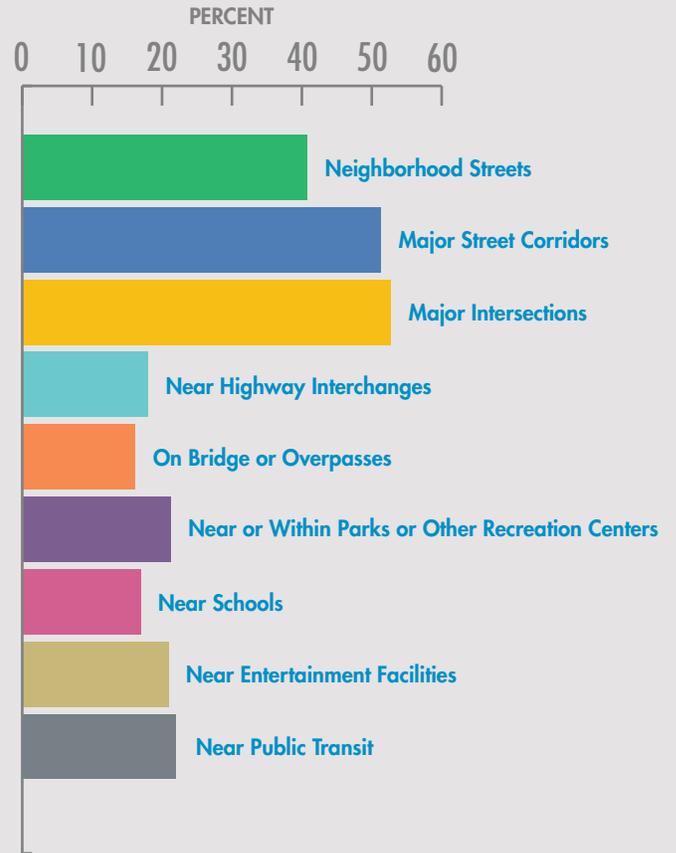
Do you ever feel threatened for your personal safety when you WALK?



## DESTINATIONS FOR WALKING (CURRENT)



## DESTINATIONS FOR WALKING (FUTURE)



## LOCATIONS FOR IMPROVEMENT

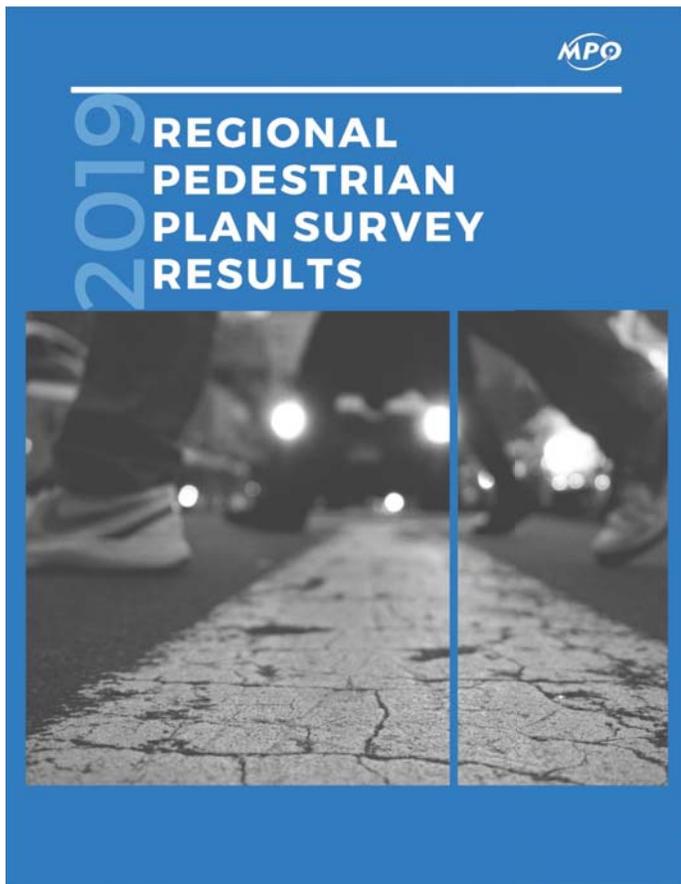


Figure 5-5. | Results of the survey were evaluated by the project team and used to help set priorities.

walkways and trails. The survey was made available through MetroQuest and remained open between May 1, 2019 and June 21, 2019. A total of 897 people responded to the survey. The results helped to set priorities for pedestrian infrastructure investment in Central Indiana (Fig. 5-5).

### Survey Results

Below are some of the general conclusions from this survey:

#### Demographics

48% of respondents were between the ages of 21-45, while 41% of respondents were between the ages of 46-65. 59% of respondents were female, while 85% identified as white or Caucasian. Over 40% of respondents reported incomes between \$45,001 - \$100,000, and just under 40% of respondents reported

incomes between \$100,001 - \$200,000. 63% of respondents said they lived in Marion County, with at least some level of survey participation from all counties in the Central Indiana region except Morgan County.

#### Goals and Objectives Ratings

Survey respondents were asked to rank each of the goals out of five stars, with five stars being the highest rating. They were provided with a brief description of the goals, as well as potential objectives that could be utilized to obtain the respective goal. The average ratings, in order from highest to the lowest, are as follows:

1. Safety
2. Connectivity
3. Wellness/Quality of Life
4. Community Benefit
5. Collaboration/Education

#### Areas of Interest and Prioritization

Building on previous studies conducted by communities and local organizations throughout the region, the survey uses quantitative categories defined by the Marion County WalkWays Plan, including safety, location, equity, health and wellness, and comfort, to prioritize areas for investment in pedestrian infrastructure. Respondents were asked to order their top five areas of interest from most important to least important. The elements were ranked via star allocation, with five stars being the most important. The average ratings, in order from most important to least important, are as follows:

1. Safety
2. Location
3. Equity
4. Health and Wellness
5. Comfort

## PUBLIC SURVEY #2: SNAPSHOT

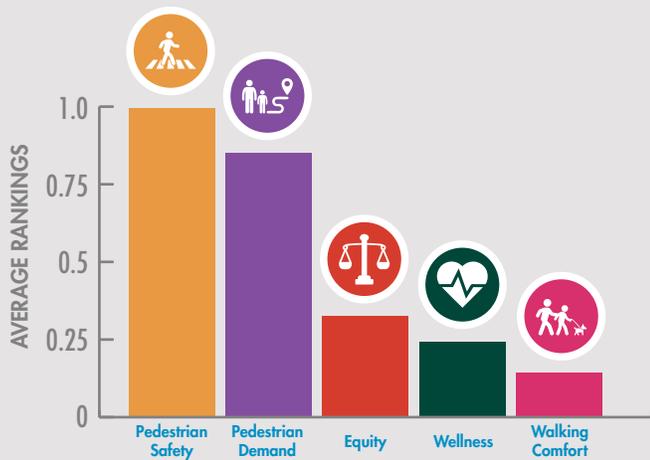
### GENDER



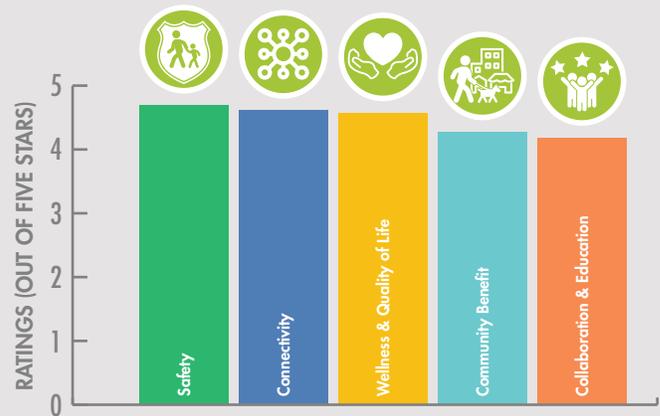
### AGE



### HOUSEHOLD INCOME



### AREAS OF INTEREST & PRIORITIZATION



### GOALS & OBJECTIVE RATINGS



#### PEDESTRIAN SAFETY

Prioritize projects in high-crash locations to improve safety.



#### PEDESTRIAN DEMAND

Prioritize projects that take people where they want to go (i.e. restaurants, work, school, grocery store, entertainment).



#### EQUITY

Prioritize projects in areas where people have lower incomes and less access to personal vehicles, where people are more likely to walk where they need to go.



#### WELLNESS

Prioritize projects in areas where people are less healthy, so that they have a way to walk and exercise to improve their health.



#### WALKING COMFORT

Prioritize projects that can improve how comfortable a person feels while walking (with consideration for conditions on a street, such as traffic speed, number of cars going by, separation from car lanes, street width, and presence of street lights).



Figure 5-6. | Promotional posts were boosted three times to increase traffic and reach a wider audience.

## Facebook Posts

In order to promote Public Surveys #1 and #2 and the Facebook Live Event, a series of posts were shared on the Indianapolis MPO’s Facebook page highlighting various topics relating to walking in Central Indiana (Fig. 5-7 - 5-9). Promotional posts were boosted three times to increase traffic and reach a wider audience (Fig. 5-6).

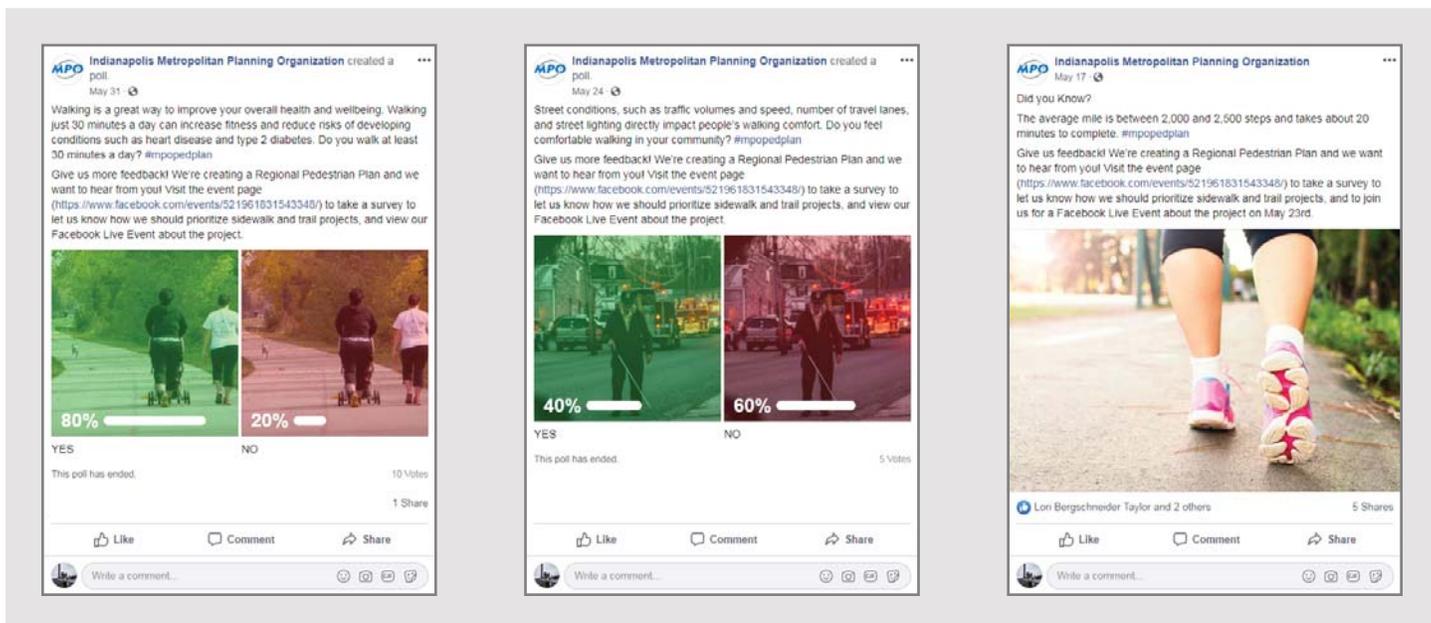
Facebook boost insights were reviewed to gauge participation in the Regional Pedestrian Plan, where engagement is any action taken by someone on one of our posts, reach is the total number of people who had content from our posts appear on their screen, and impressions are the number of times content from our posts appeared on their screen.

Boost Insights are as follows:

- 389 Post Engagements
- 8,667 Facebook Reach
- 13,694 Facebook Impressions

## FACEBOOK POSTS

Figures 5-7 - 5-9. | Posts on the Indianapolis MPO’s Facebook page highlighted various topics related to walking.



## Facebook Live Event: May 23, 2019

A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO on May 23, 2019 from 12:00 PM to 12:30 PM (Fig. 5-10 - 5-11). The purpose of this event was to provide a quick presentation followed by a live question and answer session about the project. The Facebook event format provided flexible alternative to in-person public meetings, where those who are unable to attend the meeting in person are still offered the opportunity to participate.

Participants were asked to provide feedback on concerns and thoughts relating to the existing pedestrian network in the region and participate in Public Survey #2 to tell

us how we should prioritize sidewalk and path projects in Central Indiana. Since it was published, the video has been viewed a total of 47 times as of November 11, 2019. Multiple methods of participation were provided during the event, including:

- Asking questions and leaving comments on the discussion page
- Sending a direct message to the Indianapolis MPO via Facebook or Twitter
- Emailing [info@indyMPO.org](mailto:info@indyMPO.org), for those that are watching but don't have a Facebook account

## FACEBOOK LIVE EVENT

Figures 5-10 - 5-11.

A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO.



### Regional Pedestrian Plan Discussion

"The Metropolitan Planning Organization is creating a Regional Pedestrian Plan, which will set priorities for walkway investments for Central Indiana (Marion, Boone, Hamilton, Hancock, Hendricks, Johnson, Morgan, and Shelby counties). The Regional Pedestrian Plan will build upon the previous pedestrian planning efforts of counties and communities throughout the region and focus on regional connectivity for sidewalks and paths.

Join us for a quick presentation and live Q & A about the project on Thursday, May, 23 at 12:05 PM. You can also tell us what you think now, by taking this survey to let us know how we should prioritize sidewalk and path projects. (<https://RegionalPedPlan.metroquest.com>). The Survey closes June 7."

- quoted from the Indianapolis MPO Facebook Live event post

## Facebook Live Event: January 15, 2019

A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO on May 23, 2019 from 12:00 PM to 12:30 PM (Fig. 5-12 - 5-13). The purpose of this event was to provide a quick presentation followed by a live question and answer session about the project. The Facebook event format is a flexible alternative to in-person public meetings, where those who are unable to attend the meeting in person are still offered the opportunity to participate.

Participants were asked to provide feedback on concerns and thoughts relating to the existing pedestrian network in the region and participate in Public Survey #2 to tell

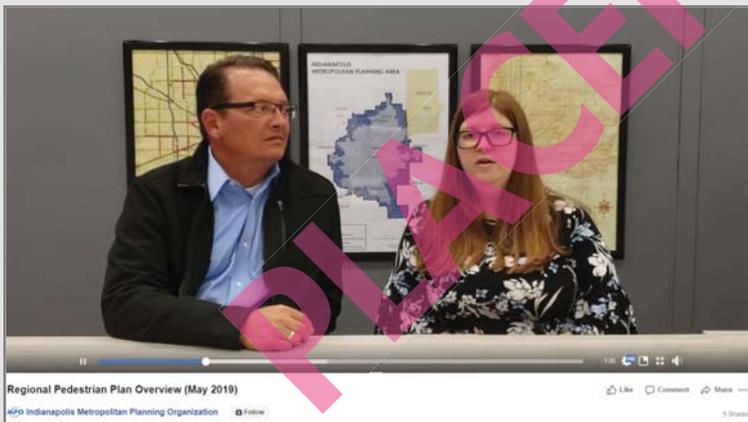
us how we should prioritize sidewalk and path projects in Central Indiana. Since it was published, the video has been viewed a total of 47 times as of November 11, 2019. Multiple methods of participation were provided during the event, including:

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## FACEBOOK LIVE EVENT

Figures 5-12 - 5-13.

A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO.



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- quoted from the Indianapolis MPO Facebook Live event post

# Central Indiana residents care about making our region more walkable. Over 1,000 people commented from across Central Indiana on the development of the Regional Pedestrian Plan.

## What did we hear?

Residents who participated in the plan's development said that some of the biggest challenges related to walking in Central Indiana include the speed of automobile traffic being too fast and/or the volume of automobile traffic being too high, unsafe intersections or crossing locations due to the lack of pedestrian signals and/or time to cross, and a lack of pedestrian facilities.

Most residents felt threatened for their personal safety at some point when they were walking due to motorist's behavior, vehicles being too close to walkways, and unsafe pedestrian facilities. When residents were asked to identify which types of locations they thought needed the most improvement in the walking environment, most said major intersections and major street corridors.

One strong point of agreement for Central Indiana residents was the need for accessible facilities that prioritize pedestrians over other modes of travel to increase pedestrian safety. In order to establish a prioritization process based on public input, residents were asked their top five areas of interest based on the project vision, goals and objectives.

Based on the survey results, pedestrian safety was ranked highest, followed by pedestrian demand, equity, wellness, and pedestrian comfort. This feedback was averaged with the other preliminary ranking procedures to develop a final, comprehensive ranking strategy for the prioritization of pedestrian investment areas in Central Indiana.

Evidence shows we need to prioritize pedestrians over cars. Slowing automobile speeds is key to creating a more comfortable walking environment.

Pedestrians should have priority over automobiles in urban areas!

We need more sidewalks! I live near everything, but it's just plain dangerous without sidewalks.

There are many streets and neighborhoods in Indy with no sidewalks or pedestrian walkways. This should be improved, making neighborhoods safer and more accessible.

We need sidewalks! I can't even walk to the hospital without walking in the street!

I lived in a major city when I was younger. I bussed to work and walked home a couple miles each afternoon. I walked to the grocery; I walked to the movies; I loved walking everywhere! I look out on the back of a grocery store now, and it's not safe to walk there.



# 6

## PRIORITIZATION





# PRIORITIZATION

In order to make the region more walkable, Central Indiana must dedicate its resources to improvement areas that bring the greatest amount of impact.

---

## What is the prioritization process?

A prioritization process was designed to provide decision makers with general recommendations on where to begin on improving upon and expanding the regional pedestrian network. The approaches described herein use quantitative data from a series of priority investment area indices to help identify which areas should be funded first. This chapter explains the overall approach to prioritization in order to guide communities on where to make investments for sidewalk projects.

## What steps are included in the prioritization process?

The prioritization process was built on quantitative data validated by feedback obtained through the public engagement process and steering committee meetings. The prioritization process plays an integral role in the Regional Pedestrian Plan. Counties, cities, and towns in Central Indiana may have different local priorities. This plan offers regional priorities as a resource for consideration in local decisions. The prioritization process involves a series of five steps:

- Determine Measures of Priority Investment
- Establish Quantitative Rank
- Apply Preliminary Ranking Strategies
- Assign Weights
- Produce the Tiers



## The Prioritization Process



### Determine Measures of Priority Investment

By examining the factors that affect how and where people are walking, concerns and challenges related to pedestrian connectivity, and ways in which pedestrian infrastructure can impact the options and outcomes of walking, the changes that are necessary to get more people walking in Central Indiana can be identified. In order to determine pedestrian needs, each of the five priority investment area indices were mapped using measures indicating major areas or conditions of concern. These measures are drivers of influence for their corresponding indices and were selected based on their defining characteristics, as well as availability of data for the Central Indiana region.



### Establish Quantitative Rank

Priority areas were classified from high to low quantitative rank to create a series of heat maps, revealing “hot spots” that indicate high priority. These high priority areas represented a snapshot of existing conditions in Central Indiana and help identify areas in the region that are in most need of pedestrian infrastructure improvements.



### Apply Preliminary Ranking Strategies

The priority investment area indices of greatest importance were selected based on a series of preliminary ranking strategies. These ranking strategies were used to evaluate the priority investment areas and inform the creation of a fifth, composite ranking strategy to assist communities in prioritizing their pedestrian improvement projects. Preliminary ranking strategies included public input driven, steering committee input, the Marion County Walkways Plan priorities, and best practices.



### Assign Weights

The priority investment areas indices were weighted based on a series of contributing factors to each ranking strategy. Some indices are weighted higher than others and thus have a greater impact on the determination of high priority investment areas. The ranking strategies maps combined the indices maps into a single prioritization map for each ranking strategy that assigns priority scores, or “tiers” in five categories.



## Produce the Tiers

Once weights were assigned and each index was mapped, a hierarchy of colors develops which indicate the level of priority of a particular area. These levels, or tiers, formed the basis for prioritization. Higher value tiers represented higher priority, while lower priority tiers represented lower priorities. These tiers should be considered as a flexible “framework” for communities to use in prioritizing their own projects.

Based on the four ranking strategies, a composite ranking strategy was developed that encompasses the results of the four ranking strategies and serves as a guide for prioritization of pedestrian infrastructure improvements.

### Priority Investment Area Indices

The priority investment areas indices are metrics used to rank areas of priority investment. They were derived from the goals and objectives and community planning efforts and vetted through Public Survey #2. Descriptions of each indice and its associated mapping are included on the pages that follow. The areas of interest are as follows:

- Pedestrian Safety
- Equity
- Wellness
- Pedestrian Demand
- Walking Comfort



Pedestrian Safety



Equity



Wellness



Pedestrian Demand

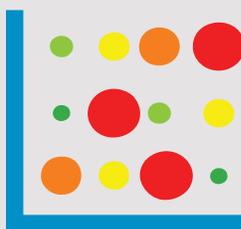


Walking Comfort

## THE PRIORITIZATION PROCESS



Determine Measures of Priority Investment



Establish Quantitative Rank



Apply Preliminary Ranking Strategies



Assign Weights



Produce the Tiers



## PRIORITY INVESTMENT AREAS INDICES: PEDESTRIAN SAFETY

### Prioritize projects in high-crash locations to improve safety.

---

Everyone is a pedestrian at some point in their day. Safety is directly related to people's willingness to walk - the safer streets are for walking, the more likely people are to walk.

According to the AAA Exchange, one of the biggest indicators of walking safety is the density of pedestrian/vehicular collisions. Common types of pedestrian-related collisions include:

- Dart-outs and intersection dashes occur when pedestrians suddenly appear in the road, leaving drivers with limited time to react.
- Multiple threats occur when vehicles stop to allow pedestrians to pass, blocking views of other drivers who may not see pedestrians crossing.
- Commercial bus or vendor truck related incidents occur when pedestrians approach these vehicles and are subsequently struck by oncoming vehicles.
- Vehicular turns and merges commonly occur at intersections where pedestrians and vehicles have the most interaction, and happen when drivers are focused on traffic and don't see pedestrians attempting to cross.
- Back-ups happen when drivers back out of parking spaces and don't check for pedestrians, or pedestrians dart out behind moving vehicles. The greater the density of pedestrian/vehicular collisions, the less safe a corridor is for walking.

The way we design and plan for streets has a tremendous impact on walking safety. Streets with no sidewalks or safe crossings, wide lane widths, and high traffic speeds encourage people to drive fast and pose safety risks to pedestrians. These streets fail to adequately meet the needs of everyone in the community.

The following measures of pedestrian safety were used to help identify areas in Central Indiana that experience poor pedestrian safety:

- Number of pedestrian/vehicular collisions (incapacitating and non-incapacitating injuries)
- Existing pedestrian infrastructure network
- Lane widths

#### **Mapping Data Sources:**

Pedestrian Non-Fatal/Non-Incapacitating Crashes 2012-2017 (Indianapolis MPO)

Existing Pedestrian Infrastructure Network (Indianapolis MPO)

Lane Widths (Indianapolis MPO)

# Pedestrian Safety

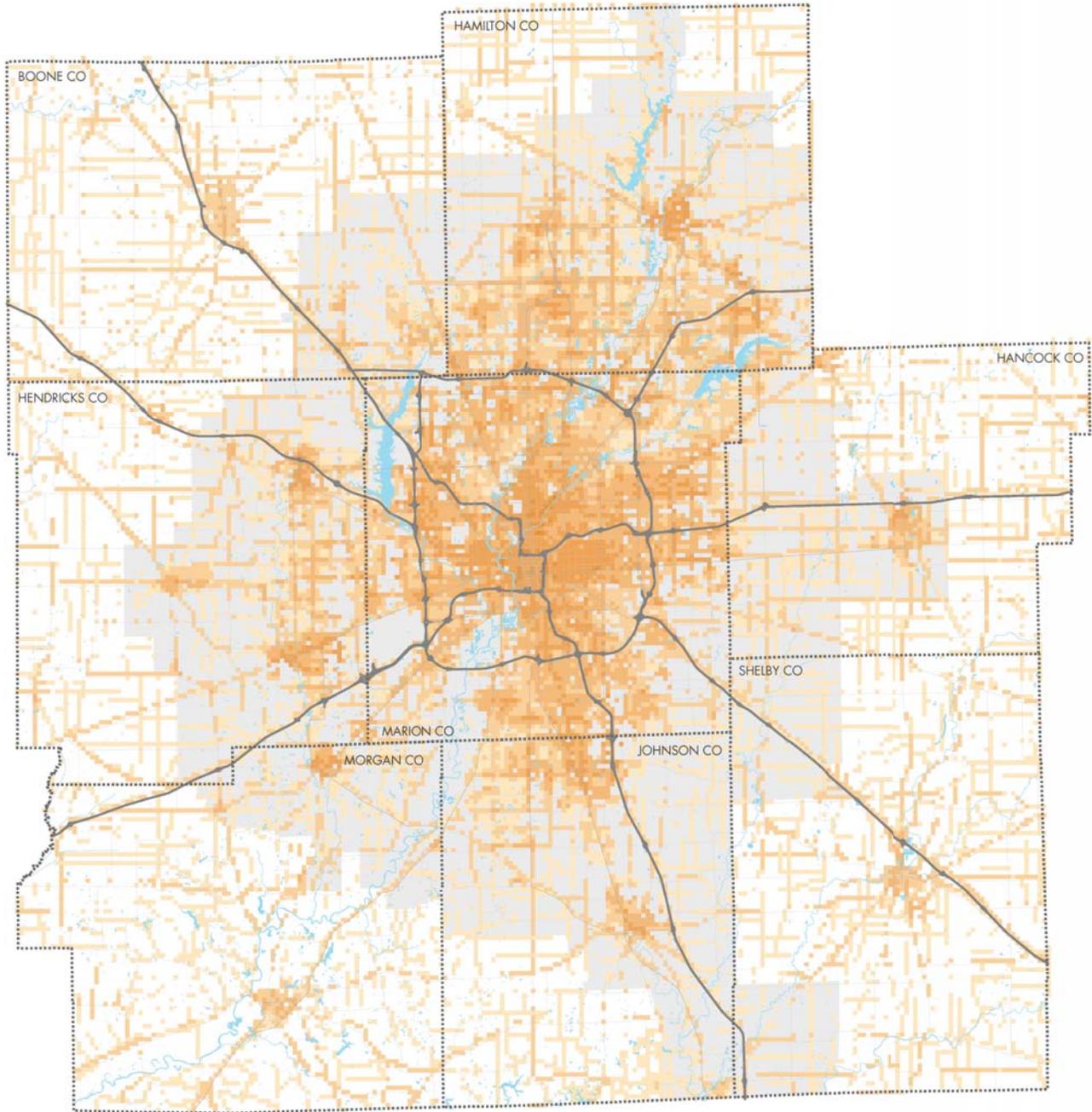


Figure 6-1. | Priority Investment Areas Indices: Pedestrian Safety.



## PRIORITY INVESTMENT AREAS INDICES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways



## PRIORITY INVESTMENT AREAS INDICES: EQUITY

Prioritize projects in areas where people have lower incomes and less access to personal vehicles, where people are more likely to walk where they need to go.

---

Planning for equity means making access to public infrastructure fair and accessible for all, starting with sidewalks. Areas that have greater needs for pedestrian infrastructure include those with higher densities of youth, senior, and minority populations, as well as those with high household poverty levels and zero-car households.

These measures are typically used to determine vulnerable populations or populations at risk. Populations at risk are those who are more likely to experience poor outcomes based on their age, race, poverty status, or other socioeconomic measures. These populations may encounter barriers in transportation and may be more dependent on walking or public transit for the majority of their trips. For example, many people under the age of 18 are too young to drive or may not have access to personal vehicles. Adults over the age of 65 may have health conditions that prevent them from safely operating vehicles. Data shows that minority populations use public transit more than non-minority populations. Those living below the poverty level and zero-car households may not be able to afford personal vehicles. These populations may be more impacted by poor/no sidewalk conditions than other groups.

The following measures of equity were used to help identify areas in Central Indiana that experience poor equity:

- Youth population
- Senior population
- Minority population
- Household poverty levels
- Zero-car households

**Note:** Other determinations of equity, such as densities of disabled populations and low educational attainment, were not included as part of this study due to the lack of available data for the entire 8-county region.

### Mapping Data Sources:

Youth Population (2017 American Community Survey)  
Senior Population (2017 American Community Survey)  
Minority Population (2017 American Community Survey)  
Household Poverty Levels (2017 American Community Survey)  
Zero-Car Households (2017 American Community Survey)

# Equity

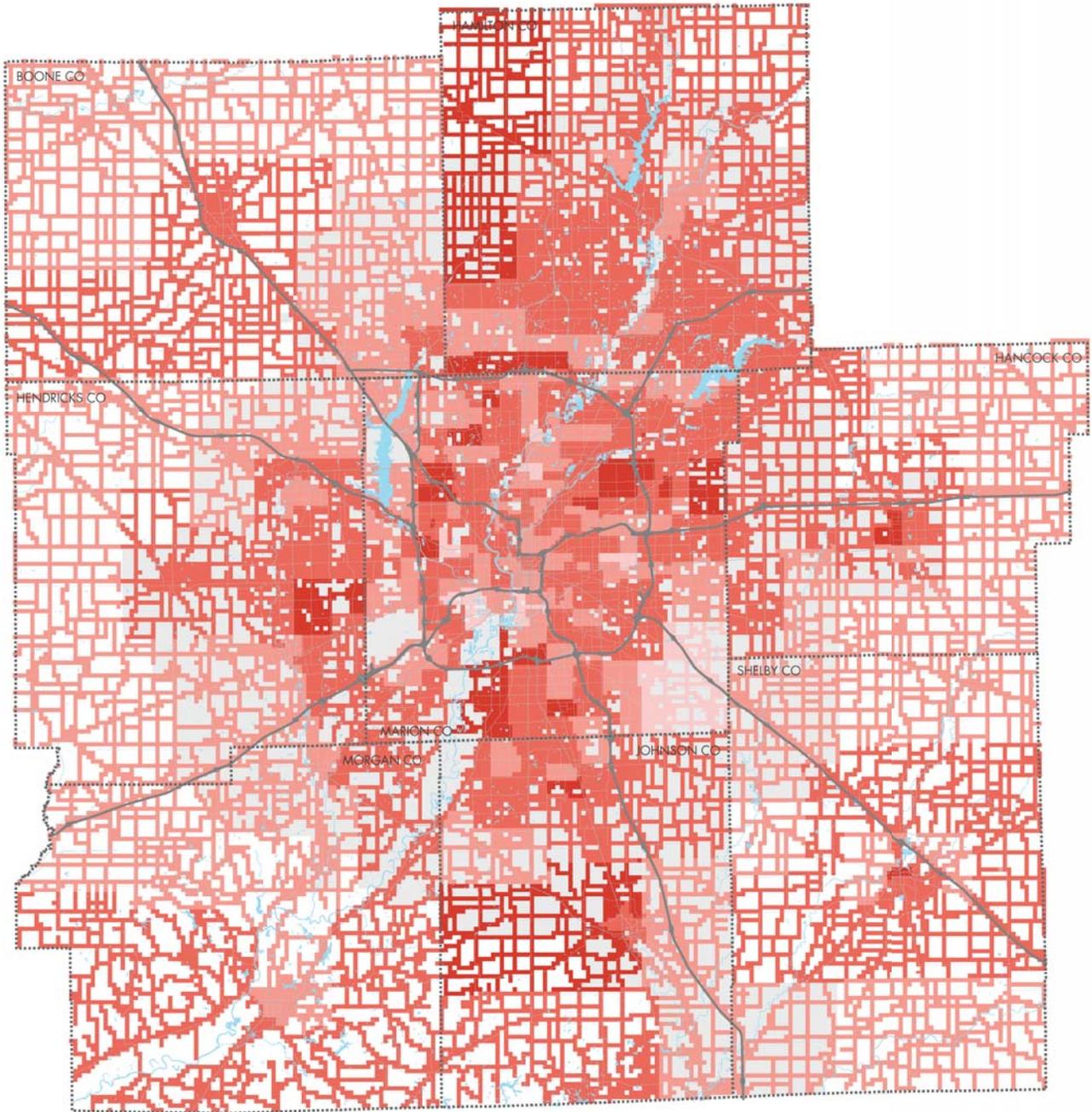


Figure 6-2. Priority Investment Areas Indices: Equity.



## PRIORITY INVESTMENT AREAS INDICES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways



## PRIORITY INVESTMENT AREAS INDICES: WELLNESS

Prioritize investment in areas where the pedestrian environment can negatively impact the wellness of residents.

---

Central Indiana is becoming increasingly focused on improving the wellness of its residents. Partnerships with local health departments, regional hospitals, and community-based organizations provide programming that helps to decrease the risks of chronic disease and cultivate a culture of health. The built environment has a significant impact on individual wellness. Many communities across Central Indiana still lack basic pedestrian infrastructure such as sidewalks and safe crossings, therefore not providing adequate facilities that people can use to improve their wellness. People tend to walk less and drive more in neighborhoods without pedestrian infrastructure. Built factors that contribute to the wellness of residents include lack of access to parks and recreational opportunities, lack of access to healthcare facilities, and density of pedestrian/vehicular collisions. Areas lacking pedestrian access to parks and open spaces contribute to sedentary lifestyles that are associated with higher risk of chronic disease.

The divide between aging senior populations and healthcare services is growing. According to a study done by the Pew Research Center, nearly 20 percent of Americans ages 65 and older are not addressing health needs due to a lack of access to resources. One of the biggest reasons seniors across the nation are facing barriers to healthcare is lack of transportation, including pedestrian access. Due to their circumstances, they are unable to regularly visit their doctors to access preventative care and get medical attention (Stokes, 2014).

Pedestrian/vehicular collisions are a serious health issue, and the pedestrian environment plays an important role in the prevention of pedestrian-related crashes. Pedestrian/vehicular collisions may be caused by motorists' behavior or the spatial and functional characteristics of the pedestrian environment. The following measures of wellness were used to help identify areas in Central Indiana that are experiencing negative health outcomes:

- Lack of access to parks and recreational opportunities
- Lack of access to healthcare facilities
- Number of pedestrian/vehicular collisions (incapacitating injuries and fatalities)

**Note:** Other determinations of wellness, such as rates of obesity, type 2 diabetes, and cardiovascular disease, were not included as part of this study due to the lack of available data for the entire 8-county region.

### Mapping Data Sources:

Parks and Trails 2019 (IDNR)

Hospitals (Indiana MAP)

Pedestrian Fatal/Incapacitating Crashes 2012-2017 (Indianapolis MPO)

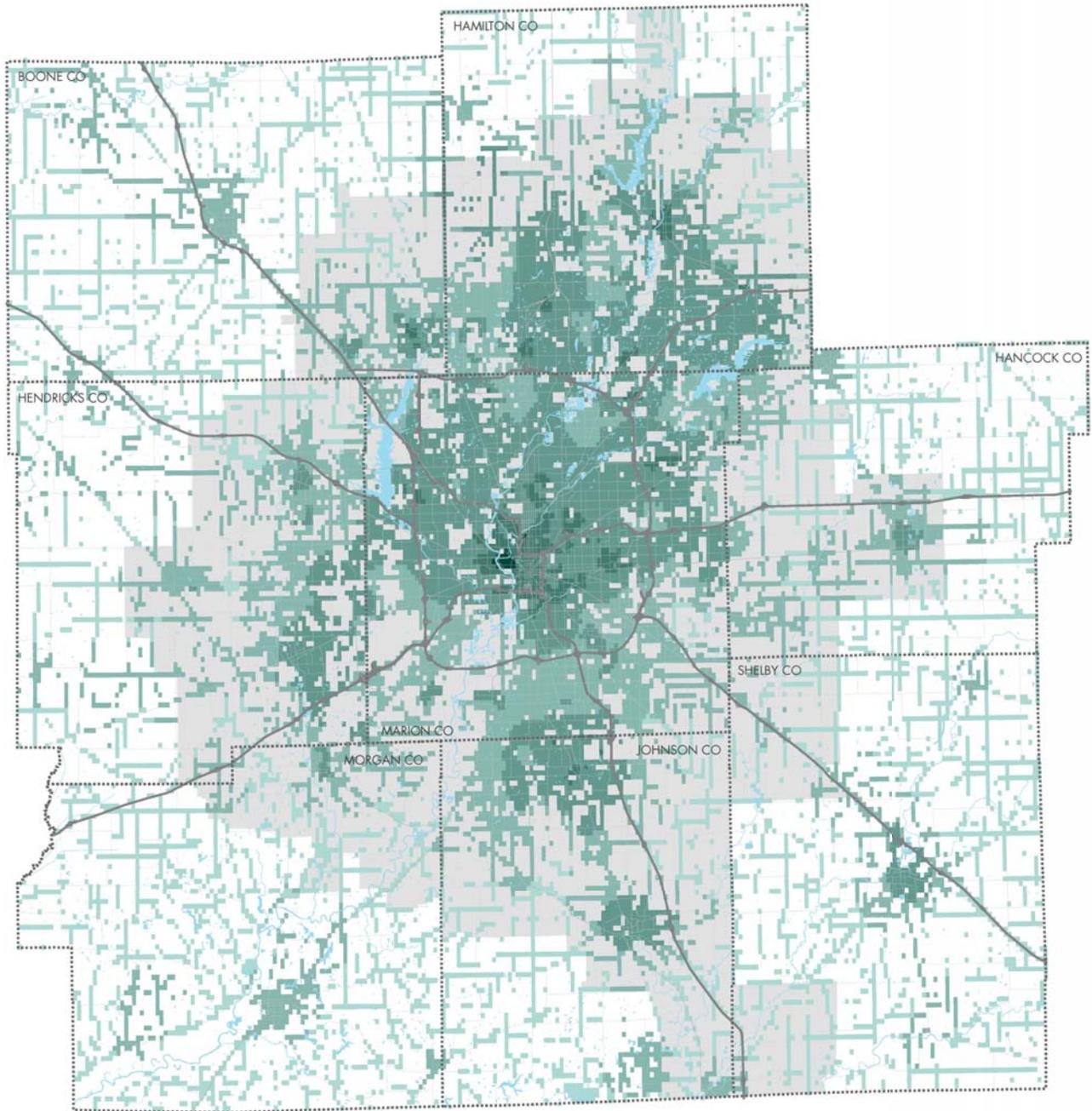


Figure 6-3. Priority Investment Areas Indices: Wellness.



## PRIORITY INVESTMENT AREAS INDICES

### SCALE



### LEGEND

- |  |                                 |  |               |
|--|---------------------------------|--|---------------|
|  | Tier 1 Priority Investment Area |  | Interstates   |
|  | Tier 2 Priority Investment Area |  | Major Streets |
|  | Tier 3 Priority Investment Area |  | County Lines  |
|  | Tier 4 Priority Investment Area |  | Waterbodies   |
|  | Tier 5 Priority Investment Area |  | Waterways     |



## PRIORITY INVESTMENT AREAS INDICES: PEDESTRIAN DEMAND

Prioritize facilities that take people where they want to go (i.e., restaurants, work, school, grocery stores, entertainment).

---

Whether walking to work, school, or to the grocery store, many residents make several walking trips per day. In order to improve the quality of the walking environment in Central Indiana, it is critical that pedestrian demand is measured. Pedestrian demand is the volume of pedestrians on the pedestrian network at any given time. Major drivers of pedestrian demand include population density, employment density, and locations of educational facilities.

Areas with higher population and employment densities tend to have more and a greater variety of destinations for people to reach within a walkable area. Similarly, many students depend on their parents or school buses to get to and from school. At shorter distances, people are more likely to make trips by foot than by car. However, as distance increases, the opposite is true.

The following measures of pedestrian demand were used to help identify areas in Central Indiana that experience high pedestrian demand:

- Population density
- Employment density
- Locations of educational facilities

**Note:** *Other determinations of pedestrian demand, such as public transit ridership and public transit stop locations, were not included as part of this study due to the lack of available data for the entire 8-county region.*

### Mapping Data Sources:

Population Density (2017 American Community Survey)  
Employment Density (Indianapolis MPO)  
Educational Facilities (Indiana MAP)

# Pedestrian Demand

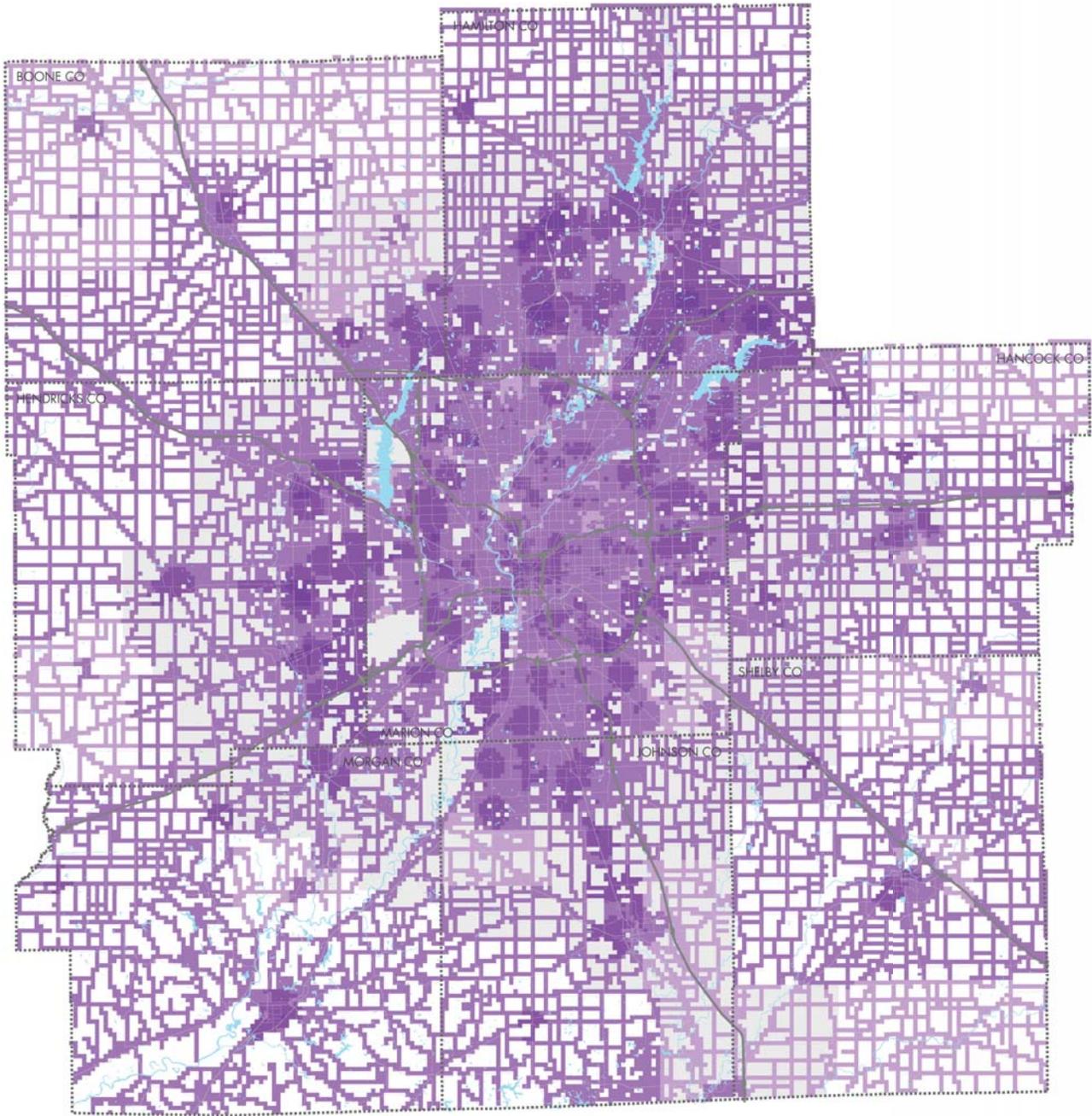


Figure 6-4. Priority Investment Areas Indices: Pedestrian Demand.



## PRIORITY INVESTMENT AREAS INDICES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways



## PRIORITY INVESTMENT AREAS INDICES: WALKING COMFORT

Prioritize facilities that can improve how comfortable a person feels while walking (with consideration for conditions on a street, such as traffic speed, number of cars, and street width).

---

In recent history, streets have been designed for cars, not pedestrians. However, this car-centric approach has led to many negative effects relating to walking comfort. Walking comfort is the level of comfort people feel that the street provides for their physical and mental needs. Perceptions of safety play a key role in the walking comfort of pedestrians. The presence of a sidewalk does not necessarily mean someone will feel comfortable when walking. Street conditions such as high average daily traffic volumes, high traffic speeds, and multiple travel lanes significantly impact how people feel when walking. Other perceptions of walking comfort are influenced by factors such as motorist's behavior, potential for crime, not enough people around, unsafe pedestrian facilities, bicycles, skateboards, or scooters using sidewalks or trails, people walking dogs, and loose dogs or other animals.

The functional classifications of roads were used as the basis for the maps. A functional classification is the category to which a road belongs based on mobility and access functions. There are four main functional classification groups defined by the Federal Highway Administration (FHWA) including interstates, arterials, collectors, and local streets. Arterial and collector roads were examined for the purposes of this study as potential corridors where pedestrian infrastructure may be included. Arterial roads are high-capacity roads that move traffic between collector roads and interstates, while collector roads are low-to-moderate-capacity roads that move traffic between local and arterial roads. Local roads and interstates were not included as part of this study as pedestrians are prohibited on interstates and local roads are inherently low-volume, narrow roads with less chance of pedestrian/vehicular conflicts occurring. The following measures of walking comfort were used to help identify areas in Central Indiana that experience poor walking comfort:

- County annual average daily traffic (AADT)
- Speed limits
- Functional classifications
- Existing pedestrian infrastructure network

**Note: Other determinations of Walking Comfort, such as lane widths, were not included as part of this study to eliminate the double counting of data due to the inclusion of functional classifications.**

### Mapping Data Sources:

County AADT (Annual Average Daily Traffic) 2018 (INDOT)  
Speed Limits (Indianapolis MPO)  
Functional Classification 2018 (INDOT)  
Existing Pedestrian Infrastructure Network (Indianapolis MPO)

# Walking Comfort

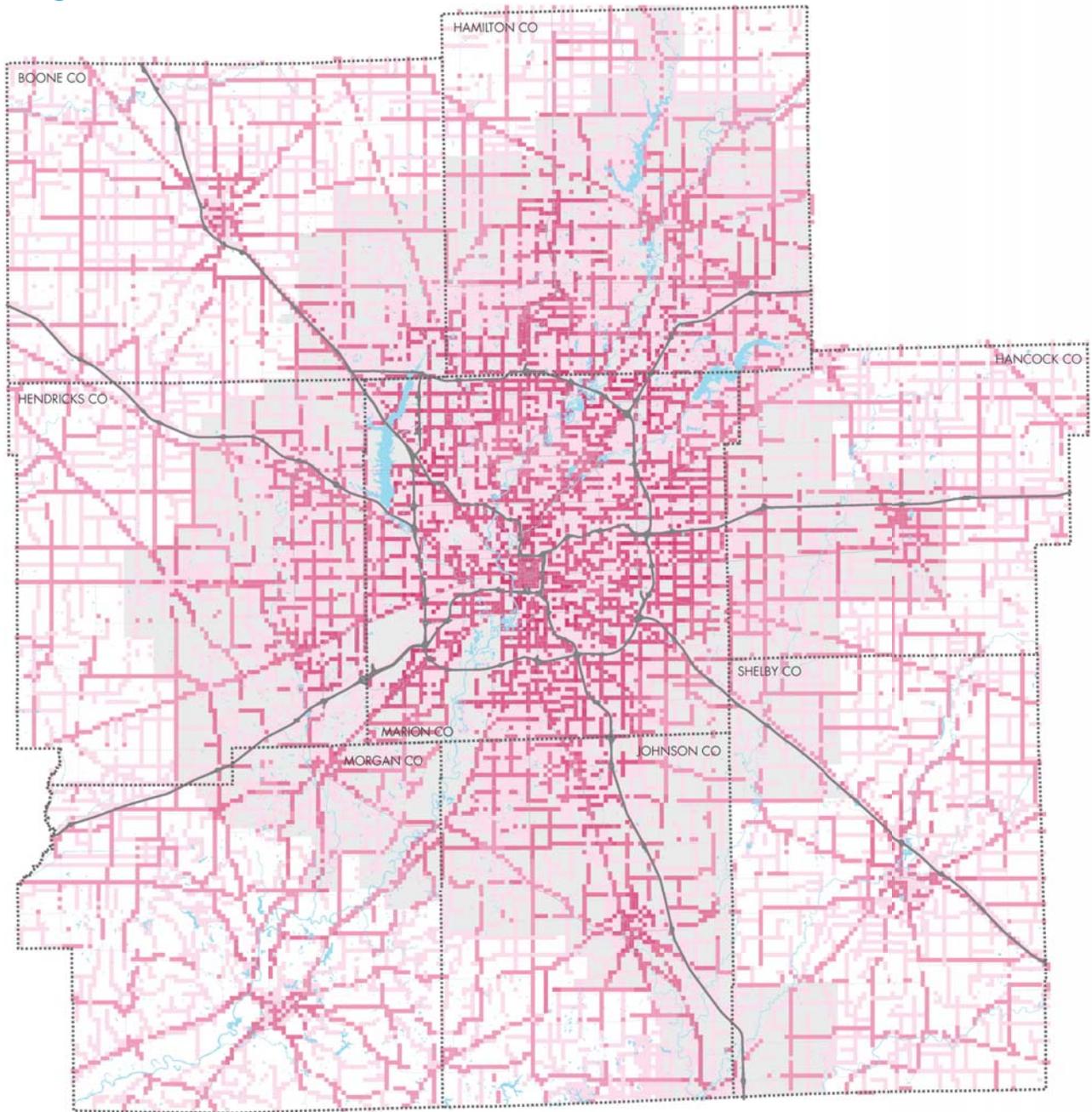


Figure 6-5. Priority Investment Areas Indices: Walking Comfort.



## PRIORITY INVESTMENT AREAS INDICES

<b>SCALE</b>		<b>LEGEND</b>	
		Tier 1 Priority Investment Area	Interstates
		Tier 2 Priority Investment Area	Major Streets
		Tier 3 Priority Investment Area	County Lines
		Tier 4 Priority Investment Area	Waterbodies
		Tier 5 Priority Investment Area	Waterways

## Preliminary Ranking Strategies

Based on previous studies conducted by communities and local organizations throughout the region, as well as prioritization methodologies developed by other cities in the United States, a series of preliminary ranking strategies were developed to help prioritize areas of investment in pedestrian infrastructure in Central Indiana. Using the priority investment area indices including pedestrian safety, equity, wellness, pedestrian demand, and walking comfort, the prioritization process employed a series of preliminary ranking strategies to establish areas of high priority. High priority areas are those that have the greatest need for pedestrian infrastructure, while low priority areas are those that have the least need for pedestrian infrastructure. On the ranking strategies maps, areas of high priority appear as “hot spots.” The more red the color, the higher the priority. For example, the color red indicates Tier 1 high priority investment areas, while the color green indicates Tier 5 low priority investment areas.

Three preliminary ranking strategies were established by the plan, including Public Input Driven, the Marion County WalkWays Plan Priorities, and Planning Best Practices. These strategies were evaluated by the project Steering Committee, who established a fourth preliminary ranking strategy. [Preliminary Ranking Strategies maps can found in Appendix E: Ranking Strategies.](#)

Weights were assigned to each of the priority investment areas indices. Weights are used to indicate the importance of prioritization metrics based on measures defined by the ranking strategy. These weights were normalized to fall on a scale of 1 to 5, with Tier 1 receiving 5 points, Tier 2 receiving 4 points, Tier 3 receiving 3 points, Tier 4 receiving 2 points, and Tier 5 receiving 1 point. No point values were duplicated for any of the indices.



# PRELIMINARY RANKING STRATEGIES





## Preliminary Ranking Strategies



### Public Input Driven

*Set priorities for pedestrian infrastructure investment in Central Indiana based on the results from Public Survey #2.*

One approach to identifying high priority investment areas is using the public input gathered in the Regional Pedestrian Survey #2 commissioned by the Indianapolis MPO. The survey was made available through MetroQuest and remained open between May 1, 2019 and June 21, 2019. A total of 897 people responded to the survey. This information was used to gauge Central Indiana residents' priorities when it comes to pedestrian infrastructure.

Respondents were asked to order their top five areas of interest, including safety, location, equity, health and wellness, and comfort, from most important (ranked first) to least important (ranked fifth). These elements were ranked via star allocation, with five stars being the most important. Weighting is based on the results of this exercise, where prioritization results are as follows:





## Marion County WalkWays Plan Priorities

*Set priorities for pedestrian infrastructure investment in Central Indiana based on rankings in the Marion County Walkways Plan.*

A second approach to identifying high priority investment areas is using the ranking established in the Marion County Walkways Plan. The Marion County WalkWays Plan was created by WalkWays, an initiative to make Indianapolis more walkable and get more people walking. It serves as a comprehensive guide for creating a healthier, more walkable Indianapolis by prioritizing future investments in pedestrian projects for Marion County. This approach allows for the identification of areas that are most in need of walkability improvements using a prioritization process. The prioritization process is rooted in the growing needs for investments in pedestrian infrastructure, which are based on accommodating recent population growth, improving economic mobility for low income populations, attracting and retaining talent, a desire for walkable places, and encouraging physical activity to improve health (WalkWays, 2016).

The prioritization process utilizes quantitative data, city priorities, and qualitative data to recommend allocations for funding and future development. High priority areas were established using quantitative and qualitative screening processes. They were generated by overlaying maps for the six indices: including health, safety, equity, comfort, demand, and city priorities. Based on community feedback and the goals of the plan, health, safety, and equity were determined to be the three most important factors to consider for prioritization. This is reflected in the weighting, where health, safety, and equity receive scores of 3, while comfort receives a score of 2, and demand and city priorities receive scores of 1. Based on this scoring criteria, the map overlay yields a single score which allows for the categorization of three tiers of priority (WalkWays, 2016). The prioritization results are as follows:





## Preliminary Ranking Strategies



### Planning Best Practices

*Set priorities for pedestrian infrastructure investment in Central Indiana based on planning best practices.*

Planning best practices utilizes the principles of urban planning to transform the built environment into pedestrian friendly, walkable communities. The overarching themes of urban planning examine completeness, or connectivity, in connecting preexisting facilities to planned connections. Where new areas of growth (or areas of potential growth) are occurring, the construction of pedestrian facilities should be examined in advance to ensure that growth is not reactionary, but planned. The exploration of local and regional development plans allows for the implementation of pedestrian infrastructure that is conducive to a complete pedestrian network. Pedestrian infrastructure attracts new populations of all ages and abilities, from young professionals to aging senior populations. The existence of pedestrian facilities means providing safe and equitable access for current and future generations. This is tied to the at-risk populations identified in the existing conditions chapter of this plan.

Planning Best Practices was chosen as a ranking strategy to ensure that the prioritization falls under the guidelines of the regional umbrella. It's based on this Regional Pedestrian Plan's vision, goals and objectives, where safety is perceived as being the most important factor in the pedestrian walking experience.

The weighting below mirrors the desire for a safer, healthier environment for pedestrians, aimed at transforming existing infrastructure into a corridor that is safe and useable by everyone.





## Steering Committee Input

*Set priorities for pedestrian infrastructure investment in Central Indiana based on input from the steering committee.*

Priority Investment Areas indices and ranking strategies were introduced at Steering Committee Meeting #3. During this meeting, members were asked to evaluate the three ranking strategies and create their own ranking strategies for prioritization using the priority investment area indices. Members completed the exercise individually, followed by a group discussion on how they selected the indices of greatest importance. Based on feedback from this exercise, the ratings for each of the five indices were averaged to establish a ranking system based on Steering Committee feedback. Based on this exercise, the prioritization results are as follows:





## COMPOSITE RANKING STRATEGY: WHAT DOES THIS MEAN?

While many areas throughout Central Indiana are in need of pedestrian infrastructure improvements, it is not possible to improve every area at once. In order to focus funds on high priority areas, a fifth, composite ranking strategy based on preliminary ranking strategies was created to guide community decision makers in setting priorities for sidewalk projects.

In order to establish a composite ranking strategy, steering committee members were asked to evaluate preliminary ranking strategies. Specifically, measures of priority investment area indices were assessed for their level of appropriateness in determining high priority areas. Project steering committee members suggested additional measures of equity and walking comfort. Additional measures of equity include household poverty levels and zero-car households, while additional measures of walking comfort include speed limits and functional classifications. These elements were used to refine preliminary mapping efforts. An additional ranking strategy, steering committee input, was created based on steering committee feedback. Point values for preliminary ranking strategies indices were averaged to generate weighting, where equal importance was placed on each approach to ensure impartiality.

In order to help Central Indiana make the most out of existing and future transportation funds, the final composite ranking strategy provides communities with a map of gaps in the pedestrian network weighted and categorized into tiers to indicate priority. The final composite ranking strategy sets plans in motion for future development. Putting emphasis on high priority areas for pedestrian investment ensures that pedestrian safety, equity, wellness, pedestrian demand, and walking comfort are addressed immediately to support future connections in the region. Based on this exercise, the prioritization results are as follows:



# Composite Ranking Strategy

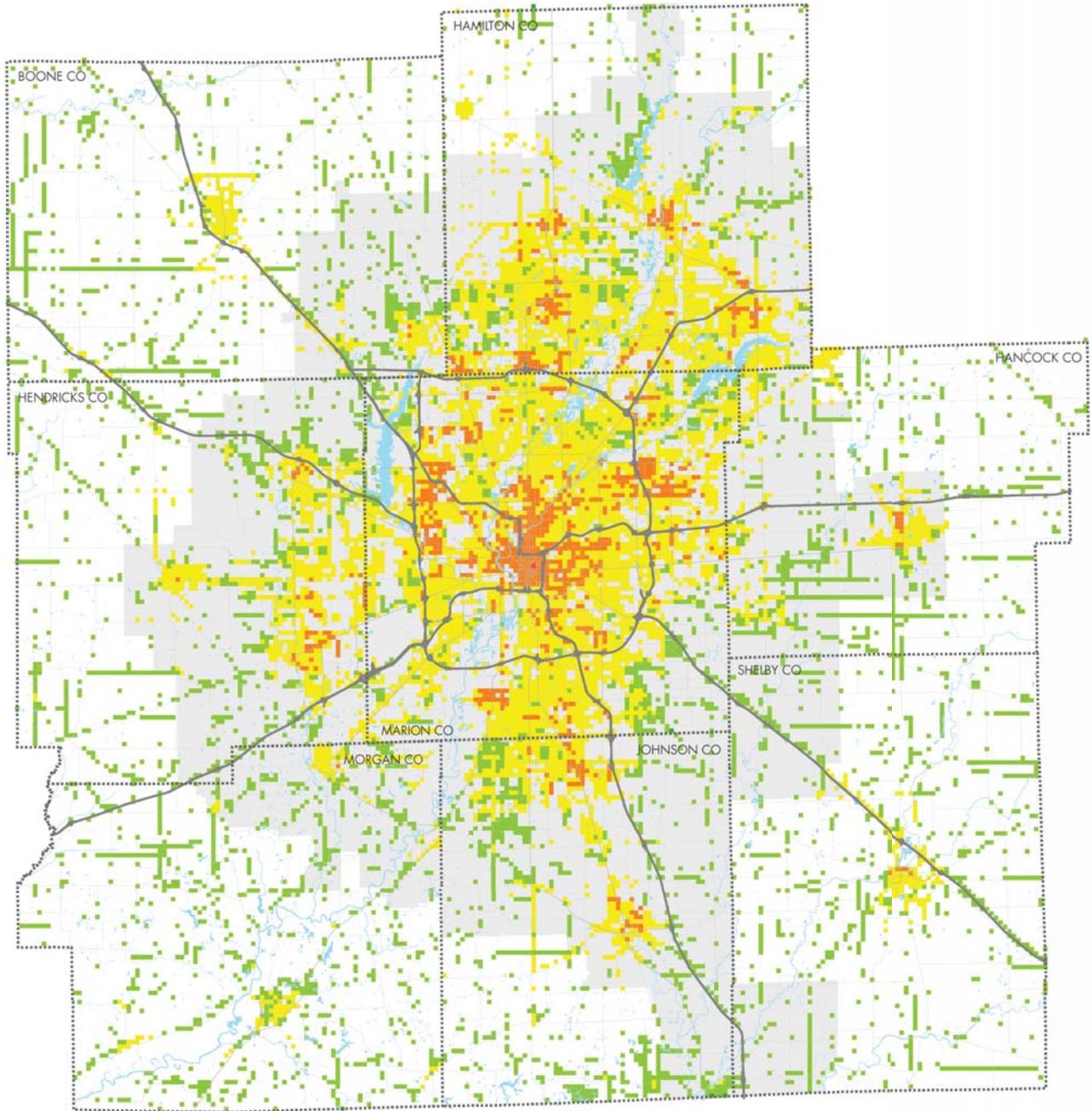


Figure 6-6. Priority Investment Areas Rank: Composite Ranking Strategy.



## PRIORITY INVESTMENT AREAS RANK

### SCALE



### LEGEND

- |   |               |
|---|---------------|
| <span style="color: red;">■</span> Tier 1 Priority Investment Area        | Interstates   |
| <span style="color: orange;">■</span> Tier 2 Priority Investment Area     | Major Streets |
| <span style="color: yellow;">■</span> Tier 3 Priority Investment Area     | County Lines  |
| <span style="color: lightgreen;">■</span> Tier 4 Priority Investment Area | Waterbodies   |
| <span style="color: green;">■</span> Tier 5 Priority Investment Area      | Waterways     |

# 7 IMPLEMENTATION





## IMPLEMENTATION

Establishing priority investment areas is the first step in effecting change in the physical design of the built environment. In order to embed walking into our regional transportation network, we must examine potential projects within priority investment areas to determine specific needs.

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### Why should we invest in pedestrian infrastructure projects?

Sidewalks and pathways provide numerous benefits to residents in Central Indiana, including increased safety, connectivity, mobility, and wellness. Providing quality pedestrian infrastructure in the region increases the viability for walking for all residents. There are many reasons we should invest in pedestrian infrastructure projects:

- Connect our Communities
- Provide Safe Access to All Users, Including Pedestrians
- Encourage Physically Active Transportation to Improve Wellness
- Increase Transportation Opportunities in Underserved Communities
- Reduce Motorized Trips
- Spur Economic Development

Providing access to destinations in our communities gives confidence to current and future generations of Central Indiana residents who want to use active transportation to connect to employment and educational opportunities. The next step is to compile maps of priority sidewalk projects at the regional and county levels to determine which projects should be completed first.

### How were the projects identified?

Based on the priority investment areas identified in the composite ranking strategy map and the existing pedestrian network, maps of potential pedestrian projects were created at the regional and county levels. Gap segments represent missing infrastructure in the existing pedestrian network within the MPA and are the focus of this plan. These segments were examined at a high level of transportation planning and should be used as a flexible framework for implementation. More detailed analysis will be required to determine specific site conditions and to develop a design that responds to the regional transportation network in an appropriate manner.

Based on the composite ranking strategy that organized pedestrian projects into five tiers of priority, the existing pedestrian network was cross-referenced and categorized to determine where gaps fell in the tier system. Since no gap segments intersected with Tier 1 and Tier 5 priority areas in the composite ranking strategy map, there are no Tier 1 or Tier 5 priority projects.



# Why should we invest in pedestrian infrastructure projects?



## Connect to our Communities

Sidewalks not only connect us to high demand destinations such as employment centers, educational facilities, public transit, medical services, grocery stores, and entertainment; they also connect us to other communities. A regional sidewalk network fosters a culture of safety and health and increases mobility for all, provides opportunities for placemaking, and establishes vital connections between communities and people.



## Provide Safe Access to All Users, Including Pedestrians

In the past, transportation planning has largely focused on the vehicle rather than the pedestrian. The prioritization of roads over sidewalks is largely apparent in the design of our streets, the significant gaps that exist in the sidewalk network, and the state of our aging pedestrian facilities. It is paramount to make safety a top priority for all transportation options, including walking. The way in which decision makers in Central Indiana dedicate funding to and maintain our transportation corridors will help measure our success in making safety a priority.



## Encourage Physically Active Transportation to Improve Wellness

While people walk for many reasons, walking for health is one of the best things one can do improve overall wellbeing. Walking is the most common form of physical activity and can be done by people of all ages and abilities. Walking has numerous health benefits, from increasing physical fitness and stamina, improving mood, and fostering creative thinking, to decreasing the risk for developing chronic diseases such as heart disease, type 2 diabetes, and certain cancers (Harvard University, 2018).

It is imperative that communities in Central Indiana work to enhance pedestrian infrastructure to encourage physical activity and improve health. By examining distances to high demand destinations and prioritizing areas with the most need, community decision makers can help create a reliable pedestrian network that fosters the next generation of active transportation users.



## Increase Transportation Opportunities in Underserved Communities

Underserved populations across Central Indiana lack safe, convenient routes for walking. These areas are home to low-income, minority, and senior populations. Residents may have inadequate transportation options and experience limited employment opportunities, poor school attendance, lack of access to healthcare facilities, and many other negative effects.



## Reduce Motorized Trips

Walking is one way to improve the performance of our transportation system and reduce motorized trips. Motorized transportation increases the amount of pollutants and noise released into the environment. By providing space for pedestrian facilities and offering people a safe/healthy alternative to driving, people can be encouraged to walk. In order to reduce motorized trips, Central Indiana must invest in building and maintaining walkable spaces in our communities so that people have an option to choose walking over driving.



## Spur Economic Development

Walking habits help spur economic development. As walkability (the ease of walking to and from a destination without needing a car) increases, so does business attraction and retainment. Well-maintained or present sidewalks can improve the attractiveness and perception of commercial or multi-use centers. The presence and maintenance of sidewalks is a vital element in improving walkable centers. Providing quality pedestrian infrastructure that encourages people to walk rather than drive is one way to improve walkability.

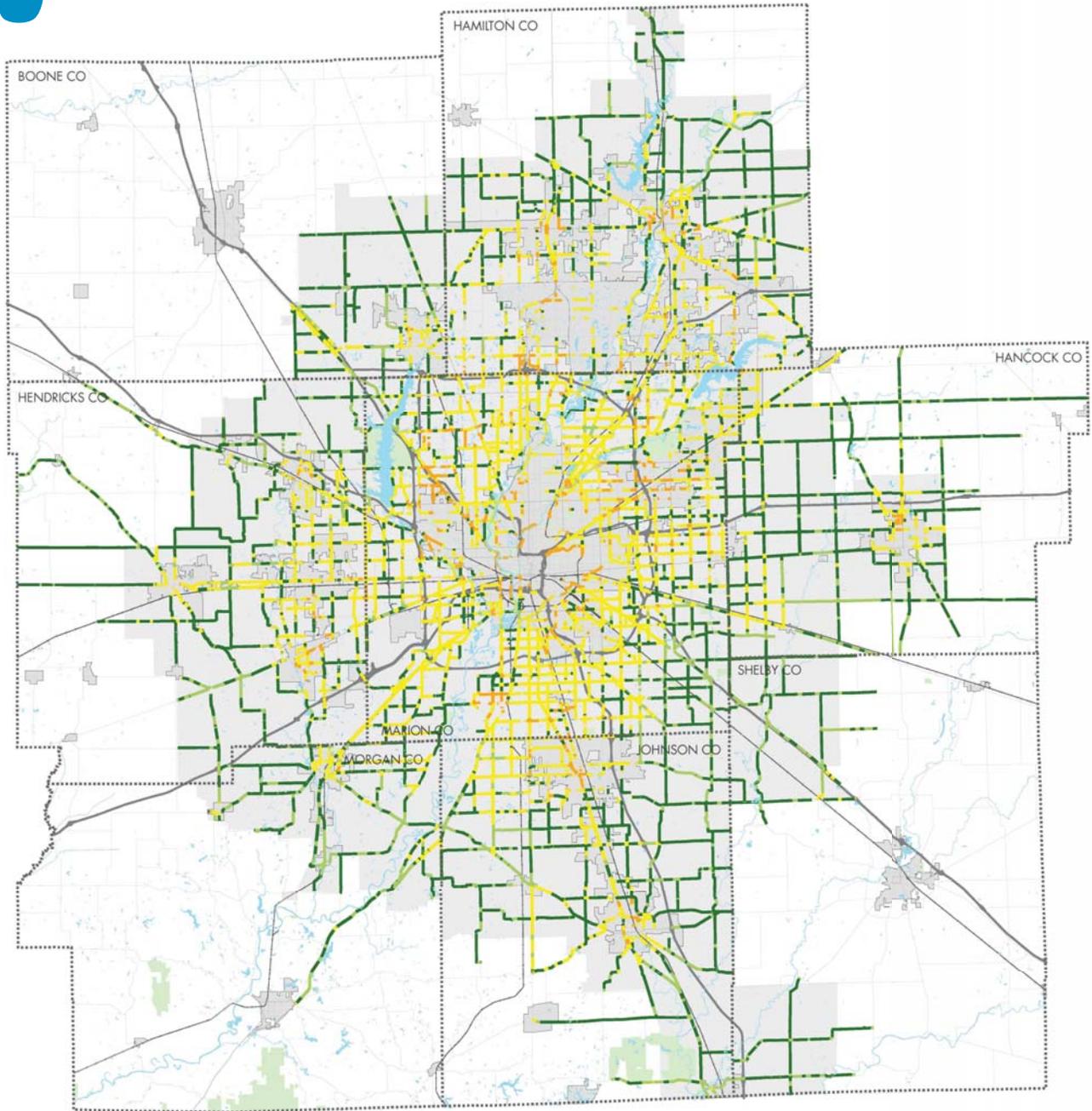


Figure 7-1. Priority Pedestrian Infrastructure Improvement Projects: Central Indiana.



### PRIORITY IMPROVEMENT PROJECTS

<b>SCALE</b>		<b>LEGEND</b>	
		<ul style="list-style-type: none"> <li><span style="color: red;">■</span> Tier 1 Priority Project</li> <li><span style="color: orange;">■</span> Tier 2 Priority Project</li> <li><span style="color: yellow;">■</span> Tier 3 Priority Project</li> <li><span style="color: lightgreen;">■</span> Tier 4 Priority Project</li> <li><span style="color: darkgreen;">■</span> Tier 5 Priority Project</li> <li><span style="color: black;">■</span> Not Tiered Priority Project</li> </ul>	<ul style="list-style-type: none"> <li> Interstates</li> <li> Major Streets</li> <li> County Lines</li> <li> Waterbodies</li> <li> MPA</li> </ul>



## Where to get started

Many communities in Central Indiana are well situated to play growing roles in the regional transportation network. The strategies and actions recommended in this section are intended to provide communities with guidance on prioritizing investment in pedestrian facilities.

Many suburban communities in Central Indiana don't fit traditional sidewalk models which use rectangular street grids and networks used in studies of pedestrian readiness. Exploring the unique role of suburban neighborhood streets in our pedestrian network, strategic placement of connections between neighborhoods and commercial centers, and city-wide studies of our most needed missing walkways can help with these challenges.

## Case Studies

Historically, many suburban developments weren't required to have sidewalks or street connectivity between phases or developments, and were therefore designed to be very insular, sometimes with only one external access point. Alternatives to traditional sidewalk investments are being examined in communities across the country. These alternatives are retrofitting old streets (whether urban or suburban) with sidewalks to increase pedestrian connectivity.

The following case studies examine pedestrian infrastructure at the local level. They offer alternative, low-cost solutions for closing gaps in the pedestrian network, particularly in conditions where funding and space may be limited.

## CASE STUDY: SIDEWALK EASEMENTS

Figure 7-2.

Interconnectivity is necessary to achieve a continuous regional transportation system.

Interconnectivity between pedestrian facilities such as sidewalks, trails, and greenways is necessary to achieve a continuous regional transportation system. In many cases, these facilities cross through both public and private lands. Easements give people the right to use, cross, or enter someone else's property for a specific purpose without possessing it. Without easements, these connections wouldn't be possible.

Sidewalk easements are signed by the property owner (the grantor) and the organization that holds the easement (the grantee) and are perpetual, even if the property owner decides to sell the property (Essex County Trail Association, 2019).

Sidewalk easements are purchased by the city from the owner or given by the owner to the city. Property owners who grant easements play an important role in increasing regional connectivity and walkability.

Traverse City, MI is preparing for the addition of five miles of sidewalks and trails around ten of their schools next year. The addition is part of a Safe Routes to Schools (SR2S) program that was announced in November 2019. Through a data-driven process, they identified roads that needed sidewalks (Milligan, 2019).

One of the biggest challenges city officials faced in planning for sidewalk facilities was easements. Right-of-way easements are required to construct sidewalks on private land. In order to obtain easements for their new sidewalk facilities, the city had to negotiate with private property owners where sidewalks may cross driveways or yards or require navigation around public utilities or tree removal. Property owners were invited to public engagement opportunities to ask questions and provide input on the proposed sidewalk facilities. The city took their feedback into consideration when planning and designing pedestrian infrastructure (Milligan, 2019).



## CASE STUDY: SEATTLE, WA Figures 7-3 - 7-4.

Alternative sidewalk configurations include stamped asphalt and curb stops (Seattle Department of Transportation).

In Seattle, WA, the Seattle Department of Transportation (SDOT) is looking at alternative sidewalk considerations to cut down on construction costs and extend the pedestrian network. As a growing city, Seattle faces many of the same challenges as Central Indiana, including funding gaps and demands for integrated, multi-modal transportation opportunities. Residents want a reliable pedestrian transportation network where they can drive less and walk more (Seattle Department of Transportation, 2015).

In 2015, the City of Seattle approved “Move Seattle,” a 10-year strategic vision for transportation. The document is organized around three key elements, including organizing daily work around core values of a safe, interconnected, vibrant, affordable, and innovative Seattle, integrating multi-modal plans to deliver transformational projects, and prioritizing projects and work to identify funding opportunities.

The city is committed to improving pedestrian safety and comfort by repairing, replacing, and installing sidewalks that connect neighborhoods and improve mobility for all users (Seattle Department of Transportation, 2015).

Among the projects outlined in the plan, the city is planning on making communities outside of downtown more accessible by using alternatives to traditional sidewalk installations (Kaufman, 2015). According to Gordon Padleford, neighborhood support coordinator for Seattle Neighborhood Greenways, traditional sidewalks in Seattle cost approximately \$300,000 per block. Some of these costs are due to topographic conditions, stormwater requirements, labor regulations and overengineering. Alternative sidewalk configurations can cut down on some of these costs.



Stamped Asphalt ▲

Stamped asphalt is a cost-effective alternative to concrete. Asphalt is more flexible, durable, and less slippery than concrete. It requires a less expensive foundation than concrete because it is less likely to crack under movement, and takes less time for workers to lay. It's easy to clean and repair and maintains a smooth surface without joints. Asphalt can be colored and stamped to look like other materials with little additional cost (Sedon, 2019).



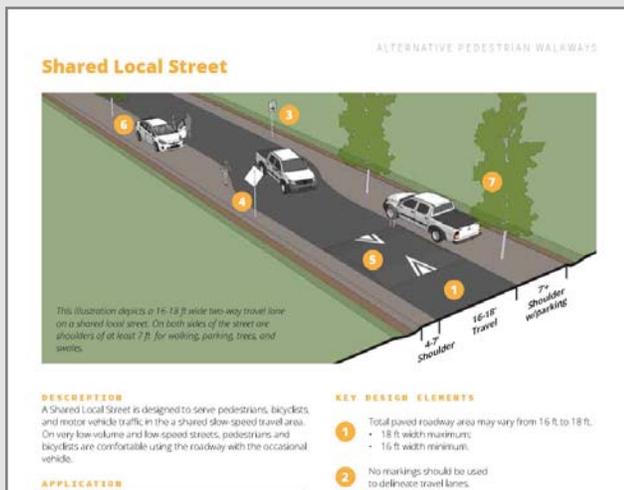
Curb Stops ▲

Another alternative to traditional sidewalk materials are curb stops, which are placed in the street to create a pedestrian-only lane and provide walking space. These low-lying barriers are not only a quick way to add protected space for pedestrians; they also narrow travel lanes and encourage drivers to slow down (City of Seattle, 2016).

## CASE STUDY: PORTLAND, OR

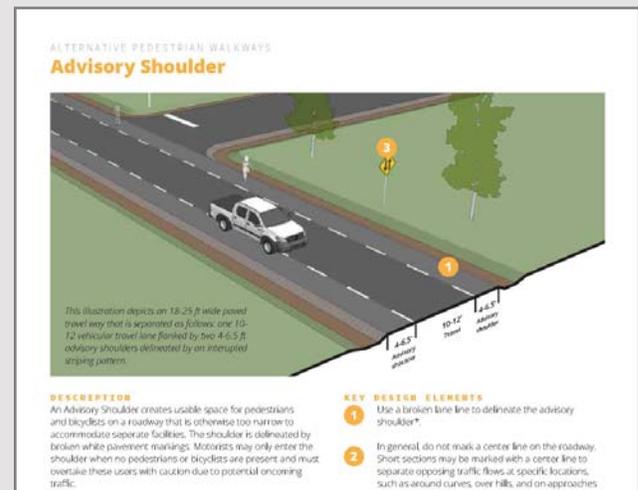
More than 350 miles of city streets are missing sidewalks in Portland, OR. Pedestrian demand is on the rise, and the city is working to make neighborhoods without pedestrian infrastructure safer and more walkable for residents. Roads lacking basic traffic calming measures such as bulb-outs, median islands, on-street parking, or speed tables pose serious safety risks for pedestrians. While they didn't have enough funding to put sidewalks everywhere, the city offered to install facilities known as alternative pedestrian walkways as temporary solutions to the walkability problem (Balick, 2019).

According to the Portland Bureau of Transportation, alternative pedestrian walkways are shared-use paths that are physically separated from the street with plastic posts, and painted to indicate pedestrian right-of-way. While they don't replace the need for permanent sidewalk infrastructure, these walkways protect the streets most vulnerable users where sidewalks are too expensive to build. Components of alternative pedestrian walkways may include speed bumps, truncated domes at side streets, raised concrete traffic separators, and a wide permeable asphalt walking path (Maus, 2019).



### Shared Local Street

Shared local streets are multi-modal transportation corridors with 4 to 7-foot-wide shoulders serving bicycle and pedestrian traffic on low-volume, low-speed streets. Signs indicate the presence of a shared local street, but no markings are used to delineate travel lanes. On-street or off-street parking (in unpaved shoulder areas) may be included, and in some conditions, trees may be used to visually narrow the road and increase user awareness (Portland Bureau of Transportation, 2018).

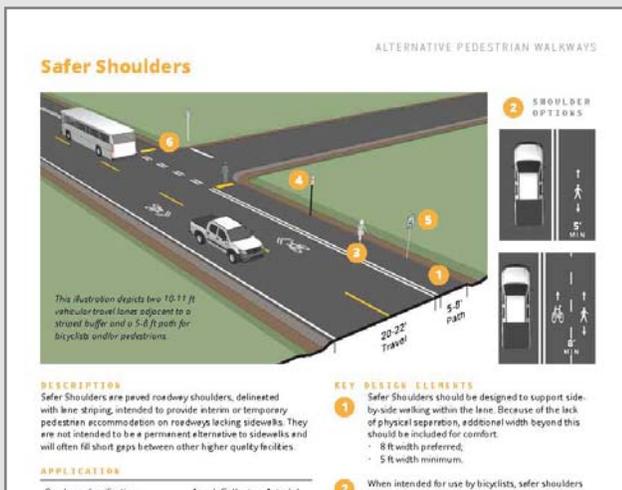


### Advisory Shoulder

Advisory shoulders are 4 to 6.5-foot-wide paved shoulders for pedestrians or bicyclists along a roadway delineated by broken, white pavement markings. These areas may only be entered by motorists when unoccupied by pedestrians or bicyclists. Advisory shoulders may be enhanced with colored asphalt or other types of pavement to increase visibility (Portland Bureau of Transportation, 2018).

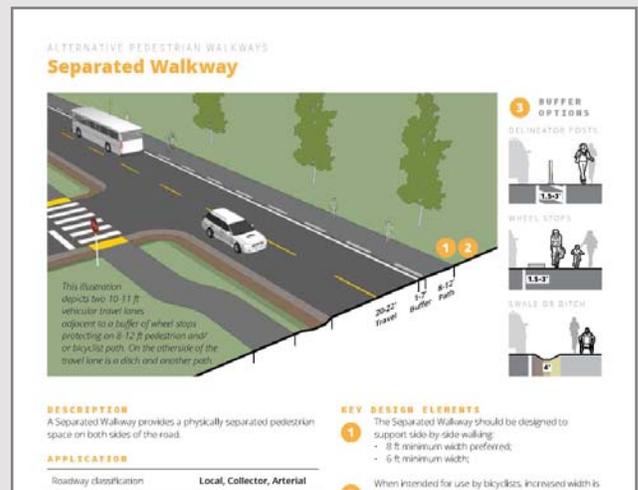
Figures 7-5 - 7-9.

Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways (Portland Bureau of Transportation).



### Safer Shoulders

Safer shoulders are 5 to 8-foot-wide paved shoulders for pedestrians, or 8 to 10-foot-wide paved shoulders for pedestrians and bicyclists, along a roadway delineated by lane striping. These areas are intended to provide a temporary solution for corridors lacking sidewalks. Detectable warnings should be considered at intersections to alert pedestrians that they are about to cross the road (Portland Bureau of Transportation, 2018).



### Separated Walkways

Separated walkways are protected spaces for pedestrians and bicyclists on or away from the roadway. When designed for pedestrians, these facilities should be 6 to 8-foot-wide and include a buffer. 1 to 3-foot-wide buffer options include elements such as delineator posts and wheel stops. 4 to 7-foot-wide buffer options include elements such as swales or ditches (Portland Bureau of Transportation, 2018).



## Pedestrian Safety Measures

As part of the pedestrian planning process, a collection of pedestrian safety measures has been provided to guide the design and construction of pedestrian facilities and make Central Indiana a safer, more comfortable place to walk. Pedestrian safety recommendations, or countermeasures, are designed with pedestrians in mind. They can foster increased pedestrian safety in the built environment by integrating pedestrians at the start of the sidewalk planning and development process. These recommendations should be considered and implemented in the design and redesign of roadways, intersections, and pedestrian crossing projects throughout the region to ensure the safety and comfort of all users. Pedestrian Safety Measures can be divided into the following categories:

### Along the Roadway

- Multi-Use Paths (Fig. 7-10)
- Paved Shoulders (Fig. 7-11)
- Sidewalks (Fig. 7-12)
- Pedestrian Amenities (Fig. 7-13)

### Across the Roadway

- Accessible Curb Ramps (Fig. 7-14)
- Automated Pedestrian Detection (Fig. 7-15)
- Pedestrian Signalization (Fig. 7-16)
- Crossing Islands (Fig. 7-17)
- Curb Extensions (Fig. 7-18)
- Raised Pedestrian Crosswalks (Fig. 7-19)
- Marked Crosswalks (Fig. 7-20)
- Pedestrian Overpasses/Underpasses (Fig. 7-21)
- Advance Stop/Yield Lines (Fig. 7-22)
- Road Diet (Fig. 7-23)
- High-Intensity Activated Crosswalk Beacon (HAWK) (Fig. 7-24)
- Rectangular Rapid Flash Beacon (RRFB) (Fig. 7-25)



# Pedestrian Safety Measures

## ALONG THE ROADWAY



### Multi-Use Paths

Multi-use paths, or shared-use paths, are wide, paved facilities that support non-motorized users such as pedestrians, cyclists, and skaters. These paths are located along or away from the roadway and may be found in transitional areas between residential, commercial, and rural uses. They connect our communities and serve as regional recreation destinations (FHWA, 2013).

Figure 7-10.



### Paved Shoulders

Paved shoulders are emergency stopping lanes for motorists. Shoulders are not intended for use by through traffic, and may be used by pedestrian and cyclists in rural areas without sidewalks or multi-use paths (FHWA, 2013). They should only be considered in conditions where there is no room for other types of pedestrian facilities. In rural areas, extra-wide shoulders separated from traffic with rumble strips may be appropriate. They may also be enhanced with colored or textured pavement to increase visibility.

Figure 7-11.



### Sidewalks

Sidewalks are exclusive, paved facilities for people to walk, run, and play away from motorized vehicles. They are the fundamental building blocks of the regional pedestrian system and provide access to high demand destinations such as employment centers, educational facilities, public transit, medical services, grocery stores, entertainment, and for exercise. Sidewalks may be located on one or both sides of the street and are commonly located in residential and commercial areas. Sidewalks offer safety and walking comfort for pedestrians in the regional transportation network (FHWA, 2013).

Figure 7-12.



### Pedestrian Amenities

Well-designed pedestrian environments may include pedestrian amenities such as benches, street trees, lighting, trash receptacles, and bus shelters to increase pedestrian comfort. Pedestrian amenities not only provide a place for pedestrians to stop, rest, and interact with others; they can also serve as protective barriers between the sidewalk and the street. Areas with pedestrian amenities should be maintained to prevent collection of debris, overgrowth, and potential tripping hazards to protect pedestrian mobility (FHWA, 2013).

Figure 7-13.



## Pedestrian Safety Measures

### ACROSS THE ROADWAY



Figure 7-14.

#### Accessible Curb Ramps

Accessible curb ramps provide access from the roadway to the sidewalk for people with mobility limitations using assistive devices such as wheelchairs, walkers, or canes to move as a pedestrian, or those with visual or cognitive impairments. According to federal legislation, curb ramps must be installed at all intersections and midblock locations where pedestrians are crossing. Detectable warnings should be provided at the edge of the ramp to alert pedestrians they are about to cross the street (FHWA, 2013).



Figure 7-15.

#### Automated Pedestrian Detection

Automated pedestrian detection devices are able to detect when a pedestrian is waiting at a crosswalk and send a signal to the system to switch to the "WALK" phase. Using the "DON'T WALK" signal, the devices are able to cut down on pedestrians crossing the road at inappropriate times. Automated pedestrian detection devices are beneficial in situations where pedestrians don't push buttons to cross the street, or where visually impaired pedestrians may not know there is a button to push. They provide convenient crossing indications and give pedestrians enough time to safely cross the street (FHWA, 2013).



Figure 7-16.

#### Pedestrian Signalization

Where pedestrian volumes warrant them, pedestrian signals should be installed at controlled intersections to provide gaps in traffic flow and allow pedestrians enough time to safely cross the street. To encourage crossing compliance, signal timing should be convenient and favor the pedestrian. Crossing signals should be useable by pedestrians of all ages and abilities and provide both visual and audible cues (FHWA, 2013).



Figure 7-17.

#### Crossing Islands

Crossing islands are protected refuge areas in medians that help pedestrians cross multi-lane roads. They increase walkability by allowing pedestrians to focus on one direction of traffic at a time. They reduce the amount of time pedestrians are exposed to vehicular traffic and provide adequate space to cross the road. They are appropriate at signalized and unsignalized intersections and mid-block crossings and increase pedestrian safety. Crossing islands should be paired with marked crosswalks to increase visibility and slow traffic (FHWA, 2013).



Figure 7-18.

## Curb Extensions

Curb extensions, otherwise known as bump-outs, reduce the width of the street by extending the sidewalk and curb out past the parking lane. By narrowing the roadway both visually and physically, curb extensions decrease the distance and amount of time spent crossing the street. Narrow street widths send a signal to motorists to slow down and pay attention, reducing the potential for pedestrian/vehicular conflicts. Curb extensions provide additional space for accessible curb ramps and encourage pedestrians to cross at the marked crosswalk (FHWA, 2013).



Figure 7-19.

## Raised Pedestrian Crosswalks

Raised pedestrian crosswalks extend the sidewalk across the road and bring vehicles to the pedestrian level. They have a trapezoid-shaped cross-section and improve accessibility by keeping the crossing at a constant grade without the need for curb ramps. They improve pedestrian safety by slowing traffic speeds, increasing yielding compliance, and enhancing the walking environment. Raised pedestrian crosswalks should be considered at mid-block crossings or intersections on local and collector roads with two or three lanes in order to increase pedestrian visibility (FHWA, 2013).



Figure 7-20.

## Marked Crosswalks

Marked crosswalks designate a pedestrian crossing location on the roadway. They are desirable at natural, high volume locations where pedestrians are likely to cross. Marked crosswalks should be conveniently placed to encourage pedestrian use and should be used in conjunction with other traffic calming measures to increase motorist's awareness of pedestrians. Crosswalks should be marked with high-visibility patterns such as solid, standard, continental, dashed, zebra, and ladder to encourage vehicular yielding and increase pedestrian safety (FHWA, 2013).

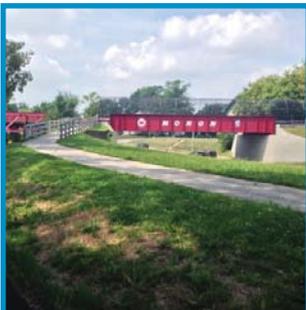


Figure 7-21.

## Pedestrian Overpasses/Underpasses

Pedestrian overpasses/underpasses eliminate the potential for pedestrian/vehicular interactions by vertically separating pedestrian movements from vehicular traffic. To provide safe, comfortable access for people of all ages and abilities, pedestrian overpasses should be used when the topography allows for the construction of a structure without ramps, while pedestrian underpasses should be used when they are wide, open, and well-lit. Pedestrian overpasses/underpasses should only be constructed when traffic speeds and volumes are too high or the roadway is too wide to safely cross (FHWA, 2013).



## Pedestrian Safety Measures

### ACROSS THE ROADWAY



Figure 7-22.

#### Advance Stop/Yield Lines

Advance stop/yield lines often include the stop bar or “sharks’ teeth” triangle patterns and are placed 20-50 feet in advance of a marked crosswalk to alert motorists of a pedestrian crossing. Motorists are required to stop or yield in compliance with signage. Advance stop/yield lines can greatly reduce the threat of pedestrian/vehicular conflicts by discouraging drivers from stopping too close to a crosswalk and increasing pedestrian visibility (FHWA, 2013).



Figure 7-23.

#### Road Diet

Road diets, also known as lane reductions, are redesigns of a roadway to decrease space for cars and increase space for sidewalks, multi-use paths, and pedestrian amenities. They can reduce crossing distances and slow vehicular speeds. Other countermeasures, such as pedestrian refuge islands, on street parking, or bike lanes should be considered where additional multi-modal transportation opportunities are desired (FHWA, 2013).



Figure 7-24.

#### High-Intensity Activated Crosswalk Beacon (HAWK)

High-Intensity Activated Crosswalk Beacons are protected pedestrian crossings at marked crosswalks that stop vehicular traffic to allow pedestrians to cross safely. HAWK beacons only operate when activated by pedestrians, allowing traffic to move freely at all other times. When HAWK beacons turn solid red, drivers are required to stop. When the light is blinking red, drivers must stop, but may proceed with caution after the road is clear. HAWK beacons should be considered at high-demand mid-block crossings on busy streets to facilitate safe, easy crossings (City of Tacoma, 2019).



Figure 7-25.

#### Rectangular Rapid Flash Beacons (RRFB)

Rectangular Rapid Flash Beacons are pedestrian-activated beacons that increase pedestrian safety at crosswalks. They are used alongside other warning signs at uncontrolled, marked crosswalks. They are placed on both sides of the crosswalk with signs indicating the direction of travel and contain two rectangular LED indicators that flash rapidly when activated. Other treatments, such as raised crosswalks and advance stop/yield lines, may be appropriate to combine with RRFB's.

## How do pedestrian safety measures improve the pedestrian experience?

Examining when and where people walk provides a better understanding of how people want to connect to destinations in their communities. Pedestrian infrastructure should be planned, designed, installed, and maintained to prevent barriers to walking and be useable by people of all ages and abilities. As infrastructure-oriented safety treatments, countermeasures help improve the pedestrian experience by providing accommodations that increase perceptions of personal security and safety from vehicular traffic.

## How should communities in Central Indiana use pedestrian safety measures?

In using pedestrian safety measures, communities should consider the context of the walking environment. Physical barriers to walking, such as gaps in the pedestrian network, waterways, bridges, major roads, or freeways, lack of pedestrian crossing opportunities, and lack of curb ramps and steep grades may prevent safe access to community destinations. According to the Federal Highway Administration (FHWA) in the Pedestrian Safety Guide and Countermeasure Selection System, countermeasures selection should be based on the goal of the treatment, as well as the characteristics of the site.

### *Goal of the Treatment*

The goal of the treatment is the performance objective the treatment is trying to achieve. Pedestrian safety countermeasures are designed to prevent pedestrian-related crashes such as dart-outs, intersection dashes, multiple threats, commercial bus or vendor truck related incidents, vehicular turns and merges, and backing up. Performance objectives may include reducing traffic volumes or speeds, eliminating behaviors leading to pedestrian/vehicular conflicts, and reducing pedestrian exposure, as well as improving compliance with traffic regulations, pedestrian mobility, and pedestrian safety at crossing locations (Federal Highway Administration, 2013). In example, it is well-known that pedestrian injuries and fatalities are reduced when vehicles are traveling at slower speeds, so raised pedestrian crosswalks may be appropriate to consider to achieve this goal.

### *Characteristics of the Site*

The characteristics of the site are the geometric and operational characteristics of the site. This is critical, as countermeasures aimed at improving pedestrian safety along the roadway may not be appropriate for projects across the roadway. Site specifics may include where the roadway is located (along the roadway or across the roadway), the functional class of the roadway, existing vehicular volumes and speeds, the number of travel lanes, traffic signalization, and other special considerations such as the location of public transit stops, school zones, railroad crossings, and work zones (Federal Highway Administration, 2013).

### *Improving Walkability*

Walkability is directly related to the quality of the pedestrian environment (Fig. 7-26.) People tend to walk more and drive less in high quality pedestrian environments. The quality of the pedestrian environment is tied to perceptions of safety. Gaps in the pedestrian network, lack of safe crossing opportunities, and major barriers discourage walking. Some populations are at greater risk for pedestrian-related crashes, such as youth and senior populations, as well as those who use assistive mobility devices to move as a pedestrian. Safe pedestrian facilities should be installed and maintained in areas where people are most likely to walk.



Figure 7-26. | Walkability is directly related to the quality of the pedestrian environment.

## Guiding Policies and Procedures

In addition to the pedestrian safety toolbox, pedestrian-related policies can help guide future pedestrian improvements and direction. Policies are plans of action adopted by governing agencies or organizations aimed at guiding decisions and achieving specific outcomes. Policies are issued in written documents and are adopted by governing entities as a demonstration of legitimacy and force. In some cases, policies may be implied through the prioritization and distribution of funds.

No single policy exists to address or increase walkability. A combination of policy and infrastructure enhancements is necessary to direct the pedestrian improvements. In order to be effective, pedestrian-related policies should be established with a specific vision, goals and objectives in mind and include methodology to measure the performance of the desired outcomes.

This regional pedestrian plan does not adopt or enforce policies or procedures; rather, it provides sources and recommendations for governing agencies in communities and local organizations to consider when implementing their own pedestrian-related policies and procedures. The International Technology Scanning Program, sponsored by the Federal Highway Administration, developed **Public Policies for Pedestrian and Bicyclist Safety and Mobility** in 2010 (Fig. 7-27). This document identifies and assesses innovative approaches aimed at improving the safety, access, and mobility of pedestrians and bicyclists in the transportation network. The document includes numerous examples of pedestrian-related policies from across the nation. According to the FHWA, there are two main types of pedestrian-related policies, including Complete Streets policies and Support policies (Federal Highway Administration, 2010).

### Complete Streets Policies

Complete Streets policies address the funding, planning, and design of streets to ensure safe and equitable access for all users, including pedestrians, bicyclists, motorists, transit riders, and freight (Fig. 7-28). In Central Indiana, the city of Indianapolis, the city of Westfield, the Indianapolis MPO, and INDOT have adopted Complete Streets policies. As of the writing of this plan, the town of Cumberland is currently in the process of adopting a

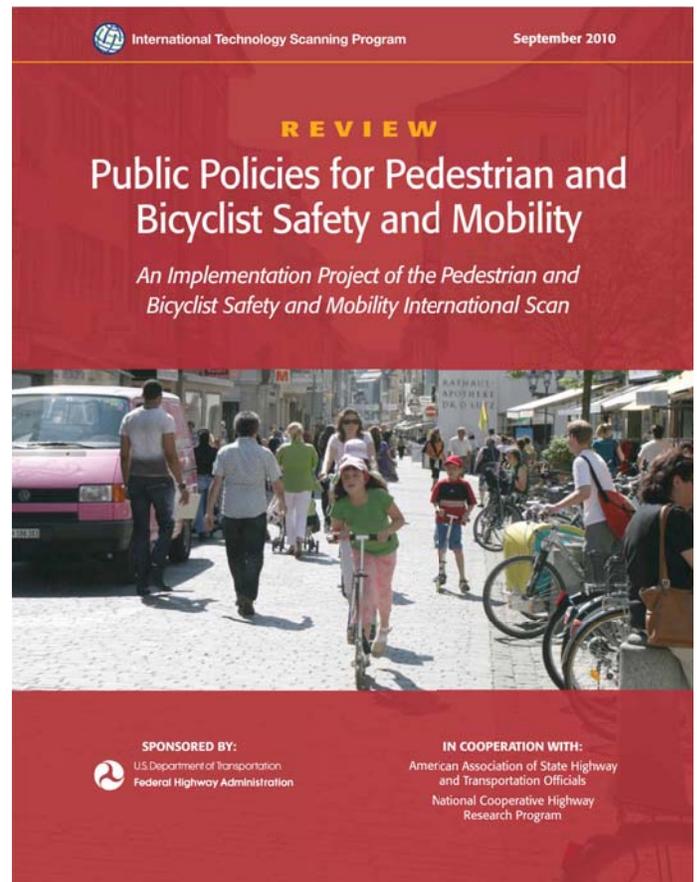


Figure 7-27. | Public Policies for Pedestrian and Bicyclist Safety and Mobility.



Figure 7-28. | Complete Streets ensure safe and equitable access for all users.

similar policy. The benefits of Complete Streets policies extend beyond the pedestrian; they also increase economic development, reduce transportation costs, and increase sustainability by encouraging active modes of transportation (Federal Highway Administration, 2010). Complete Streets policies should each of the following typologies:

- **Funding Policies.** These policies set aside or encourage funding for new pedestrian improvement projects and programming or maintenance of existing sidewalks and paths.
- **Planning Policies.** These policies guide the identification and development of pedestrian improvement projects and programming.
- **Design Policies.** These policies guide the physical design of street and pedestrian projects (materials, measurements, etc.).
- **Maintenance Policies.** These policies specify how sidewalks and paths should be maintained (sweeping, snow removal, repair, etc.).

## Support Policies

Support policies address elements not directly related to infrastructure improvements (Federal Highway Administration, 2010) including:

- Parking Policies
- Transit Integration Policies
- Enforcement Policies
- Encouragement Policies
- Education Policies

### Parking Policies

Parking policies are those that guide the pricing, location, and availability of vehicular parking opportunities (Fig. 7-27). Where parking is expensive or limited, people may choose alternative modes of transportation, such as walking.

Historically, car-friendly practices have resulted in drivable communities that limit density, increase travel distances, and require ample off-street parking

opportunities. Studies have shown that these policies can have negative impacts on our urban environments, including increased traffic congestion, urban sprawl, rising housing costs, and poor walkability, to name a few. Parking requirements can unfairly disadvantage those who can't, or don't, drive (Shoup, 2019). Donald Shoup, professor of urban planning at UCLA, published the *High Cost of Free Parking* in 2005, where he recommended two parking strategies to improve the economy, environment, and overall health of our communities. These strategies include:

- Charge the right prices for on-street parking to balance parking supply and demand and ensure there are no parking shortages
- Spend parking revenue to improve public services on metered streets

Examples of parking policies include parking pricing, parking cash-outs, discounted or preferential parking, unbundled parking, and bike parking and end of trip facilities.

### Parking Pricing

In many communities across the MPA, parking is free, inadequately priced, or automatically included with the cost of rent. Motorists often pay for parking at flat annual or monthly rates, which doesn't encourage walking. Parking pricing may be used to reduce parking and public transportation problems, pay for parking facility costs, or to raise funds for any purpose, such as community transportation programming. Parking pricing should use convenient electronic payment methods to accommodate motorists. Motorists should only be charged for the amount of time parked (Litman, 2016).

### Parking Cash-Outs

Parking cash-outs are positive financial incentives offered by employers to their employees. Employees can choose to receive cash instead of subsidized parking, where parking is paid for by the company. Parking cash-outs can reduce the number of personal vehicle trips and encourage walking, carpooling, and use of public transportation (Litman, 2016).

### Discounted or Preferential Parking

Discounted or preferential parking is offered to carpool vehicles where more than one commuter shares a single vehicle. Carpool vehicles are offered discounted or preferential parking to encourage ridesharing and ease traffic congestion at places of business (Litman, 2016).

### Unbundled Parking

Unbundled parking is where parking spaces are rented or sold separately from building space. Only those who use parking pay for parking. Building owners can unbundle parking by offering discounts to those who use fewer than average parking spaces or itemizing parking in lease agreements (Litman, 2016).

### Bike Parking Hubs

Bike parking hubs make it possible for pedestrians to complete trips by walking to their destinations. They should be located in centralized areas within high-density employment districts, near shopping and dining opportunities, and parks and recreation destinations to incentivize use. Bike parking hubs should include short- and long-term parking, be highly visible, and include some type of weather protection. In some cases, it may be appropriate to offer end-of-trip facilities such as showers and changing rooms to make cycling more convenient.

### Transit Integration Policies

Transit integration policies are those aimed at making the connections between walking and transit more convenient. These may include locating transit stops in areas with high population densities and/or high densities of people who may be more dependent on walking or public transit for the majority of their trips, for example youth, senior, and at-risk populations.

Many people in the MPA depend on walking and public transit for the majority of their trips. For public transit to be successful, safe and convenient access to and from transit stops is needed.

### Safe Routes to Transit

A growing trend in transit integration policies is Safe Routes to Transit. According to America Walks, a national nonprofit organization dedicated to making communities across America safe places to walk, "A Safer Route to Transit program targets pedestrian improvements around transit stops and the walking or cycling routes used to reach them," (American Walks, 2019). Safe Routes to Transit programs encourage public transit use and active transportation opportunities, such as walking and bicycling (Fig. 7-29). These programs have many benefits including from street safety improvements and slower traffic speeds while reducing dependency on personal vehicles.

In 2004, the city of San Francisco became the first in the nation to adopt a Safe Routes to Transit (SR2T) program. The city instituted a \$1 increase in Bay Area bridge tolls to support multi-modal transportation projects in the region and reduce traffic congestion on toll bridge corridors. The SR2T program was awarded \$20 million to fund walking and bicycling treatments to access regional transportation hubs. Some of these improvements included pedestrian and bicycle safety enhancements, removal of barriers to walking and bicycling around transit stops, system-wide transit accommodations for pedestrians and bicyclists, and enhanced wayfinding elements (TransForm, 2019).



Figure 7-29. | Safe Routes to Transit programs encourage public transit use and active transportation.

### *Safety and Enforcement Policies*

Enforcement policies are those that guide the enforcement of existing traffic laws to increase pedestrian safety, access, and mobility (Fig. 7-30).

Characteristically, walkable areas are zones where pedestrian activity is both anticipated and encouraged. In order to support multi-modal transportation opportunities in these areas, communities across the nation are adopting policies and procedures that support pedestrian-related development. Pedestrian safety remains a concern in discussions relating to walking.

In Central Indiana, the density of pedestrian injuries and fatalities is on the rise. The way we design, plan, and maintain our streets has a tremendous impact on pedestrian safety. In order to reduce pedestrian injuries and fatalities, the National Highway Safety Administration suggests a three-pronged approach, including engineering, education, and enforcement. Enforcement policies play a key role in strengthening the importance of pedestrians in the roadway, particularly in situations where traffic laws may not be enforced (National Highway Traffic Safety Administration, 2019).

Effective safety enforcement policies have the following characteristics:

- partnerships with local organizations to expand pedestrian safety resources;
- coordination with local officials to ensure that enforcement policies comply with local traffic laws;
- coordination with design and planning personnel to determine locations where enforcement operations may be most effective;
- public outreach opportunities to educate community members on appropriate pedestrian and motorists' behaviors, increase pedestrian safety awareness, and encourage involvement in program planning efforts; and
- measures to evaluate the performance of enforcement policies (National Highway Traffic Safety Administration, 2019).



Figure 7-30. | Enforcement policies guide the enforcement of existing traffic laws to increase pedestrian safety.

A number of enforcement policies have been implemented by governing bodies in communities across the nation. While the language varies, the intent remains the same: protect pedestrian interests in the transportation system.

When combined with involvement by community members, elected officials, law enforcement personnel, and the media, public safety and enforcement campaigns are extremely effective (Walk Friendly Communities, 2019). Examples of encouragement policies include traffic safety units, traffic enforcement operations, child safety programs, pedestrian advisory committees, and pedestrian safety action plans.

#### Traffic Safety Units

Traffic safety units are groups of law enforcement officials who prioritize traffic safety enforcement to address chronic concerns, challenges and safety issues related to walking at the neighborhood level. In example, the City of Santa Monica, CA established the Neighborhood Resource Officer program for community-oriented law enforcement. These officers are divided into distinct patrol areas to address long-term community livability issues and crime trends (City of Santa Monica, 2019).

### Traffic Enforcement Operations

Traffic enforcement operations reinforce traffic safety laws relating to walking. In example, the Traffic Bureau in Montclair, NJ conducts a series of pedestrian decoy operations each year that are covered by the media as a warning campaign for motorists to increase pedestrian awareness and encourage compliance with traffic laws (Walk-Friendly Communities, 2019).

### Child Safety Programs

Child safety programs are designed to increase walking safety for child pedestrians. These programs educate children about walking safety risks. In example, Walk this Way is a national program created by Safe Kids WorldWide and FedEx to bring child pedestrian safety issues to the forefront. The program encourages partnerships between public agencies, community organizations, educational institutions, and parents to improve walking conditions for children. The program includes awareness activities, infrastructure improvements, research, and educational programs to reduce child pedestrian fatalities (Safe Kids Worldwide, 2019).

### Pedestrian Advisory Committees

Pedestrian Advisory Committees are pedestrian advocates that recognize the importance of walking as an active form of transportation. They discuss all matters relating to pedestrian safety, convenience, and planning and provide input on transportation matters that will impact pedestrian issues. They also make recommendations for pedestrian-related policies, programming, and procedures to create livable communities that are safe for walking. Formed at the community level, members represent residents and local organizations interested in making positive changes to the pedestrian environment.

Collaboration involves communication between multiple departments, organizations, and agencies in order to address specific problems or goals relating to pedestrian safety.

### Pedestrian Safety Action Plans

Pedestrian Safety Action Plans are another way to increase pedestrian safety in the built environment.

The Action Plans are developed by community leaders and decision makers and are targeted towards specific pedestrian-related challenges, needs, and concerns in order to improve walkability. These plans provide infrastructure improvements, countermeasures, and programs to address pedestrian safety at the local level (Federal Highway Administration, 2009). Components of successful Pedestrian Safety Action Plans include:

- Vision, Goals and Objectives
- Performance Measures
- Safety Analysis
- Community Engagement
- Countermeasures and Policy Recommendations
- Implementation Strategies

### Encouragement Policies

Encouragement polices are those that guide the encouragement of walking as an active, sustainable form of transportation (Fig. 7-31) .



Figure 7-31. | Encouragement policies are those that guide the encouragement of walking.

Encouragement is an integral component of the walking puzzle. Encouragement programs such as social media campaigns, special events related to walking, community benefit programs, employer incentives, and collaboration with local bicycling and walking organizations can improve walkability (U.S. Department of Transportation, 2019). Examples of encouragement policies include physical activity implementation plans, Walk to Work Day, and Safe Routes Programs.

### Physical Activity Implementation Plans

Physical Activity Implementation Plans are designed to encourage physical activity and inspire people to lead more active, healthier lifestyles (Fig. 7-32). According to the U.S. Department of Health and Human Services, children should do at least 7 hours a week of moderate-to-vigorous physical activity, while adults should do 2.5 to 5 hours a week of moderate-to-vigorous physical activity. Physical Activity Implementation Plans provide people with a roadmap to achieve national guidelines and integrate physical activity into their daily lives.

On the international stage, the Scottish Government was one of the first countries to adopt a strategy targeting physical activity, **Let's Make Scotland More Active (LMSMA)**, a national initiative introduced in 2003. LMSMA aimed to increase physical activity to meet minimum recommended levels in order to promote positive physical and mental well-being and reduce rates of chronic disease. The strategy resulted in a positive upward trend in physical activity amongst adults. In 2014, the Scottish Government adopted the National Physical Activity Implementation Plan, the first of its kind (Fig. 7-32). The plan builds on the LMSMA initiative to get more Scots walking and inspire people to lead more active, healthier lifestyles (Scottish Government, 2014).

The plan was intended to empower Scottish communities to create a culture of walking through improved walking environments that provide safe and convenient mobility for people of all ages and abilities. It targets obstacles to walking including physical, practical, educational, and socio-cultural barriers that may discourage active modes of transportation. Both infrastructure improvements and procedural policies were utilized to make a difference. Some of the benefits of Walk Scotland include positive planning, economic development, wellness, environmental, and educational

impacts. In order to achieve its goals, the plan partnered with various organizations, such as Paths for All, a national organization that promotes walking (Scottish Government, 2014).

Other encouragement campaigns may target specific subsets of the population, such as youth, senior, and at-risk populations. These campaigns may offer specific information regarding health and wellness and are a great way to increase physical activity and get more people walking.

### Walk to Work Day

Walk to Work Day is an annual event designed to encourage people to walk for all or part of their daily commutes. It supports walking as a healthy alternative to driving, promotes public transportation options, and advocates for safe pedestrian facilities.

### Safe Routes Programs

Safe Routes programs are part of the Safe Routes Partnership, a national non-profit organization that aims



Figure 7-32. | Physical Activity Implementation Plans are designed to encourage physical activity.

to provide safe and active pedestrian facilities for equity and health. Safe Routes programs include Safe Routes to School, Safe Routes to Parks, Safe Routes to Healthy Foods, and Safe Routes for Seniors. These programs should be considered in areas that demonstrate need based on number of pedestrian fatalities, traffic conditions, population statistics, and the adequacy of existing pedestrian infrastructure.

Safe Routes to School is designed to make walking and bicycling to and from school safer and more convenient for children. Safe Routes policies may include walking school buses or bicycling trains, where adult-supervised groups of children walk or bicycle on pre-planned routes to and from school (Safe Routes to School Online Guide, 2019).

Safe Routes to Parks are ten-minute walks or bike rides to parks that are safe, convenient, and accessible for people of all ages and abilities. They should be considered in areas that have historically experienced high levels of crime, disinvestment, and chronic disease (Safe Routes Partnership, 2019).



Figure 7-33. Safe Routes for Seniors targets areas near senior care centers and hospitals.

Safe Routes to Healthy Foods is an opportunity to provide safe, convenient routes to affordable healthy foods for people who are less likely to have access to grocery stores or own personal vehicles, such as low-income, minority, and rural populations. The movement examines areas where transportation connections can facilitate better access to nutritious foods for communities in need (Safe Routes Partnership, 2019).

Safe Routes for Seniors targets areas near senior care centers and hospitals and areas with high densities of older adults for pedestrian improvements (Fig. 7-33). The movement considers the everyday needs of seniors to maintain independence, increase social connectedness, and access healthcare facilities (America Walks, 2019).

#### *Education Policies*

Education policies are those that guide the instruction of safe and legal operation by road users and seek to reduce injuries and deaths through the education of residents. Examples of education policies include Vision Zero Policies, pedestrian education programs, and travel toolkits.

#### *Vision Zero Policies*

One of the largest current educational policy campaigns is the Vision Zero policy. According to the Vision Zero Network, “Vision Zero is a strategy to eliminate all traffic fatalities and serious injuries, while increasing safe, health, equitable mobility for all,” (Vision Zero Network, 2018). The campaign started in Europe in the 1990s, and has since spread to cities across the United States. The foundational understanding of the policy is that planners, leaders, and decision-makers have the ability to prevent all traffic collisions by taking proactive approaches to improve traffic safety.

The program aims to improve the roadway environment through safety strategies and countermeasures that result in fewer serious injuries or fatalities. In pedestrian safety, the term “countermeasure” is generally used to describe a safety program or approach to address a specific type of crash. Countermeasures can include infrastructure countermeasures (e.g., traffic calming, bike lanes) or behavioral countermeasures (e.g., enforcement, safety campaigns). It is an integrated, evolving approach that takes into account the need for a diverse, interdisciplinary team for changing policy and behaviors to maintain a



Figure 7-34. Pedestrian education programs teach people best practices when it comes to walking.

shared goal of zero serious injuries and fatalities. The plan utilizes several strategies, including establishing leadership through collaboration between community members, stakeholders, organizations, leaders, and decision makers; analyzing data trends to understand how and when accidents are occurring; prioritizing equitable access and mobility, encouraging community engagement; maintaining safe traffic speeds; and setting a timeline to track changes and for accountability (Vision Zero Network, 2018).

The pedestrian safety measures and policies and procedures are part of an effort to move pedestrian infrastructure improvements in Central Indiana forward.

### Pedestrian Education Programs

Pedestrian education programs teach people best practices when it comes to walking (Fig. 7-34). Nationwide, statewide, and local campaigns can be used to inform pedestrians and motorists of their rights and responsibilities and encourage safe interaction between all roadway users.

### Travel Toolkits

Travel toolkits are an interactive way to encourage less trips taken by single-occupancy vehicles and more trips taken by walking, bicycling, carpooling, and public transit (Fig. 7-35). Each “kit” contains materials such as neighborhood maps and bus schedules that provide people with the tools they need to improve their health and explore their communities (America Walks, 2019).



Figure 7-35. Travel toolkits are an interactive way to encourage multi-modal transportation.

# 8

## MOVING FORWARD





## MOVING FORWARD

The Regional Pedestrian Plan provides the foundation for establishing a functional, sustainable, and convenient regional pedestrian transportation network in Central Indiana.

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Civic leaders, public and private organizations, and Central Indiana residents coming together to create opportunities for pedestrian infrastructure improvements will help provide access to diverse populations, increase mobility, and improve community culture. Together, we can continue innovating and lead by example to change perceptions about walking.

The recommendations introduced in chapter six are not one-size fits all conditions; in order to affect improvement where it impacts the physical change of the built environment, mobility solutions that embrace functionality and sustainability, improve culture, integrate access, and foster continued innovation in our communities must be considered.

Effective education about walking as a mobility option and partnerships with local community organizations and municipalities is necessary to protect the future of the regional transportation network. Join us in making Central Indiana a great place to walk!

# A

## APPENDIX A: REFERENCES





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## List of Figures

**Fig. 1-1.** The vision emphasizes the importance of providing for the adequate and equitable distribution of pedestrian facilities. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 1-2.** Sidewalks and paths should be enjoyable, useful, and have an impact on the most people's lives. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-1.** Walkways are the fundamental building blocks of our regional pedestrian transportation system. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-2.** Detectable warnings are textured surface patterns that are detectable by cane of foot. Photo Credit: David Fulmer.

**Fig. 3-3.** Crossing locations may be marked with various crosswalk marking patterns, such as solid, standard, continental, dashed, zebra, or ladder markings. Photo Credit: Federal Highway Administration.

**Fig. 3-4.** Mid-block crossings may be controlled by pedestrian-activated warning devices. Photo Credit: TAPCO.

**Fig. 3-5.** The existing pedestrian network in Central Indiana includes gaps (top) and no gap conditions (above). Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-6.** Existing Pedestrian Network & Gaps

**Fig. 3-7.** The Indianapolis Cultural Trail is an 8-mile long trail that winds through downtown Indianapolis. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-8.** The Monon Trail is the most well-known trail. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-9.** The Pennsy Trail is part of the National Road Heritage Trail. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-10.** Corridors without proper sidewalk amenities reduce pedestrian comfort. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 3-11.** Intersections and crossings are where people and vehicles interact. Photo Credit: Google Earth.

**Fig. 4-1.** The vision, goals and objectives were reviewed and approved by the project Steering Committee. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 4-2.** Social media was used as one form of outreach communication. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 4-3.** The indices guide the prioritization of future improvement projects and seek to identify improvement areas that will bring the greatest amount of impact to the regional pedestrian network. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 5-1.** Public engagement materials were made available to the public on the Indianapolis MPO's Website.

**Fig. 5-2.** Results of the survey were evaluated by the project team and used to help set priorities.

**Fig. 5-3.** Motorists behaviors are one reason pedestrians felt threatened for their personal safety. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 5-4.** Lack of pedestrian facilities is a major reason respondents chose not to walk more frequently. Photo Credit: Google Earth.

**Fig. 5-5.** Results of the survey were evaluated by the project team and used to help set priorities.

**Fig. 5-6.** Promotional posts were boosted three times to increase traffic and reach a wider audience.

**Fig. 5-7.** Posts on the Indianapolis MPO's Facebook page highlighted various topics related to walking.

**Fig. 5-8.** Posts on the Indianapolis MPO's Facebook page highlighted various topics related to walking.

**Fig. 5-9.** Posts on the Indianapolis MPO's Facebook page highlighted various topics related to walking.

**Fig. 5-10.** A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 5-11.** A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 5-12.** A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 5-13.** A Facebook Live Event for the Regional Pedestrian Plan was hosted by the Indianapolis MPO. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 6-1.** Priority Investment Areas Indices: Pedestrian Safety

**Fig. 6-2.** Priority Investment Areas Indices: Equity.

**Fig. 6-3.** Priority Investment Areas Indices: Wellness.

**Fig. 6-4.** Priority Investment Areas Indices: Pedestrian Demand.

**Fig. 6-5.** Priority Investment Areas Indices: Walking Comfort.

**Fig. 6-6.** Priority Investment Areas Rank: Composite Ranking Strategy.

**Fig. 7-1.** Priority Pedestrian Infrastructure Improvement Projects: Central Indiana.

**Fig. 7-2.** Interconnectivity is necessary to achieve a continuous regional transportation system. Photo Credit: The Ticker.

**Fig. 7-3.** Alternative sidewalk configurations include stamped asphalt and curb stops. Photo Credit: Seattle Department of Transportation.

**Fig. 7-4.** Alternative sidewalk configurations include stamped asphalt and curb stops. Photo Credit: Seattle Department of Transportation.

**Fig. 7-5.** Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways. Photo Credit: Portland Bureau of Transportation.

**Fig. 7-6.** Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways. Photo Credit: Portland Bureau of Transportation.

**Fig. 7-7.** Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways. Photo Credit: Portland Bureau of Transportation.

**Fig. 7-8.** Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways. Photo Credit: Portland Bureau of Transportation.

**Fig. 7-9.** Alternative pedestrian walkways may include shared local streets, advisory shoulders, safer shoulders, and separated walkways. Photo Credit: Portland Bureau of Transportation.

**Fig. 7-10.** Multi-Use Paths. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-11.** Paved Shoulders. Photo Credit: Indianapolis MPO.

**Fig. 7-12.** Sidewalks. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-13.** Pedestrian Amenities. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-14.** Accessible Curb Ramps. Photo Credit: Transpo Industries, Inc.

**Fig. 7-15.** Automated Pedestrian Detection. Photo Credit: F. Bucher.

**Fig. 7-16.** Pedestrian Signalization. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-17.** Crossing Islands. Photo Credit: Richard Drdul.

**Fig. 7-18.** Curb Extensions. Photo Credit: Richard Drdul.

**Fig. 7-19.** Raised Pedestrian Crosswalks. Photo Credit: Richard Drdul.

**Fig. 7-20.** Marked Crosswalks. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-21.** Pedestrian Overpasses/Underpasses. Photo Credit: Dmytro Sergiyenko.

**Fig. 7-22.** Advance Stop/Yield Lines. Photo Credit: Federal Highway Administration.

**Fig. 7-23.** Road Diet. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-24.** High-Intensity Activated Crosswalk Beacon (HAWK). Photo Credit: City of Tacoma, WA.

**Fig. 7-25.** Rectangular Rapid Flash Beacon (RRFB). Photo Credit: Carol Kachadoorian.

**Fig. 7-26.** Walkability is directly related to the quality of the pedestrian environment. Photo Credit: Indianapolis MPO.

**Fig. 7-27.** Public Policies for Pedestrian and Bicyclist Safety and Mobility. Photo Credit: Federal Highway Administration.

**Fig. 7-28.** Complete Streets ensure safe and equitable access for all users. Photo Credit: Indianapolis MPO.

**Fig. 7-29.** Safe Routes to Transit programs encourage public transit use and active transportation. Photo Credit: IndyGo.

**Fig. 7-30.** Enforcement policies guide the enforcement of existing traffic laws to increase pedestrian safety. Photo Credit: Daniel Schwen.

**Fig. 7-31.** Encouragement policies are those that guide the encouragement of walking. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-32.** Physical Activity Implementation Plans are designed to encourage physical activity. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-33.** Safe Routes for Seniors targets areas near senior care centers and hospitals. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-34.** Pedestrian education programs teach people best practices when it comes to walking. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. 7-35.** Travel toolkits are an interactive way to encourage multi-modal transportation. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. AC-1.** Steering Committee Meeting #1, Exercise #2: Plan Elements.

**Fig. AC-2.** Steering Committee Meeting #1, Exercise #3: Outcomes

**Fig. AC-3.** Steering Committee Meeting #2, Exercise #1: Draft Objectives.

**Fig. AC-4.** Steering Committee Meeting #2, Exercise #2: Goal Prioritization.

**Fig. AC-5.** Ron Taylor (TSWDG) presents Exercise #1: Prioritization.

**Fig. AC-6.** Steering Committee Meeting #3, Exercise #1: Prioritization.

**Fig. AC-7.** Exercise One: Prioritization was followed by a brief overview of next steps, and an additional questions/comments period where members were invited to discuss the prioritization process and review the boards in detail.

**Fig. AC-8.** Maria Wainscott (TSWDG) presents the second part of the meeting. Photo Credit: Taylor Siefker Williams Design Group.

**Fig. AC-9.** Ron Taylor (TSWDG) introduces the final composite ranking strategy map, which organized pedestrian projects into five tiers of priority.

**Fig. AC-10.** Pedestrian safety measures include along the roadway and across the roadway.

**Fig. AC-11.** Steering Committee Meeting #4, Exercise #1: Pedestrian Safety Measures.

**Fig. AC-12.** Members were given “library time” to read through and complete the exercise.

**Fig. AC-13.** Complete Streets policies ensure safe and equitable access for all users.

**Fig. AC-14.** Steering Committee Meeting #4, Exercise #2: Policies and Procedures

**Fig. AD-1.** Rack Card Front (Left); Rack Card Back (Right).

**Fig. AD-2.** Public Survey #1.

**Fig. AD-3.** Public Survey #1.

**Fig. AD-4.** Public Survey #1.

**Fig. AD-5.** Public Survey #1.

**Fig. AD-6.** Public Survey #1.

**Fig. AD-7.** Public Survey #1.

**Fig. AD-8.** Public Survey #1.

**Fig. AD-9.** Public Survey #1.

**Fig. AD-10.** Public Survey #1.

**Fig. AD-11.** Public Survey #1, Question 1: In your usual week, do you WALK for at least thirty (30) minutes at a time for recreation, exercise, to get to/from places, or for any other reason?

**Fig. AD-12.** Public Survey #1, Question 2: Do you use an assistive device to move as a pedestrian?

**Fig. AD-13.** Public Survey #1, Question 3: Tell us about the destinations you WALK to now?

**Fig. AD-14.** Public Survey #1, Question 4: If you had better pedestrian access or lived somewhere else, where would you want to WALK to?

**Fig. AD-15.** Public Survey #1, Question 6: In your opinion, what makes your community a great place to WALK?

**Fig. AD-16.** Public Survey #1, Question 7: Do you feel threatened for your personal safety when you WALK?

**Fig. AD-17.** Public Survey #1, Question 8: Did you feel threatened for your personal safety because of the following?

**Fig. AD-18.** Public Survey #1, Question 9: How would you rate the following reasons you do not WALK more frequently?

**Fig. AD-19.** Public Survey #1, Question 10: In your WALKING environment, which types of locations do you think need the most improvements?

**Fig. AD-20.** Public Survey #1, Question 11: What is your age?

**Fig. AD-21.** Public Survey #1, Question 12: What is your gender?

**Fig. AD-22.** Public Survey #1, Question 13: Which best describes your race/ethnicity?

**Fig. AD-23.** Public Survey #1, Question 14: What is your total household income?

**Fig. AD-24.** Public Survey #1, Question 15: How many people currently live in your household?

**Fig. AD-25.** Public Survey #1, Question 16: What county do you live in?

**Fig. AD-26.** Public Survey #1, Question 17: If you are employed, what county is your primary job located in?

**Fig. AD-27.** "Did You Know?" post.

**Fig. AD-28.** Public Survey #2.

**Fig. AD-29.** Public Survey #2.

**Fig. AD-30.** Public Survey #2.

**Fig. AD-31.** Public Survey #2.

**Fig. AD-32.** Public Survey #2.

**Fig. AD-33.** Public Survey #2 Results: County of Residence and Race.

**Fig. AD-34.** Public Survey #2 Results: Sex, Age, and Household Income.

**Fig. AD-35.** Public Survey #2 Results: Safety and Location.

**Fig. AD-36.** Public Survey #2 Results: Equity and Health and Wellness.

**Fig. AD-37.** Public Survey #2 Results: Comfort.

**Fig. AE-1.** Preliminary Ranking Strategy: Public Input.

**Fig. AE-2.** Preliminary Ranking Strategy: Steering Committee Input.

**Fig. AE-3.** Preliminary Ranking Strategy: Marion County WalkWays Plan.

**Fig. AE-4.** Preliminary Ranking Strategy: Planning Best Practices.

**Fig. AF-1.** Prioritization mapping processes were carried out in GIS (Geographic Information System).

**Fig. AG-1.** Priority Pedestrian Infrastructure Improvement Projects: Boone County.

**Fig. AG-2.** Priority Pedestrian Infrastructure Improvement Projects: Hamilton County.

**Fig. AG-3.** Priority Pedestrian Infrastructure Improvement Projects: Hancock County.

**Fig. AG-4.** Priority Pedestrian Infrastructure Improvement Projects: Hendricks County.

**Fig. AG-5.** Priority Pedestrian Infrastructure Improvement Projects: Johnson County.

**Fig. AG-6.** Priority Pedestrian Infrastructure Improvement Projects: Marion County.

**Fig. AG-7.** Priority Pedestrian Infrastructure Improvement Projects: Morgan County.

**Fig. AG-8.** Priority Pedestrian Infrastructure Improvement Projects: Shelby County.

**Fig. AG-9.** The interactive mapping dashboard was developed to display priority pedestrian improvement projects in Central Indiana and allow communities, governing agencies, local organizations, and the general public to consult and analyze it.

## List of Tables

**Table AB-1.** Inventory of Existing Data: Counties.

**Table AB-2.** Inventory of Existing Data: Cities.

**Table AB-3.** Inventory of Existing Data: Towns.

**Table AF-1.** Weighted Overlay: Pedestrian Safety.

**Table AF-2.** Weighted Overlay: Equity.

**Table AF-3.** Weighted Overlay: Wellness.

**Table AF-4.** Weighted Overlay: Pedestrian Demand.

**Table AF-5.** Weighted Overlay: Walking Comfort.

**Table AF-6.** Weighted Overlay: Preliminary Ranking Strategies.

**Table AF-7.** Weighted Overlay: Composite Prioritization.

# B

## APPENDIX B: RELEVANT PLANS





## APPENDIX B: RELEVANT PLANS

The MPO Regional Pedestrian Plan examines pedestrian facilities and connectivity in the Central Indiana region, including Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, and Shelby counties.

### Relevant Plans

The plan builds on recommendations and findings of pedestrian planning efforts in communities in the MPA (Metropolitan Planning Area). Based on discussions with the MPO staff and project Steering Committee, the project team conducted an inventory of existing plans and resources on local pedestrian-related practices. Data sources at the county, city, and town levels are provided in the following tables.

### INVENTORY OF EXISTING DATA: COUNTIES

County	Title	Publication Date
Marion County	Marion County Thoroughfare Plan	2015
Marion County	Indianapolis-Marion County Pedestrian Plan	2016
Boone County	Boone County Area Comprehensive Plan	2009
Boone County	Boone County Thoroughfare Plan	2017
Hamilton County	Hamilton County Thoroughfare Plan	2007
Hamilton County	Hamilton County Comprehensive Plan	2016
Hancock County	Hancock County Comprehensive Plan	2005
Hancock County	Hancock County Trails Plan	2018
Hendricks County	Hendricks County Comprehensive Plan	2006
Johnson County	Johnson County Comprehensive Plan	2011
Morgan County	Morgan County Greenways Master Plan	2004
Morgan County	Morgan County Comprehensive Plan	2009
Shelby County	Shelby County Comprehensive Plan	2006

Table AB-1. | Inventory of Existing Data: Counties

## INVENTORY OF EXISTING DATA: CITIES

City	Title	Publication Date
Beech Grove	Beech Grove Multi-Modal Special Area Study	2007
Beech Grove	Beech Grove Parks, Recreation, and Open Space Master Plan	2010
Carmel	Carmel-Clay Comprehensive Plan	2009
Carmel	Carmel Multi-Modal System Plan	2010
Fishers	Fishers Transportation Plan	2010
Fishers	Fishers Bicycle and Pedestrian Master Plan	2014
Fishers	Fishers Comprehensive Plan	2016
Franklin	Franklin Comprehensive Plan	2013
Greenfield	Greenfield Indiana Trails Study Pennsy Rail Trail	2001
Greenfield	Greenfield Thoroughfare Plan	2007
Greenfield	Greenfield Parks and Recreation Department Master Plan	2014
Greenfield	Greenfield Comprehensive Plan	2015
Greenwood	Greenwood Comprehensive Plan	2007
Greenwood	Greenwood Trails and Greenways Master Plan	2010
Greenwood	Greenwood Parks and Recreation Master Plan	2017
Indianapolis	Indianapolis Bicycle Master Plan	2010
Indianapolis	Indy Greenways Full Circle Master Plan	2014
Indianapolis	Indianapolis-Marion County Pedestrian Plan	2016
Indianapolis	Pedal Indy Bicycle Master Plan	2018
Indianapolis	IndyMoves Transportation Integration Plan	2018
Lawrence	Lawrence Pedestrian Study	2009
Lawrence	Lawrence Bicycle and Pedestrian Plan	2018
Noblesville	Noblesville Alternative Transportation Plan	2011
Noblesville	Noblesville Comprehensive Plan	2013
Southport	Southport Parks and Recreation Master Plan	2016
Westfield	Westfield Thoroughfare Plan	2006
Westfield	Westfield-Washington Township Comprehensive Plan	2007

Table AB-2. | Inventory of Existing Data: Cities

## INVENTORY OF EXISTING DATA: TOWNS

Town	Title	Publication Date
Avon	Avon Comprehensive Plan	2005
Avon	Avon Thoroughfare Plan	2006
Avon	Avon Bicycle and Pedestrian Master Plan	2010
Bargersville	Bargersville Comprehensive Plan	2013
Brownsburg	Brownsburg Greenways Master Plan	2009
Brownsburg	Brownsburg Thoroughfare Plan	2009
Brownsburg	Brownsburg Comprehensive Plan	2012
Brownsburg	Brownsburg Active Transportation Plan	2014
Cicero	Cicero-Jackson Township Comprehensive Plan	2015
Cumberland	Cumberland Thoroughfare Plan	2007
Cumberland	Cumberland Comprehensive Plan	2011
Danville	Danville Comprehensive Plan	1998
Danville	Danville Comprehensive Plan	2010
Edinburgh	Edinburg Comprehensive Plan	2011
McCordsville	McCordsville Comprehensive Plan	2011
McCordsville	McCordsville Parks and Recreation Master Plan 2017-2021	2017
Mooresville	Mooresville Comprehensive Plan	2009
New Palestine	New Palestine Comprehensive Plan	1999
New Palestine	New Palestine Indiana Bike and Pedestrian Trail Plan	2015
New Whiteland	New Whiteland Comprehensive Plan	1989
Pittsboro	Pittsboro Comprehensive Plan	2014
Plainfield	Plainfield Comprehensive Plan	2016
Speedway	Speedway Transportation Plan	2006
Whiteland	Whiteland Comprehensive Plan	2011
Whitestown	Whitestown Transportation Plan	2013
Whitestown	Whitestown Comprehensive Plan	2015
Whitestown	Whitestown Bicycle and Pedestrian Master Plan	2018
Zionsville	Zionsville Comprehensive Plan	2003
Zionsville	Zionsville Transportation Plan	2010

Table AB-3. | Inventory of Existing Data: Towns



# APPENDIX C: STEERING COMMITTEE





## APPENDIX C: STEERING COMMITTEE

The MPO Regional Pedestrian Plan utilized a Steering Committee comprised of community leaders and local health and transportation organizations in Central Indiana.

The project Steering Committee helped advise and direct the project team on regional pedestrian transportation needs at the local level. Four steering committee meetings were hosted over the course of the project.

### Steering Committee Meeting #1

*November 9, 2018  
Marion County Health Department  
4012 N Rural St.  
Indianapolis, IN 46205*

#### Meeting Summary

The first steering committee meeting was held on November 9, 2018. Thirteen of the twenty-four members attended. During this meeting, the committee was provided with an overview of the MPO Regional Pedestrian Plan project and their role in the planning process. The consultant team and MPO Staff highlighted the planning process and timeline, which was developed prior to the meeting.

Following the introduction to the plan, the second part of the meeting included visioning exercises and discussions. These exercises included plan elements, visioning, and outcomes. In Exercise One: Plan Elements, members were asked about the biggest challenges and strengths in their communities related to pedestrian issues. In Exercise 2: Visioning, members were asked what priorities the regional pedestrian plan should focus on considering the future of the region as related to walkability. In Exercise 3: Outcomes,

members were asked what the best results and outcomes would be for the regional pedestrian plan as related to their communities. After individual brainstorming sessions for each exercise, the group was asked to discuss their answers. The “big issues” for each exercise were documented by the consultant team for issues not previously discussed.

Following the exercises, the third part of the meeting included preliminary mapping, an inventory of existing plans, and the survey. Members were asked to provide any additional local plans not identified by the inventory to the consultant team and to distribute and promote the survey. Before closing the meeting, the next meeting date was discussed. A summary of the “big issues” for each exercise is included below.

#### *Exercise #1 - Visioning*

What are the biggest challenges and strengths for your community related to pedestrian issues?

### Mobility/Accessibility (Biggest Challenges)

- Distance to amenities
- Limited connections to trails
- Limited connections to economic opportunities and jobs
- Land acquisition hostility
- Gaps in pedestrian infrastructure present connectivity issues between neighborhoods, public transit, recreational facilities, and other destinations
- Many existing sidewalks, crosswalks, and bus stops aren't ADA compliant
- Retrofitting existing roadways for pedestrian infrastructure can be difficult
- Lack of safe pedestrian crossings creates potential for pedestrian/vehicular conflicts
- Active railroad tracks are a barrier to pedestrian infrastructure
- Lack of funding for pedestrian infrastructure
- Equity
- Policy/Ordinance

### Mobility/Accessibility (Strongest Assets)

- Quality pedestrian infrastructure
- Public transit expansions and improved pedestrian access to transit stations
- Pedestrian infrastructure improvements to existing intersections
- New construction provides opportunities for pedestrian mobility and accessibility improvements
- Transit expansion (i.e. BRT lines) will bring improved pedestrian infrastructure
- Administrations are committed to developing mobility assets
- Community willingness
- Organizational support
- Walkable hubs (i.e., Fountain Square, Mass Ave, and Broad Ripple)
- Strong parks and regional trail systems
- Safe Routes to School programs
- Safe Routes to Parks programs



### Safety (Biggest Challenges)

- Existing policies prevent children from walking to school
- Lack of pedestrian street lighting
- Lack of ADA compliant pedestrian networks
- Consistent enforcement of traffic violations
- Costs associated with adding law enforcement
- Reckless driving (i.e. careless driving, improper driving, and driving without care or attention)
- Driver/pedestrian behaviors
- Traffic congestion
- Lack of pedestrian lighting
- Perceived safety concerns prevent people from walking
- Gaps in pedestrian infrastructure forces people to walk in the street, creating potential for pedestrian/vehicular conflicts
- Jaywalking creates potential for pedestrian/vehicular conflicts

### Safety (Strongest Assets)

- Pedestrian refuge islands
- Existing pedestrian access to public transit facilities
- Development of plans to decrease the number of pedestrian/vehicular conflicts crashes
- Administrations are committed to requiring and building pedestrian infrastructure
- Self-awareness
- Organizational support
- Traffic calming efforts
- Active law enforcement takes traffic control seriously
- Well-developed trail systems with good public safety presences
- Pedestrian Safety programs



### Health and Education (Biggest Challenges)

- Availability of safe pedestrian infrastructure
- Continuing education for motorists
- Bike box education
- Lack of universal pedestrian infrastructure standards
- Lack of funding for health and education outreach campaigns
- Gaps in pedestrian infrastructure do not encourage people to walk
- Scooters do not encourage people to walk
- Homelessness and poverty
- Lack of ease for spontaneous use of recreational amenities
- Getting people motivated and effecting changes in lifestyle

### Health and Education (Strongest Assets)

- Community engagement workshops
- Dedicated group of public transit riders
- Public health programs spread public awareness
- Partnerships with schools
- Partnerships with regional hospitals
- Large number of community recreational amenities
- Young, active communities support walkability



### Regional Connections (Biggest Challenges)

- Priorities for connections are not at county borders; local jurisdictions are making connections within, not regionally
- Providing alternative modes of transportation is important within communities
- Unable to access destinations within the community as pedestrians
- Unable to access destinations outside of the community as pedestrians
- Lack of pedestrian connections to employment centers
- Lack of pedestrian connections between areas of heavy infrastructure
- Lack of regional trail connections
- Funding disparities between urban, suburban, and rural communities makes it difficult to create regional connections
- Lack of pedestrian connections to suburban and rural communities
- Lack of uniform pedestrian ordinances
- Equitable development
- Cooperation between jurisdictions
- Competing local priorities

### Regional Connections (Strongest Assets)

- New trails with quality pedestrian infrastructure
- Existing regional trail systems
- Strong regional mayors and local advocates create momentum in communities that translate to making regional connections between local trail networks.
- Public transit providers for regional mobility
- Regional trails, such as the National Road Heritage Trail, are high statewide priorities that will be great for tourism, recreation, and transportation



## Exercise #2 - Plan Elements

When you consider the future of the region as related to walkability, what priorities should the pedestrian plan focus on? The number in parentheses represents the number of votes cast for each plan element (Fig. AC-1).

### Exercise #2 PLAN ELEMENTS

When you consider the future of the region as related to walkability, what priorities should the pedestrian plan focus on?



*Instructions:*

- Circle the words or phrases that are most important to you or add your own at the end of the list.
- Draw a line through the words or phrases that are not a top focus of the plan.
- Do nothing to words or phrases that you feel neutral about.

*Policy and Programming*

Safe Routes to School	Walking Safety Campaign
Safe Routes for Seniors Program	Equitable Programming Initiatives
Education and Awareness Coordination	Pedestrian Network Mapping
Maintenance Plan	Zero Pedestrian Fatalities
Increase Visual Presence of Law Enforcement	Other:

*Physical Design*

Sidewalks	Connections to Public Transit
Multi-Use Paths	Pedestrian Safety Countermeasures
Separated Bicycle/Pedestrian Paths	Other:
Traffic Calming Measures	

*Places and Destinations*

Population Centers	Recreational Facilities
Regional Connections	Community to Community
Entertainment Facilities	Educational Facilities
Medical Services	Other:

Figure AC-1. | Steering Committee Meeting #1, Exercise #2: Plan Elements.

### Policy and Programming

- (7) Pedestrian Network Mapping
- (6) Safe Routes to School
- (5) Equitable Programming Initiatives
- (5) Zero Pedestrian Fatalities
- (4) Increase Visual Presence of Law Enforcement
- (4) Safe Routes for Seniors Program

- (3) Education and Awareness Coordination
- (1) Maintenance Plan
- (1) Plan for Missing Connections
- (1) System Development
- (0) Walking Safety Campaign

### Physical Design

- (11) Multi-Use Paths
- (10) Sidewalks
- (10) Traffic Calming Measures
- (8) Separated Bicycle/Pedestrian Paths
- (7) Connections to Public Transit
- (7) Pedestrian Safety Countermeasures
- (2) Regional Adoption of NACTO Guidelines
- (1) Pedestrian Connectivity to Employment Facilities

### Places & Destinations

- (8) Educational Facilities
- (7) Medical Services
- (7) Population Centers
- (6) Employment Facilities
- (6) Regional Connections
- (5) Community to Community
- (5) Recreational Facilities
- (3) Entertainment Facilities
- (3) Grocery Facilities

*Exercise #3 - Outcomes*

What would be the best results and outcomes for the regional pedestrian plan as related to your community (Fig. AC-2)?

Results/Outcomes

- Establish funding priorities for projects
- Create a document that influences the decision-making of elected officials
- Economic development (return on investment)
- Set Regional NACTO Standards
- Create a web network of regional pedestrian connectivity
- Equitable regional project prioritization
- Create a comprehensive pedestrian plan that is fiscally achievable with funding sources to implement the plan
- Create a points/rewards/incentives program for local projects that implement the plan
- Objective connection between goals, objectives, and recommendations

**Exercise #3 OUTCOMES** 

What would be the best results and outcomes for the regional pedestrian plan as related to your community?

*RESULTS:*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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*OUTCOMES:*

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\_\_\_\_\_

Figure AC-2. | Steering Committee Meeting #1, Exercise #3: Outcomes.

# PLEASE SIGN IN!

Project \_\_\_ MPO Regional Pedestrian Plan Steering Committee 1 \_\_\_

Meeting Date: \_\_\_ November 9<sup>th</sup> 2018 \_\_\_

NAME	ORGANIZATION	PHONE NUMBER	EMAIL
Stacie Hurtle	Marron County Public Health Dept	317-221-2104	shurtle@marionhealth.org
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KATHLEEN BETHAM	MPO		
Anna Brennan	MPO		
Mama Waincraft	TRACS		
Sam Wiser	TRACS		

## Steering Committee Meeting #2

March 21, 2019

Central Indiana Community Foundation

615 N. Alabama St. #119

Indianapolis, IN 46204

### Meeting Summary

The second steering committee meeting was held on March 21, 2019. Eight of the twenty-four members attended. During this meeting, the committee was provided with project updates, the plan goals and objectives, and next steps. Jen Higginbotham (MPO) introduced the meeting and provided a brief overview of the MPO Pedestrian Plan.

Following the introduction to the plan, the second part of the meeting, presented by Ron Taylor (TSWDG) included the public engagement materials, results of the first public survey, and results of the last steering committee meeting. A total of 283 people responded to the first public survey, which focused on determining how people are walking, identifying where people want to walk, learning what is good about current walking conditions, examining challenges to walking, and identifying recommendations for improvements. General survey outcomes found that:

- 77% indicated that they walked 30 minutes per day;
- 87% walk for exercise, more than walking to a destination;
- 58% indicated their community has a good walking network;
- 69% said they feel threatened when walking, from both motorist behaviors as well as “unsafe pedestrian facilities”; and
- major intersections and street corridors were identified as locations for improvements.

Exercises from the first steering committee meeting were evaluated and summarized prior to the meeting. In Exercise One: Visioning, members were asked what the biggest challenges and strengths were for their communities related to pedestrian issues. Results included mobility and accessibility, safety, health and

education, and regional connections. In Exercise Two: Plan Elements, members were asked what priorities the plan should focus on. Results included policy and programming, physical design, and places and destinations. In Exercise Three: Outcomes, members were asked what the best results and outcomes would be for the regional pedestrian plan as related to their communities. A few of the results and outcomes included establishing funding priorities for projects, setting regional standards, and creating equitable regional project prioritization.

The third part of the meeting introduced the plan vision and goals and objectives developed based on feedback from the first steering committee meeting. Steering committee members were asked to participate in exercises to verify goals and objectives using the PLAN criteria, where “P” is for priority (which goal is the highest regional priority), “L” is for lifespan (which goal is the most achievable over the lifespan of the plan), “A” is for appropriate (which goal is the most regionally appropriate), and “N” is for needs (which goal best meets current and future pedestrian needs).

In Exercise 1: Draft Objectives, members were asked to evaluate whether or not the objectives fulfill the PLAN criteria. In two groups, members were given “library time” to read through and complete the exercises individually. After “library time,” members were asked to report back to their respective groups on the “big issues” for each goal, led by Ron Taylor (TSWDG) and Scott Siefker (TSWDG). These big issues were documented by the consultant team and used to revise the Draft Goals and Objectives.

In Exercise 2: Goal Prioritization, members were asked to prioritize goals based upon their relative urgency and importance. Using two green dots and one red dot for each PLAN criteria, they were asked to indicate which two goals they thought were the highest priority and which goal they thought was the lowest priority. The results were documented by the consultant team.

Before informally closing the meeting, the public meeting dates were discussed.

### Exercise #1 - Draft Objectives

Do these objectives fulfill the PLAN criteria (Fig. AC-3)?

- Objectives were largely found to fulfill the PLAN criteria.
- Minor changes to wording were suggested to make objectives more appropriate.
- Some objectives were eliminated or combined to eliminate redundancies.

### Exercise #2 - Goal Prioritization

Which of the following goals is the most urgent and important (Fig. AC-4)?

#### P - Priority

- (5) Goal #1 - Connectivity
- (4) Goal #2 - Safety
- (3) Goal #3 - Wellness & Quality of Life
- (2) Goal #6 - Community Benefit
- (0) Goal #4 - Implementation
- (-7) Goal #5 - Experience Enrichment

#### L - Lifespan

- (5) Goal #1 - Connectivity
- (3) Goal #6 - Community Benefit
- (0) Goal #2 - Safety
- (0) Goal #3 - Wellness & Quality of Life
- (0) Goal #5 - Experience Enrichment
- (-4) Goal #4 - Implementation

#### A - Appropriate

- (6) Goal #2 - Safety
- (5) Goal #1 - Connectivity
- (2) Goal #3 - Wellness & Quality of Life
- (2) Goal #6 - Community Benefit
- (-1) Goal #4 - Implementation
- (-3) Goal #5 - Experience Enrichment

**EXERCISE #1**  
**Draft Objectives**

Place a check in the "Yes" box if you think the objective **FULLFILLS** the PLAN criteria. Place an "X" in the "No" box if you think the objective **DOES NOT FULLFILL** the PLAN criteria. Please provide additional feedback regarding any "No" answers.

**Regional PEDESTRIAN PLAN**  
INDIANAPOLIS MPO

**GOAL #1**  
**Connectivity**

Create a network of convenient, safe, and well-designed pedestrian facilities throughout the MPO's planning area.

Do you agree with these objectives?  
YES NO

**OBJECTIVES**

- Establish a "web" network of convenient, safe, and well-designed pedestrian facilities that link all local and regional systems and community destinations.
- Expand all Central Indiana projects for opportunities for regional connections.
- Enhance pedestrian connections to transit.
- Promote the use of pedestrian facilities to relieve traffic congestion.
- Improve pedestrian safety and access to schools and job centers.
- Encourage the expansion of existing pedestrian infrastructure across jurisdiction lines to targeted growth areas through coordination between utility providers, municipalities, and the counties.
- Retrofit existing pedestrian facilities and infrastructure to comply with current safety standards.

Do you feel one or more of the objectives **DOES NOT FULLFILL** the PLAN criteria? Please provide additional feedback below:

MPO

Figure AC-3. | Steering Committee Meeting #2, Exercise #1: Draft Objectives.

N - Needs

- (6) Goal #2 - Safety
- (5) Goal #1 - Connectivity
- (1) Goal #3 - Wellness & Quality of Life
- (1) Goal #6 - Community Benefit
- (0) Goal #4 - Implementation
- (-5) Goal #6 - Community Benefit

**EXERCISE #2**  
**Goal Prioritization**

Which of the following goals is the most urgent and important? Using the PLAN criteria, place a green dot in the corresponding blue box of the goal you think best meets the statement for each of the criteria.



**GOAL #1**  
**Connectivity**

*Create a network of convenient, safe, and well-designed pedestrian facilities throughout the MPO's planning area.*

**GOAL #2**  
**Safety**

*Create safe and inviting pedestrian infrastructure.*

**GOAL #3**  
**Wellness & Quality of Life**

*Create a pedestrian network that promotes walking, increases the opportunity for non-motorized transportation, and connects to destinations meaningful to residents.*

**GOAL #4**  
**Implementation**

*Develop projects that maximize pedestrian connections and prioritize the greatest overall connectivity within the region.*

**GOAL #5**  
**Experience Enrichment**

*Develop projects that help elevate the pedestrian experience in the regional planning area.*

**GOAL #6**  
**Community Benefit**

*Recognize and develop projects that provide additional community benefit beyond just the benefits of walking.*

	<b>P</b> <b>PRIORITY</b> <small>Is this goal the highest regional priority?</small>	<b>L</b> <b>LIFESPAN</b> <small>Is this goal the most achievable over the lifespan of the plan?</small>	<b>A</b> <b>APPROPRIATE</b> <small>Is this goal the most regionally appropriate?</small>	<b>N</b> <b>NEEDS</b> <small>Does this goal best meet current and future pedestrian needs?</small>
GOAL #1 Connectivity				
GOAL #2 Safety				
GOAL #3 Wellness & Quality of Life				
GOAL #4 Implementation				
GOAL #5 Experience Enrichment				
GOAL #6 Community Benefit				

Figure AC-4. | Steering Committee Meeting #2, Exercise #2: Goal Prioritization.



## Steering Committee Meeting #3

September 11, 2019

Indianapolis Public Library - College Avenue Branch  
4180 N College Ave  
Indianapolis, IN 46205

### Meeting Summary

The third steering committee meeting was held on September 11, 2019 at the College Avenue Branch of the Indianapolis Public Library. To make the meeting more accessible, the presentation was also offered via web conferencing. Danielle Gerlach (MPO) monitored the live feed, and viewers were encouraged to reach out with any comments, questions, or concerns. Ten of the twenty-four steering committee members attended the meeting, with five attending in person and five attending via web conferencing.

During this meeting, the committee was provided with project updates, an overview of the prioritization process, and next steps. Jen Higginbotham (MPO) introduced the meeting and provided a brief overview of the MPO Regional Pedestrian Plan project.

Following an introduction to the plan, Ron Taylor (TSWDG) presented the project updates, including the results of the last steering committee meeting and a review of public engagement. In Exercise One: Draft Objectives, members were asked if the objectives fulfilled the PLAN criteria (Priority, Lifespan, Appropriate, and Needs) (Fig. AC-5). Objectives were largely found to fulfill the PLAN criteria. Minor changes to wording were suggesting to make the objectives more appropriate, and some objectives were eliminated or combined to eliminate redundancies. In Exercise Two: Goal Prioritization, members were asked to use the PLAN criteria to determine which of the goals was most urgent and important. Connectivity was found to be the most urgent and important for Priority and Lifespan, while Safety was found to be the most urgent and important for Appropriate and Needs.

Public engagement results, including a summary of Public Survey #2, Facebook Post engagement data, and the Facebook Live Event were introduced to the steering committee. Public Survey #2 was made available through MetroQuest and remained open between May 1, 2019

and June 21, 2019. A total of 897 people responded to the second public survey, which focused on determining goals and objectives rankings and areas of interest and prioritization. Survey respondents were asked to rank each of the goals from lowest to highest.

Average ratings in order from the highest to the lowest rating are as follows:

- Safety
- Connectivity
- Wellness/Quality of Life
- Community Benefit
- Collaboration/Education

Survey respondents were also asked to rate their top five



Figure AC-5. | Ron Taylor (TSWDG) presents Exercise #1: Prioritization.

areas of interest from most important to least important. Average ratings in order from the highest to the lowest rating are as follows:

- Safety
- Location
- Equity
- Health and Wellness
- Comfort

Posts on the Indianapolis MPO’s Facebook page promoting Public Survey #2 and the Facebook Live Event were boosted three times to reach a wider audience. The Facebook Live Event on May 23, 2019 included a quick presentation and live Q and A about the project. General engagement results found that:

- 159 people engaged in the posts
- 2,253 people were reached by the posts
- 57.9% of the audience were women
- 65.9% of people engaged in the newsfeed via the mobile app

The second part of the meeting introduced the priority investment areas indices and ranking strategies. Priority investment areas indices include Health, Pedestrian Safety, Walking Comfort, Equity, and Pedestrian Demand. A series of heat maps were created for each of the five priority investment areas indices using data-driven measures to establish areas of need. The priority investment areas indices maps were used in conjunction with a series of ranking strategies in order to ensure that areas with the greatest need are funded first. The three prioritization approaches, including Public Input, the Marion County Walkways Plan, and Best Practices, use quantitative data (the priority investment areas indices) to help identify which areas should be funded first. A simple point system of 1-5 was used to establish rank.

Steering committee members were asked to participate in Exercise One: Prioritization to create their own ranking strategy for prioritization using the priority investment areas indices. Members were given “library time” to read through and complete the exercise individually.

After “library time,” members were asked to discuss how they selected the priority investment areas indices of greatest importance. Web conferencing participants were asked to submit their completed worksheets via email. A summary of the exercise is as follows:

*Exercise One: Prioritization*

Based on feedback from this exercise, the ratings for each of the five indices were averaged to establish a ranking system based on Steering Committee feedback (Fig. AC-6). Based on this exercise, the prioritization results are as follows:



Figure AC-6. | Steering Committee Meeting #3, Exercise #1: Prioritization.

### Ranking Strategy: Steering Committee

- (+27 Points) Pedestrian Safety
- (+21.5 Points) Equity
- (+18.5 Points) Health
- (+13 Points) Pedestrian Demand
- (+10 Points) Walking Comfort

Exercise One: Prioritization was followed by a brief overview of next steps, and an additional questions/comments period where members were invited to discuss the prioritization process and review the boards in detail (Fig. AC-7).

Additional questions and comments that arose from this discussion are as follows:

- Can we include additional measures for Health? Consider including USDA food deserts and CDC BRFSS data, if available.
- Can we include additional measures for Walking Comfort? Consider including lane widths, speed limits, and functional classifications data, if available.

- Can we include additional measures for Equity? Consider using housing stock, zero-car household, and income-based data, if available
- It is difficult to visualize the maps at this scale. Consider introducing an online interactive mapping dashboard so that people are able to zoom in on their individual neighborhoods and understand prioritization at a community level.
- Is the prioritization process established by the MPO Regional Pedestrian Plan to be used to help rank projects as they come across as part of the Transportation Improvement Plan (TIP)? The intent of the MPO Regional Pedestrian Plan is to serve as a resource toolkit for communities to prioritize their own projects. Additional recommendations for communities on where to invest their dollars for sidewalk projects will also be included.
- Consider overlaying the three ranking strategies maps to discover what is different about them.



Figure AC-7. | Exercise One: Prioritization was followed by a brief overview of next steps, and an additional questions/comments period where members were invited to discuss the prioritization process and review the boards in detail.

# PLEASE SIGN IN!

Project: MPO Regional Pedestrian Plan Steering Committee 3

Meeting Date: September 11, 2019

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Someone from AAPF (no name - online)			
Joyka Galbraith (online)	McClordsville		
Shyrle (online)			
Sam Waiser	TSUDG		
Ron Taylor	TSUDG		
Danielle	MPO		
Ben Higginbotham	MPO		

## Steering Committee Meeting #4

November 19, 2019

Indianapolis Public Library - College Avenue Branch

4180 N College Ave

Indianapolis, IN 46205

### Meeting Summary

The fourth steering committee meeting was held on November 19, 2019 at the College Avenue Branch of the Indianapolis Public Library, where eleven of the twenty-nine steering committee members attended the meeting. During this meeting, the steering committee was provided with project updates, the composite ranking strategy and priority improvement projects, the draft Regional Pedestrian Plan, and next steps.

Ron Taylor (TSWDG) presented the project update, including a review of the last meeting and prioritization mapping updates. In Exercise One: Prioritization, members were asked to create their own ranking strategy using the priority investment area indices, including pedestrian safety, equity, wellness, pedestrian demand, and walking comfort. Based on feedback from this exercise, the ratings for each of the five indices were averaged to establish a ranking system based on Steering Committee Input. The prioritization results were as follows:

- Pedestrian Safety
- Equity
- Wellness
- Pedestrian Demand
- Walking Comfort

General feedback from steering committee members included:

- Consider including additional measures for the priority investment area indices, including equity, wellness, and walking comfort.
- Consider introducing an online interactive mapping dashboard to allow people to examine priorities at a local scale.

- How should the pedestrian plan be used by communities and local organizations in the region?

Prioritization maps were revised based on feedback from the project steering committee. Overall changes to the maps include grid size and colorization. Grid sizes were standardized for all priority investment area indices and ranking strategies maps. For ranking strategies maps, colors were changed from a single-color gradient to five separate colors to improve readability.

Maria Wainscott (TSWDG) presented the second part of the meeting, including the composite ranking strategy and the draft Regional Pedestrian Plan (Fig. AC-8). For the composite ranking strategy, point values for preliminary ranking strategies indices were averaged to generate weighting where equal importance was placed on each approach to ensure impartiality. Preliminary

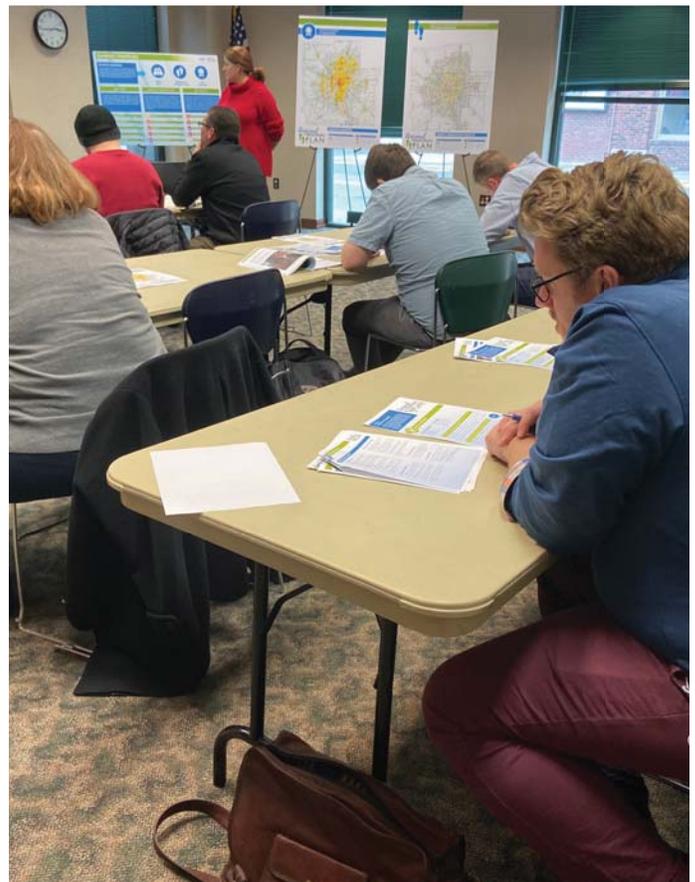


Figure AC-8. | Maria Wainscott (TSWDG) presents the second part of the meeting.

ranking strategies include public input driven, steering committee input, the Marion County WalkWays Plan priorities, and planning best practices. The prioritization results were as follows:

- Pedestrian Safety
- Equity
- Wellness
- Pedestrian Demand
- Walking Comfort

Using the composite ranking strategy map that organized pedestrian projects into five tiers of priority, the existing pedestrian infrastructure network was cross-referenced and categorized to determine where the gaps fell in the tier system (Fig. AC-9). Since no gap segments intersected with Tier 1 and Tier 5 priority areas in the composite ranking strategy map, there are no Tier 1 or Tier 5 priority projects. Priority projects fall within Tiers 2, 3, and 4. The redder the color, the higher the priority. Gaps that did not intersect with the composite ranking strategy were assigned to Tier 6.

Improvement project maps were provided for Central Indiana and the 8-county MPA, including Marion and portions of Boone, Hamilton, Hancock, Hendricks, Johnson, Morgan, and Shelby Counties.

A brief summary of the draft Regional Pedestrian Plan was provided. The pedestrian plan is organized into nine sections, including:

- Executive Summary
- Introduction
- Existing Conditions
- Visioning and Plan Development
- Public Engagement
- Prioritization
- Implementation
- Moving Forward
- Appendices



Figure AC-9. | Ron Taylor (TSWDG) introduces the final composite ranking strategy map, which organized pedestrian projects into five tiers of priority.

Plan recommendations include the pedestrian safety measures and guiding policies and procedures. Pedestrian safety measures include along the roadway and across the roadway (AC-10). Measures for along the roadway include multi-use paths, paved shoulders, sidewalks, and pedestrian amenities. Measures for across the roadway include accessible curb ramps, automated pedestrian detection, pedestrian signalization, crossing islands, curb extensions, improved right-turn lane/slip lane, marked crosswalks, pedestrian overpasses/underpasses, advance stop/yield lines and road diet.

In Exercise One: Pedestrian Safety Measures, members were asked if the pedestrian safety measures were applicable and appropriate to include as part of the Regional Pedestrian Plan, as well as if there were any additional pedestrian safety measures that should be included (Fig. AC-11). Members were given “library

time” to read through and complete the exercise individually. After “library time,” members were asked to discuss their answers. A summary of the exercise is as follows:

*Exercise One: Pedestrian Safety Measures*  
Not Applicable/Appropriate

- Right-Turn Lanes/Slip Lanes. Slip Lanes should be eliminated wherever possible to improve pedestrian safety. The design of slip lanes allows vehicles to travel quickly through crosswalks. They can encourage rolling right turns, where drivers are looking left for oncoming traffic and may not see crossing pedestrians. If slip lanes are used, they should include raised speed humps to slow vehicular traffic.

**Pedestrian Safety Measures**

**ALONG THE ROADWAY**

- Multi-Use Paths**  
Multi-use paths, or shared-use paths, are wide, paved facilities that support non-motorized users such as pedestrians, cyclists, and skaters. These paths are located along or away from the roadway and may be found in transitional areas between residential, commercial, and rural uses. They connect our communities and serve as regional recreation destinations (FHWA, 2013).
- Paved Shoulders**  
Paved shoulders are emergency stopping lanes for motorists. Shoulders are not intended for use by through traffic, and may be used by pedestrian and cyclists in areas without sidewalks or multi-use paths (FHWA, 2013). In rural areas, extra-wide shoulders separated from traffic with rumble strips may be appropriate. They may also be enhanced with colored or textured pavement to increase visibility.
- Sidewalks**  
Sidewalks are exclusive, paved facilities for people to walk, run, and play away from motorized vehicles. They are the fundamental building blocks of the regional pedestrian system and provide access to high demand destinations such as employment centers, educational facilities, public transit, medical services, grocery stores, entertainment, and for exercise. Sidewalks may be located on one or both sides of the street and are commonly located in residential and commercial areas. Sidewalks offer safety and walking comfort for pedestrians in the regional transportation network (FHWA, 2013).
- Pedestrian Amenities**  
Well-designed pedestrian environments may include pedestrian amenities such as benches, street trees, lighting, trash receptacles, and bus shelters to increase pedestrian comfort. Pedestrian amenities not only provide a place for pedestrians to stop, rest, and interact with others, they can also serve as protective barriers between the sidewalk and the street. Areas with pedestrian amenities should be maintained to prevent collection of debris, overgrowth, and potential tripping hazards to protect pedestrian mobility (FHWA, 2013).

**ACROSS THE ROADWAY**

- Accessible Curb Ramps
- Automated Pedestrian Detection
- Pedestrian Signalization
- Crossing Islands
- Curb Extensions
- Improved Right-Turn Lane/Slip Lane
- Marked Crosswalks
- Pedestrian Overpasses/Underpasses
- Advance Stop/Yield Signs
- Road Diet

Figure AC-10. Pedestrian safety measures include along the roadway and across the roadway.

**EXERCISE #1  
 PEDESTRIAN SAFETY MEASURES**

As part of the pedestrian planning process, a series of pedestrian safety measures have been provided to make Central Indiana a safer, more comfortable place to walk. Pedestrian safety measures are infrastructure treatments designed to increase pedestrian safety and reduce the number of serious injuries and fatalities on the roadway. They fall into two major categories, including along the roadway and across the roadway.

**PEDESTRIAN SAFETY MEASURES**

**ALONG THE ROADWAY**

- Multi-Use Paths
- Paved Shoulders
- Sidewalks
- Pedestrian Amenities

**ACROSS THE ROADWAY**

- Accessible Curb Ramps
- Automated Pedestrian Detection
- Pedestrian Signalization
- Crossing Islands
- Curb Extensions
- Improved Right-Turn Lane/Slip Lane
- Marked Crosswalks
- Pedestrian Overpasses/Underpasses
- Advance Stop/Yield Signs
- Road Diet

Regarding the pedestrian safety measures, are there any countermeasures you feel aren't applicable or appropriate to include as part of the MPO Regional Pedestrian Plan? If so, why?

Regarding the pedestrian safety measures, are there any additional countermeasures you feel are applicable and appropriate to include as part of the MPO Regional Pedestrian Plan?

**MPO**

Figure AC-11. Steering Committee Meeting #4, Exercise #1: Pedestrian Safety Measures

- Paved Shoulders. Paved shoulders are a “cheap out,” and can be risky in terms of implementation since traffic conditions vary throughout Central Indiana. If they are included, be explicit about acceptable design criteria. Consider using FHWA “pedestrian lane” terminology and match language in that guidance.

- Rectangular Rapid Flash Beacon (RRFB). Rectangular Rapid Flash Beacons are pedestrian-activated light beacons that increase pedestrian safety at crosswalks.
- No Right Turn on Red. Right Turns on Red (RTOR) should be prohibited where pedestrian volumes are high to increase pedestrian safety.

### Additional Measures

- HAWK Signal (High-Intensity Activated Crosswalk Beacon). HAWK beacons are protected pedestrian crossings at marked crosswalks that stop vehicular traffic to allow pedestrians to cross safely.
- Raised Pedestrian Crosswalks. Raised pedestrian crosswalks extend the sidewalk across the road and bring vehicles to the pedestrian level. They have a trapezoid-shaped cross-section and improve accessibility by keeping the crossing at a constant grade without the need for curb ramps.

Guiding policies and procedures include Complete Streets policies and support policies. Complete Streets policies ensure safe and equitable access for all users, including pedestrians, bicyclists, motorists, transit riders, and freight (Fig. AC-13). Components of Complete Streets policies include funding, planning, design, and maintenance. Support policies include parking policies, transit integration policies, safety and enforcement policies, encouragement policies, and education policies. Parking policies are those that guide the pricing, location, and availability of vehicular parking opportunities. Encouragement policies are those that guide the encouragement of walking as an active, sustainable form of transportation. Safety and enforcement policies are those that guide the enforcement of existing traffic laws to increase pedestrian safety, access, and mobility. Transit integration policies are those that are aimed at making the connections between walking and transit more convenient. Education policies are those that guide the instruction of safe and legal operation by road users and seek to reduce injuries and death through the education of residents.

In Exercise Two: Policies and Procedures, members were asked if the policies and procedures were applicable and appropriate to include as part of the Regional Pedestrian Plan, as well as if there were any additional policies and procedures that should be included (Fig. AC-14). Members were given “library time” to read through and complete the exercise individually (AC-12). After “library time,” members were asked to discuss their answers. A summary of the exercise is as follows:

#### *Exercise Two: Policies and Procedures*

##### Not Applicable/Appropriate

- Complete Streets Typologies. The best Complete Streets policies include all of these typologies (funding, planning, design, and maintenance policies). See the Smart Growth Network for additional information.



Figure AC-12. | Members were given “library time” to read through and complete the exercise.

- Vision Zero Policy. Vision Zero should be an overarching policy, not part of the support policies.
- Parking Pricing. Parking pricing may not be effective if the parking is too expensive for people to afford and it just sits unused.

- Bike Parking Policies. Utilize bike parking policies to encourage walking.
- Zoning or Land Use Policies. Robust pedestrian requirements should be included in zoning and subdivision ordinances. Integrate land use and transportation planning.

Additional Policies and Procedures

- Implementation Policies. Require all new developments or projects to include pedestrian facilities.
- Safe Routes. Expand the Safe Routes policies discussion to include parks. List all programs under the "Safe Routes" banner. See Safe Routes to Destinations for additional information.

- Non-Motorized Zones. Non-motorized zones are subsets of multi-use paths. They are recreational trails that limit the use of motorized vehicles such as segways, scooters, and mopeds. Examine speed restrictions.
- Pedestrian Safety Curriculum. Pedestrian safety curriculum is designed for teachers instructing students on safe pedestrian behaviors, including where, when, and how to walk.

Figure AC-13. Complete Streets policies ensure safe and equitable access for all users.

Figure AC-14. Steering Committee Meeting #4, Exercise #2: Policies and Procedures

# PLEASE SIGN IN!

Project: MPO Regional Pedestrian Plan Steering Committee 4

Meeting Date: November 19, 2019

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# D

## APPENDIX D: PUBLIC ENGAGEMENT





## APPENDIX D: PUBLIC ENGAGEMENT

The MPO Regional Pedestrian Plan utilized a series of public outreach tools to help publicize the plan, explain the planning process, and encourage involvement by communities in Central Indiana.

### Public Engagement

Public input was generated through a series of engagement opportunities throughout the planning process. Participants were asked to provide questions and comments to the project team to determine concerns and challenges related to walking in Central Indiana. Public engagement opportunities included the following:

- Community Outreach
- Website and Social Media Materials
- Public Engagement Materials
- Public Survey #1
- Public Survey #2
- Facebook Posts
- Facebook Live Event

### Community Outreach

In-person public feedback was solicited to engage a broad, diverse group of people from across the region, including the general public (pedestrians, bicyclists, and motorists), local organizations, and regional partners. MPO staff visited locations across Central Indiana including libraries, festivals, and city halls to allow people to take Public Survey #2 and promote the Facebook Live event.

Survey responses were collected on site using iPads. People who wanted to take the survey

later were given business cards with a link to the online survey. Locations visited by MPO staff during the month of May include:

- **City County Building Lobby**  
Indianapolis, IN (Early May)
- **Bike Commuting Lunch and Learn @ Indy Bike Hub YMCA**  
Indianapolis, IN (May 9)
- **Coffee on the Monon**  
Carmel, IN (May 10)
- **Speedway Public Library**  
Speedway, IN (May 14)
- **Ranger Days @ Indianapolis Municipal Gardens**  
Indianapolis, IN (May 15)
- **Bike to Work Day @ Monument Circle**  
Indianapolis, IN (May 17)
- **John Boner Neighborhood Center**  
Indianapolis, IN (May 20)
- **Strawberries on the Square**  
Franklin, IN (May 24)

## Website and Social Media Materials

The Indianapolis MPO used their website, existing social media accounts, and the teMPO newsletter for all feedback opportunities, including the public engagement materials, Public Surveys #1 and #2, and the Facebook Live Event.

## Public Engagement Materials

Public engagement materials were used to provide a general overview of the Regional Pedestrian Plan and promote Public Surveys #1 and #2. Materials were available to the public on the Indianapolis MPO website and distributed to project steering committee members via email. Public engagement materials included:

- Frequently Asked Questions (FAQ) sheet
- Rack Card (Fig. AD-1)
- Survey Reminder sheet
- Public Survey #1 Results
- Public Survey #2 Results

## Public Survey #1

Public Survey #1 was hosted on Survey Monkey, an online polling platform. The survey was active from Friday, November 9, 2018 to Saturday, December 15, 2018. It focused on determining the preferences and concerns of Central Indiana residents regarding sidewalks, trails, and other pedestrian facilities in their communities. A total of 283 people responded to the survey. The survey can be found in Fig. AD-2 – AD-10. A summary of survey results can be found in Fig. AD-11 - AD-26.

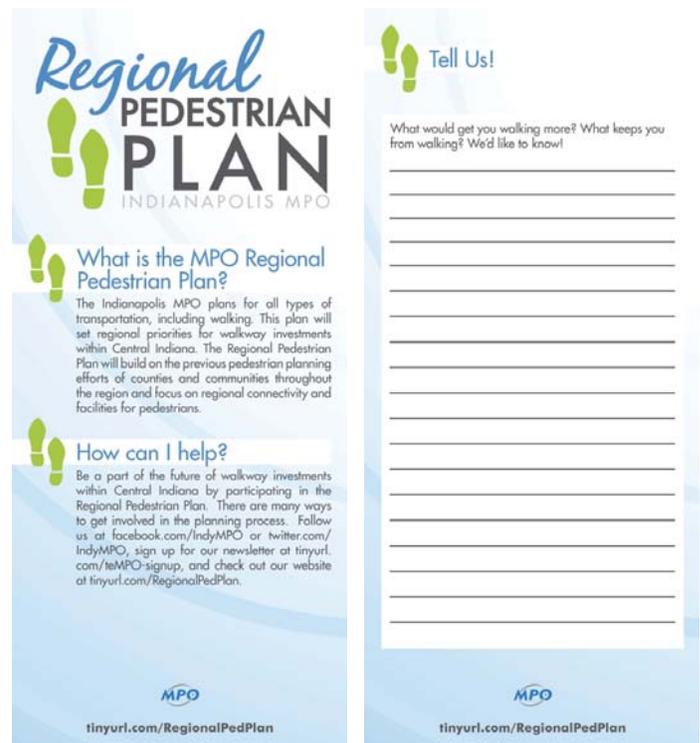


Figure AD-1. | Rack Card Front (Left); Rack Card Back (Right).

Regional



INDIANAPOLIS MPO

## MPO Regional Pedestrian Plan Survey

Welcome!

In 2016, the City of Indianapolis completed and adopted the WalkWays Plan, the Indianapolis/Marion County Pedestrian Plan that served as an update to the Marion County portion of the Regional Pedestrian Plan. This plan focused on identifying pedestrian facilities and needs within Marion County, and examined pedestrian facilities and planning with a specific focus on health and wellness. The MPO is now updating the pedestrian plan for the entire Metropolitan Planning Area (MPA) through the MPO Regional Pedestrian Plan.

This study builds upon previous pedestrian planning efforts by counties and communities within the planning area and focuses on regional connectivity and pedestrian facilities. As part of the planning efforts, this survey was developed to help the Indianapolis region become more walkable. Your responses to the following questions will help us understand your concerns and challenges related to walking in the Indianapolis region.

Thank you for your participation!



Figure AD-2. | Public Survey #1.



## MPO Regional Pedestrian Plan Survey

### Tell Us About How You Walk

\* 1. In your usual week, do you **WALK** for at least thirty (30) minutes at a time for recreation, exercise, to get to/from places, or for any other reason?

- Yes
- No

\* 2. Do you use an assistive device to move as a pedestrian?

- No
- Cane
- Walker
- Wheelchair
- Motorized Scooter/Wheelchair

\* 3. How would you rate the following destinations you **WALK** to now? Please choose one option for each reason.

	Do <b>WALK</b>	Don't <b>WALK</b>
<b>WALK</b> to/from work	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from school	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from public transit facilities (ex. bus stop)	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from medical services	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from grocery facilities	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from entertainment facilities (ex. shopping, dining)	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> for exercise	<input type="radio"/>	<input type="radio"/>

Figure AD-3. | Public Survey #1.

\* 4. If you had better pedestrian access or lived somewhere else, how would you rate the following destinations you would want to **WALK** to? Please choose one option for each reason.

	Want to <b>WALK</b>	Don't want to <b>WALK</b>
<b>WALK</b> to/from work	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from school	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from public transit facilities (ex. bus stop)	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from medical services	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from grocery facilities	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> to/from entertainment facilities (ex. shopping, dining)	<input type="radio"/>	<input type="radio"/>
<b>WALK</b> for exercise	<input type="radio"/>	<input type="radio"/>

\* 5. What are the top three (3) destinations to which you **WALK** in your immediate area?

Destination 1

Destination 2

Destination 3

\* 6. In your opinion, what makes your community a great place to **WALK**? Please choose up to three (3) options.

Good network of pedestrian facilities (ex. sidewalks, multi-use paths)  Accommodations for people with mobility limitations

I am within walking distance of my destinations  Safe and convenient crossing locations

Character of the walking environment  Good signage

Street trees or other landscaping

Other (please specify)

Figure AD-4. | Public Survey #1.



## MPO Regional Pedestrian Plan Survey

### Tell Us About Challenges to Walking

\* 7. Do you ever feel threatened for your personal safety when you **WALK**?

- Yes
- No

\* 8. Did you feel threatened for your personal safety because of the following? Please choose up to three (3) options.

- |  |   |
|--|---|
| <input type="checkbox"/> I did not feel threatened       | <input type="checkbox"/> Unsafe pedestrian facilities                                       |
| <input type="checkbox"/> Motorists behavior              | <input type="checkbox"/> Bicycles using sidewalks or trails                                 |
| <input type="checkbox"/> Motorists too close to walkways | <input type="checkbox"/> Skateboards or scooters (ex. Lime, Bird) using sidewalks or trails |
| <input type="checkbox"/> Potential for crime             | <input type="checkbox"/> People walking dogs  |
| <input type="checkbox"/> Not enough people               | <input type="checkbox"/> Loose dogs or other animals  |

Figure AD-5. | Public Survey #1.

\* 9. How would you rate the following reasons you do not **WALK** more frequently? Please choose one option for each reason.

	Major Reason	Moderate Reason	Minor Reason	No Reason
Lack of pedestrian facilities (ex. sidewalks, multi-use paths)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian facilities in poor condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inadequate accommodations for people with mobility limitations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of benches and/or other comfortable places to rest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of street trees or other landscaping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unsafe intersections or crossing locations due to lack of pedestrian signals and/or time to cross	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The speed of automobile traffic is too fast and/or the volume of automobile traffic is too high	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Destinations are too far away	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unsafe to travel with small children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unsure of the route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure AD-6. | Public Survey #1.

\* 10. In your **WALKING** environment, which types of locations do you think need the most improvements?  
Please choose up to three (3) options.

- |  |   |
|--|---|
| <input type="checkbox"/> Neighborhood streets      | <input type="checkbox"/> Near or within parks or other recreation centers     |
| <input type="checkbox"/> Major street corridors    | <input type="checkbox"/> Near schools   |
| <input type="checkbox"/> Major intersections       | <input type="checkbox"/> Near entertainment facilities (ex. shopping, dining) |
| <input type="checkbox"/> Near highway interchanges | <input type="checkbox"/> Near medical services                                |
| <input type="checkbox"/> On bridges or overpasses  | <input type="checkbox"/> Near public transit (ex. bus stop)                   |
| <input type="checkbox"/> Other (please specify)    |   |

Figure AD-7. | Public Survey #1.

Tell Us About You

11. What is your age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+
- Prefer Not to Answer

12. What is your gender?

- Male
- Female
- Prefer Not to Answer

13. Which best describes your race/ethnicity?

- White or Caucasian
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- More than one and/or other
- Prefer Not to Answer

\* 14. What is your total household income?

- Less than \$25,000
- \$25,000 to \$38,000
- \$38,001 to \$62,000
- \$62,001 to \$100,000
- \$100,001 to \$150,000
- \$150,001 or More
- Prefer not to answer

Figure AD-8. | Public Survey #1.

\* 15. How many people currently live in your household?

- 1
- 2
- 3
- 4
- 5+

\* 16. What county do you live in?

- Marion County
- Boone County
- Hamilton County
- Hancock County
- Hendricks County
- Johnson County
- Morgan County
- Shelby County
- Outside Central Indiana or Other

\* 17. If you are employed, what county is your primary job located in?

- Marion County
- Boone County
- Hamilton County
- Hancock County
- Hendricks County
- Johnson County
- Morgan County
- Shelby County
- Outside Central Indiana or Other

18. **This is an anonymous survey; your responses will be kept confidential.** Would you like to be informed of the results of this questionnaire and be given notice of public meetings for the MPO Regional Pedestrian Plan? If so, please provide your email address below. If you would like to sign up for the theMPO newsletter, the official Indianapolis MPO newsletter that includes regional project updates, upcoming educational and public input opportunities, and useful transportation news, please click here (<https://www.indympo.org/whats-underway/get-involved/tempo-newsletter>).

Email Address

Figure AD-9. | Public Survey #1.

Regional



INDIANAPOLIS MPO

## MPO Regional Pedestrian Plan Survey

Thank You!

Thank you for taking the time in helping the Indianapolis MPO make your community a better place to walk! The survey will be available online through December 1, 2019. For more information or questions about this study, please contact:

**Indianapolis Metropolitan Planning Organization**

200 East Washington Street

Suite 2322

Indianapolis, IN 46204



Figure AD-10. | Public Survey #1.

## Public Survey #1: Results

The following graphs represent a summary of the survey results from Public Survey #1. For the purpose of this plan, no open-ended responses were included, only summary charts and data tables.

**Q1: In your usual week, do you WALK for at least thirty (30) minutes at a time for recreation, exercise, to get to/from places, or for any other reason?**

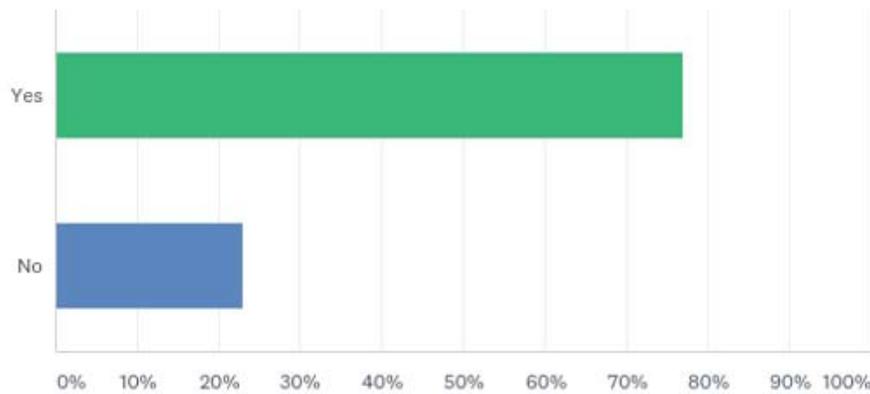


Figure AD-11. | Public Survey #1, Question 1: In your usual week, do you WALK for at least thirty (30) minutes at a time for recreation, exercise, to get to/from places, or for any other reason?

**Q2: Do you use an assistive device to move as a pedestrian?**

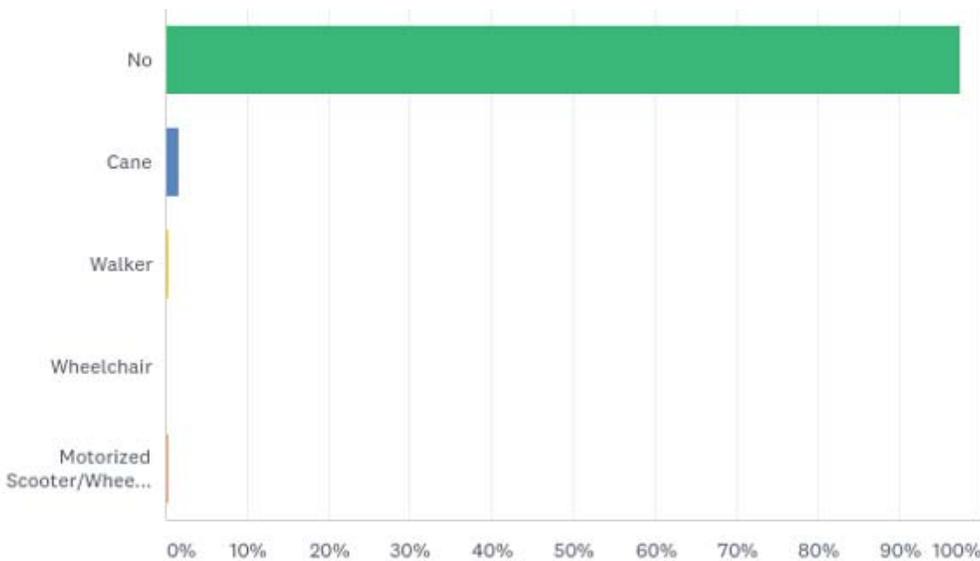


Figure AD-12. | Public Survey #1, Question 2: Do you use an assistive device to move as a pedestrian?

Q3: Tell us about the destinations you WALK to now? Please choose one option for each reason.

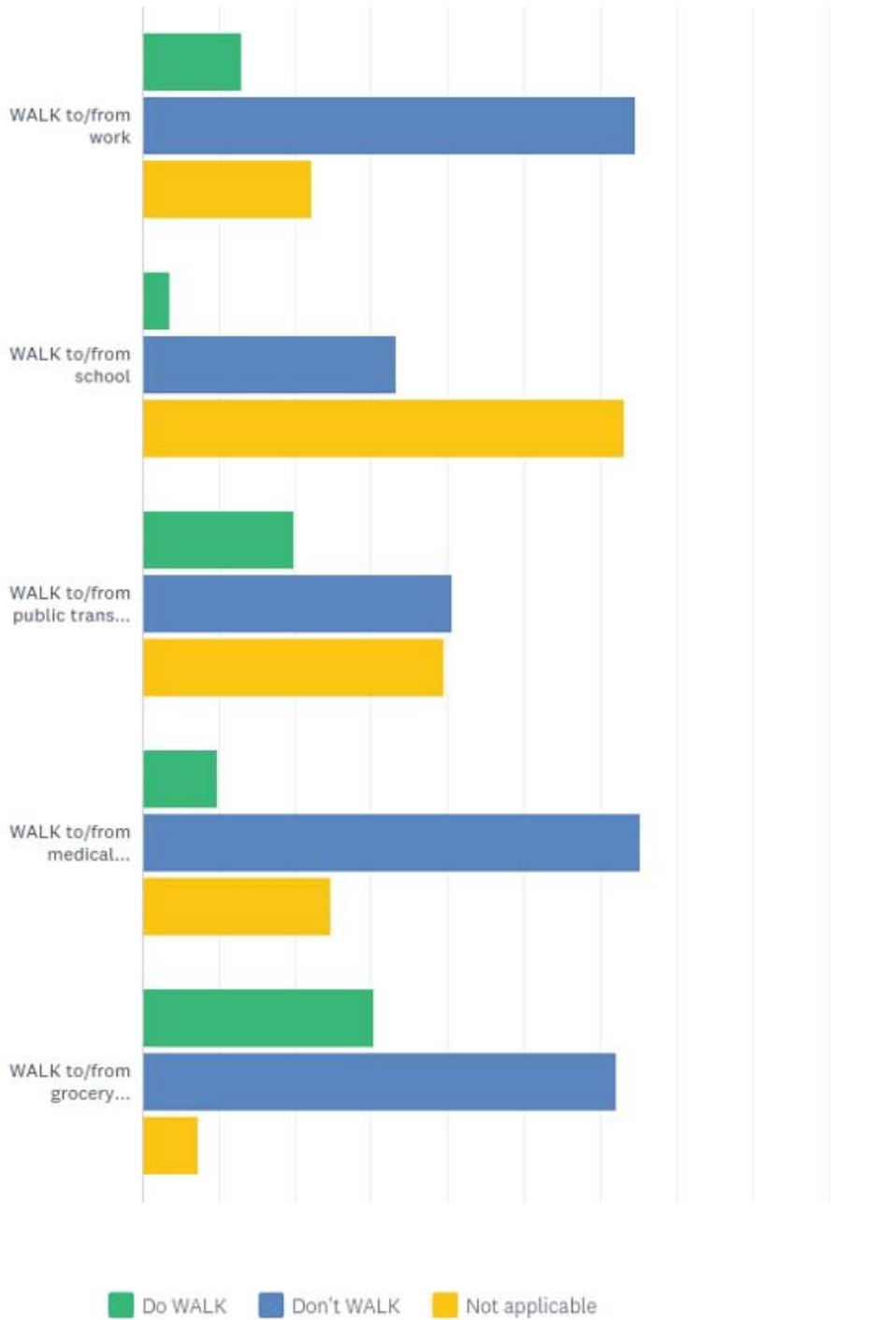


Figure AD-13. | Public Survey #1, Question 3: Tell us about the destinations you WALK to now?

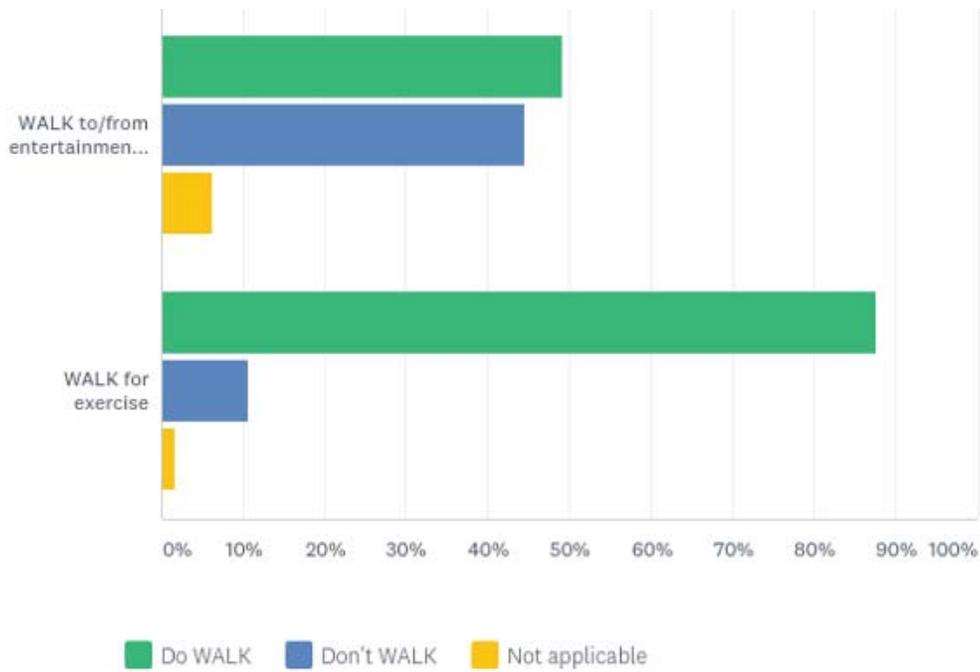


Figure AD-13. | Public Survey #1, Question 3: Tell us about the destinations you WALK to now?

Q4: If you had better pedestrian access or lived somewhere else, where would you want to WALK to?  
Please choose one option for each reason.

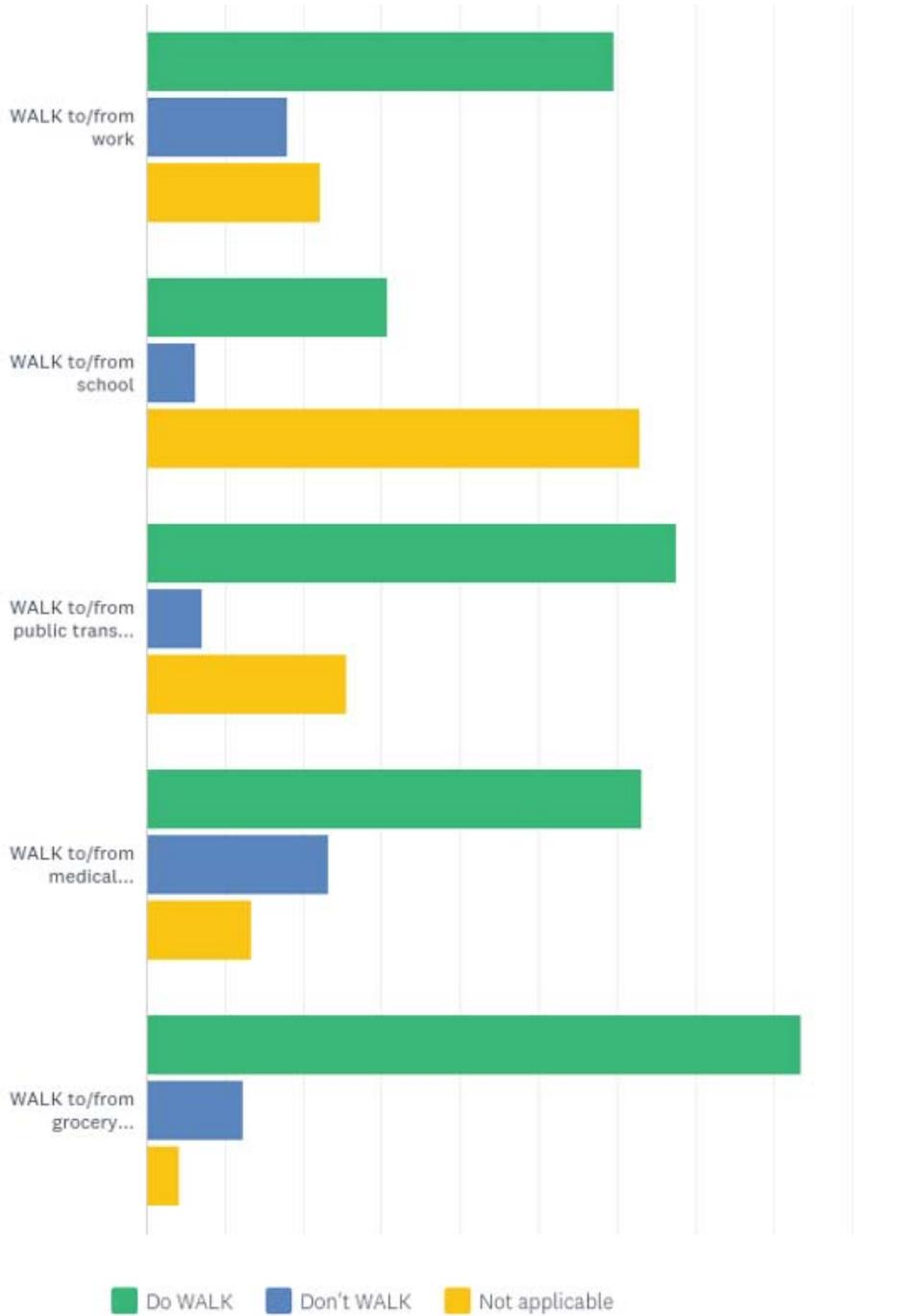


Figure AD-14. | Public Survey #1, Question 4: If you had better pedestrian access or lived somewhere else, where would you want to WALK to?

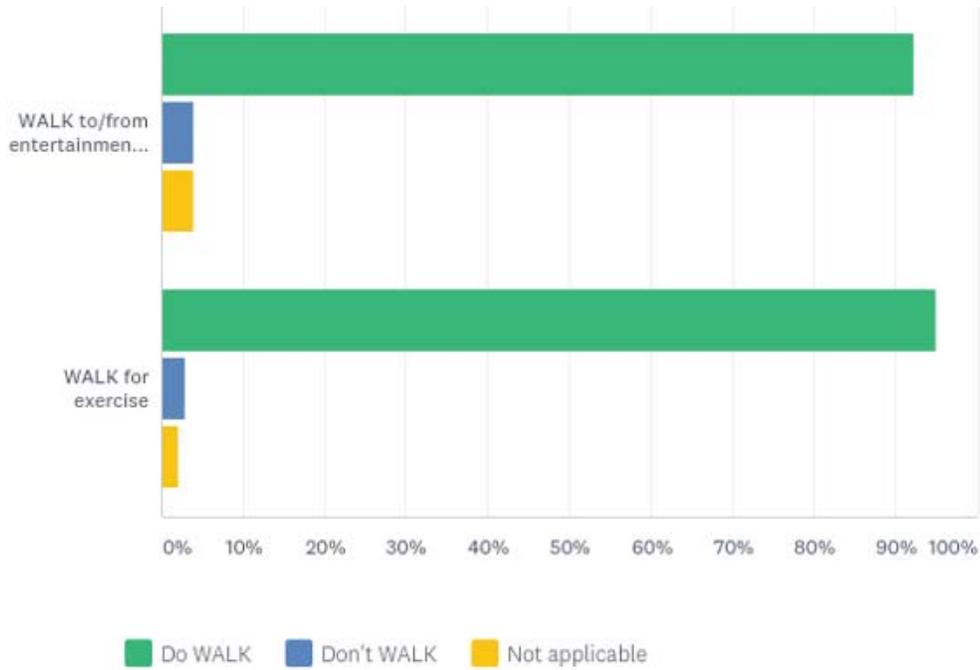


Figure AD-14. | Public Survey #1, Question 4: If you had better pedestrian access or lived somewhere else, where would you want to WALK to?

Q6: In your opinion, what makes your community a great place to WALK? Please choose up to three (3) options.

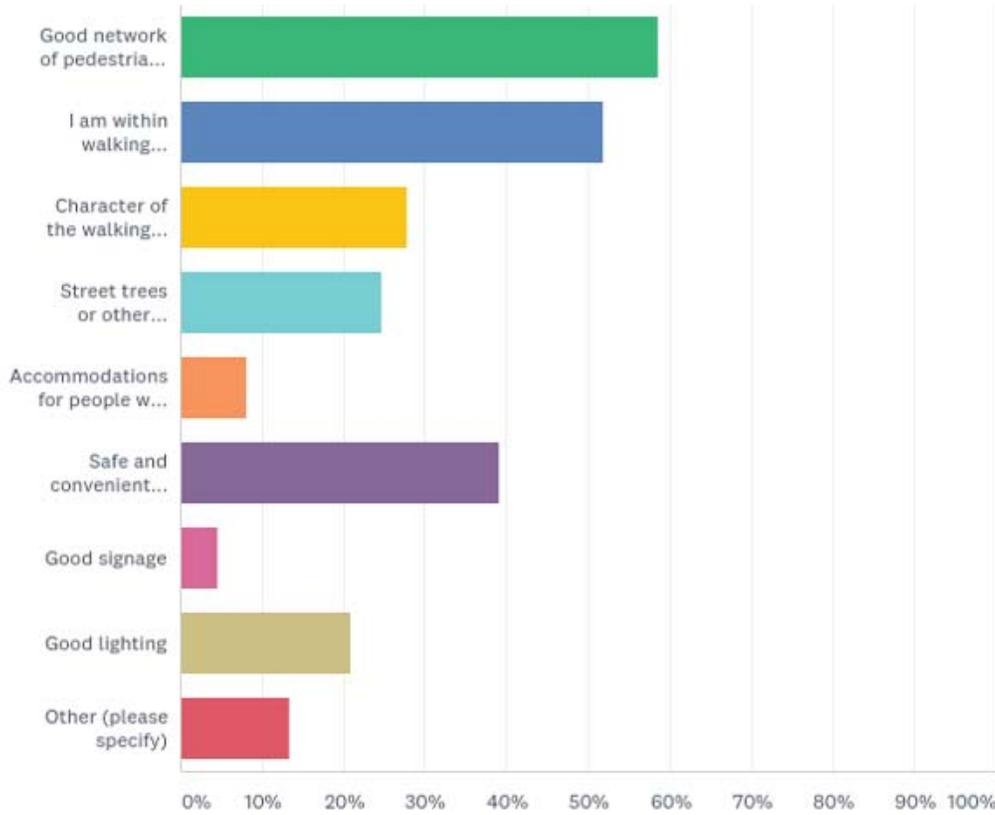


Figure AD-15. | Public Survey #1, Question 6: In your opinion, what makes your community a great place to WALK?

Q7: Do you ever feel threatened for your personal safety when you WALK?

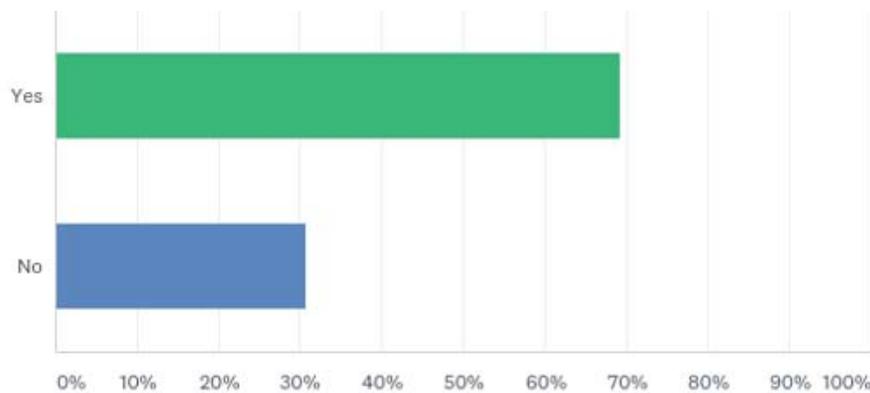


Figure AD-16. | Public Survey #1, Question 7: Do you feel threatened for your personal safety when you WALK?

Q8: Did you feel threatened for your personal safety because of the following? Please choose up to three (3) options.

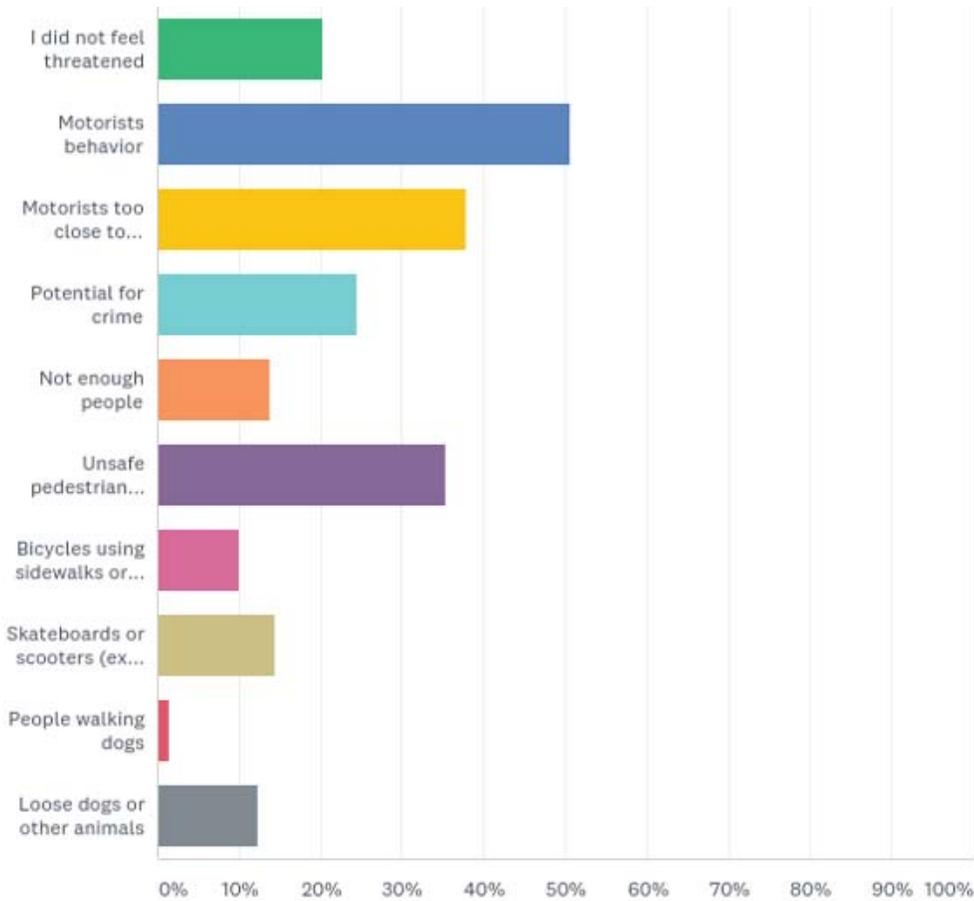


Figure AD-17. | Public Survey #1, Question 8: Did you feel threatened for your personal safety because of the following?

Q9: How would you rate the following reasons you do not WALK more frequently? Please choose one option for each reason.

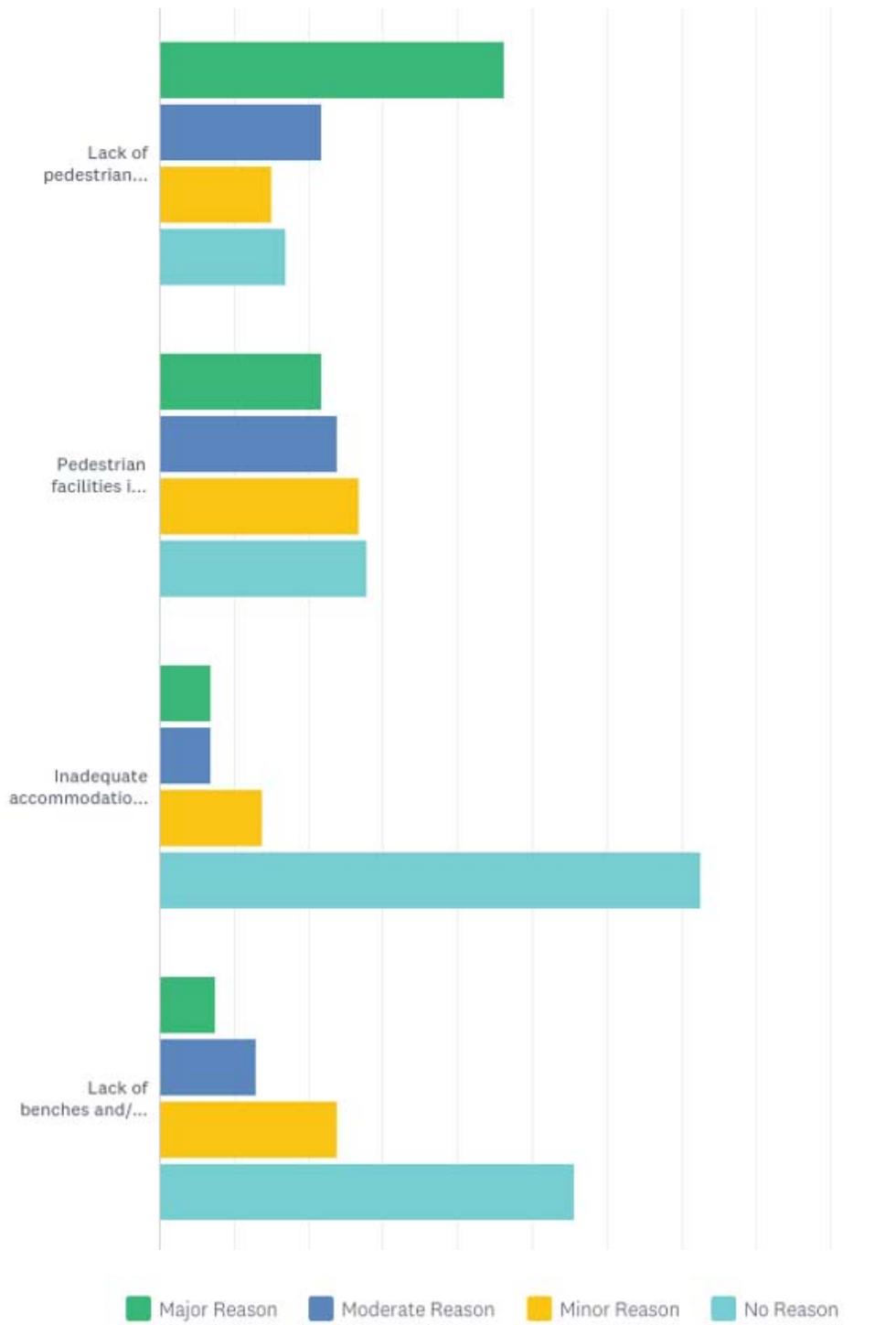


Figure AD-18. | Public Survey #1, Question 9: How would you rate the following reasons you do not WALK more frequently?

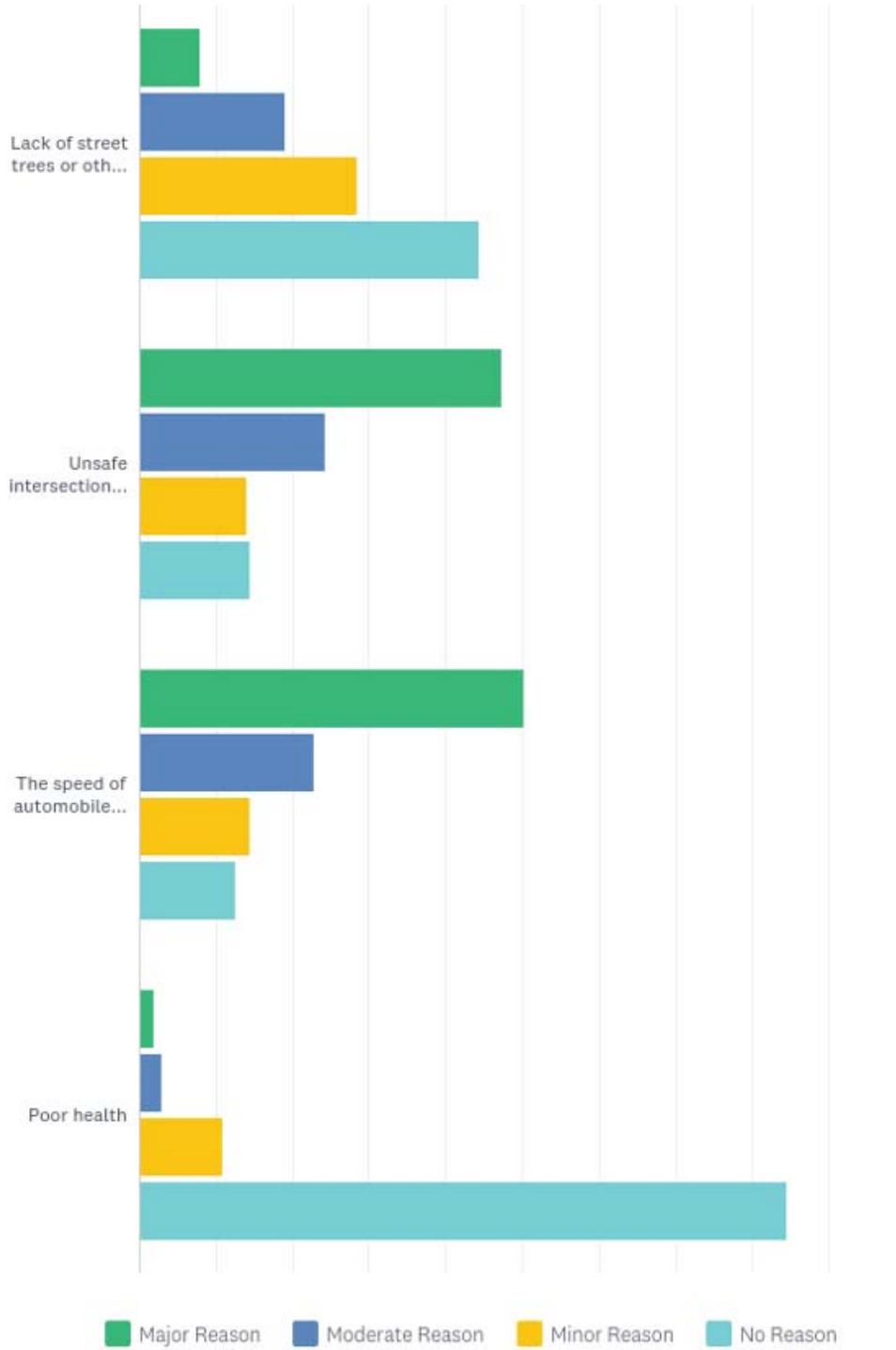


Figure AD-18. | Public Survey #1, Question 9: How would you rate the following reasons you do not WALK more frequently?

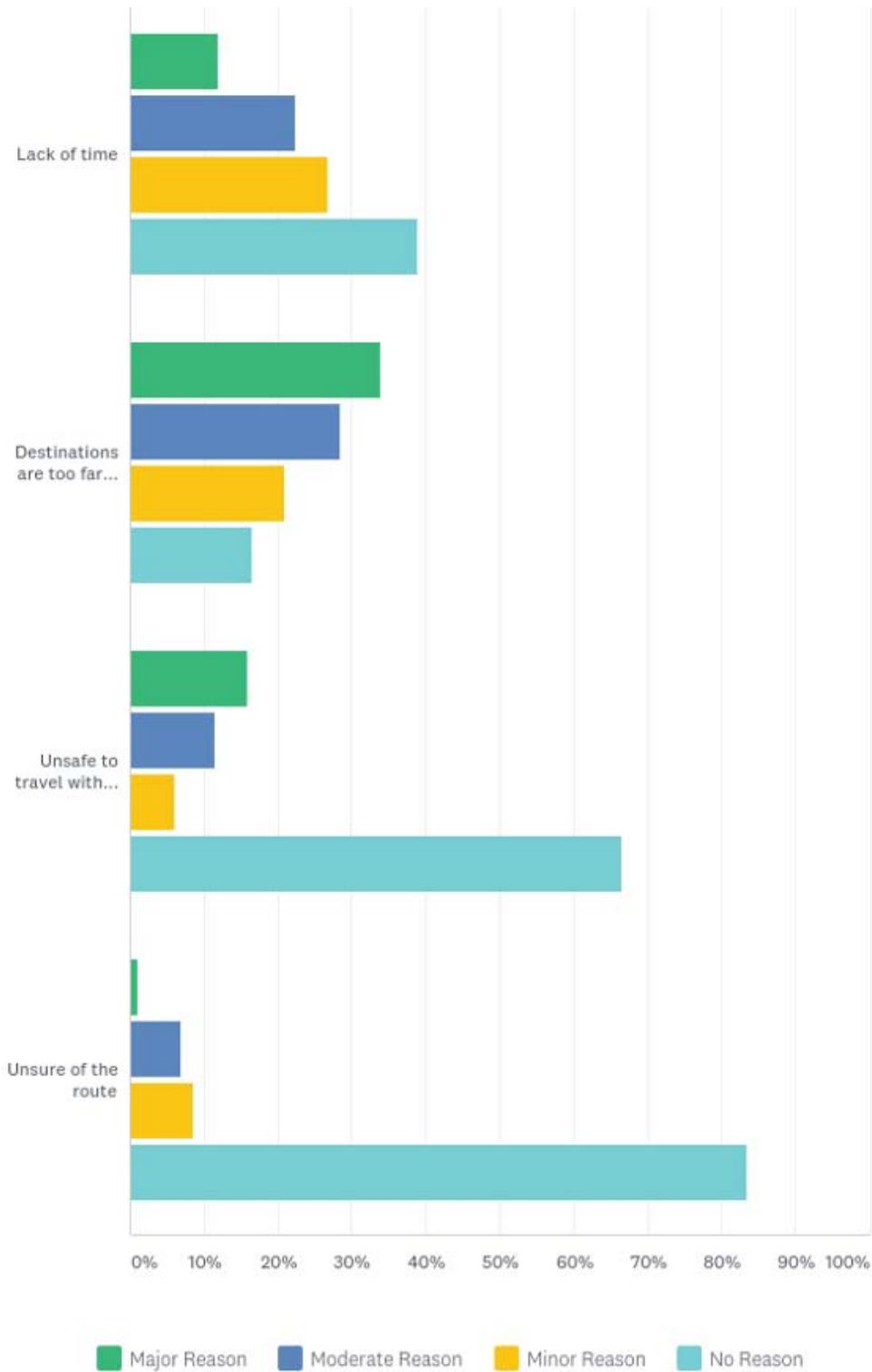


Figure AD-18. | Public Survey #1, Question 9: How would you rate the following reasons you do not WALK more frequently?

Q10: In your WALKING environment, which types of locations do you think need the most improvements?  
Please choose up to three (3) options.

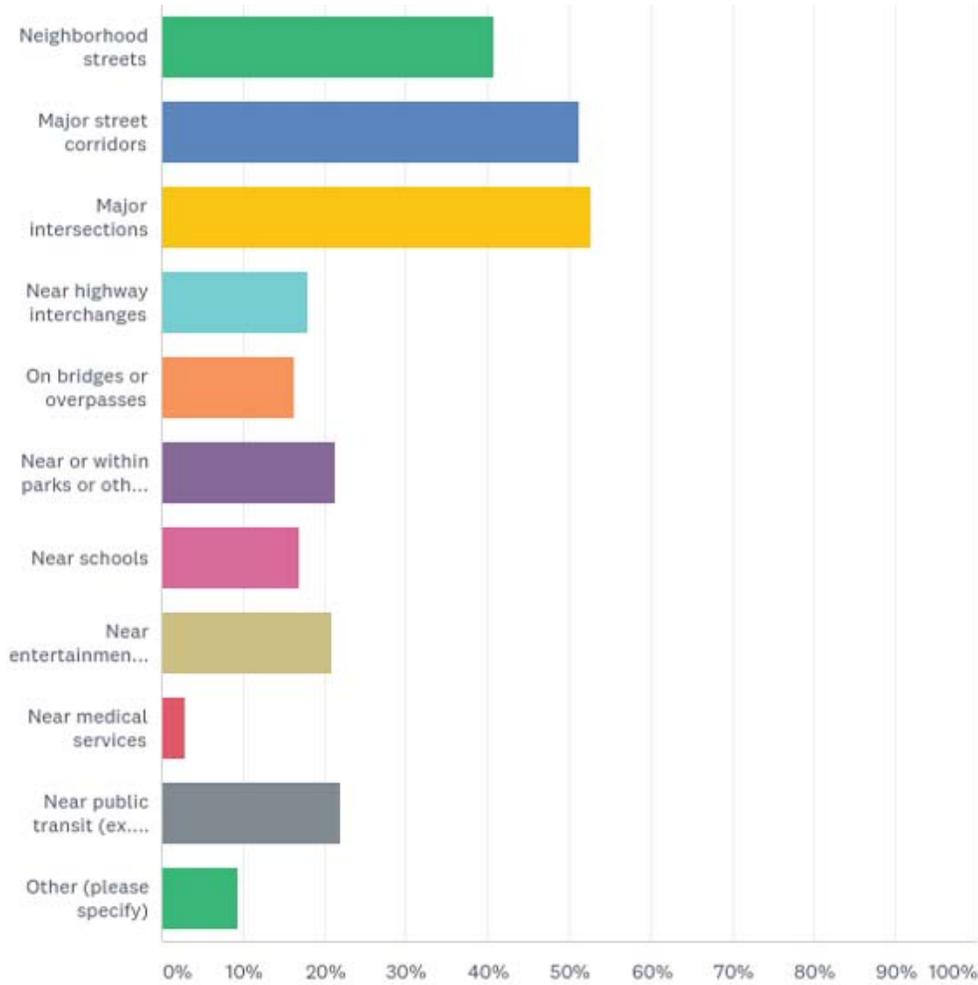


Figure AD-19. | Public Survey #1, Question 10: In your WALKING environment, which types of locations do you think need the most improvements?

## Q11: What is your age?

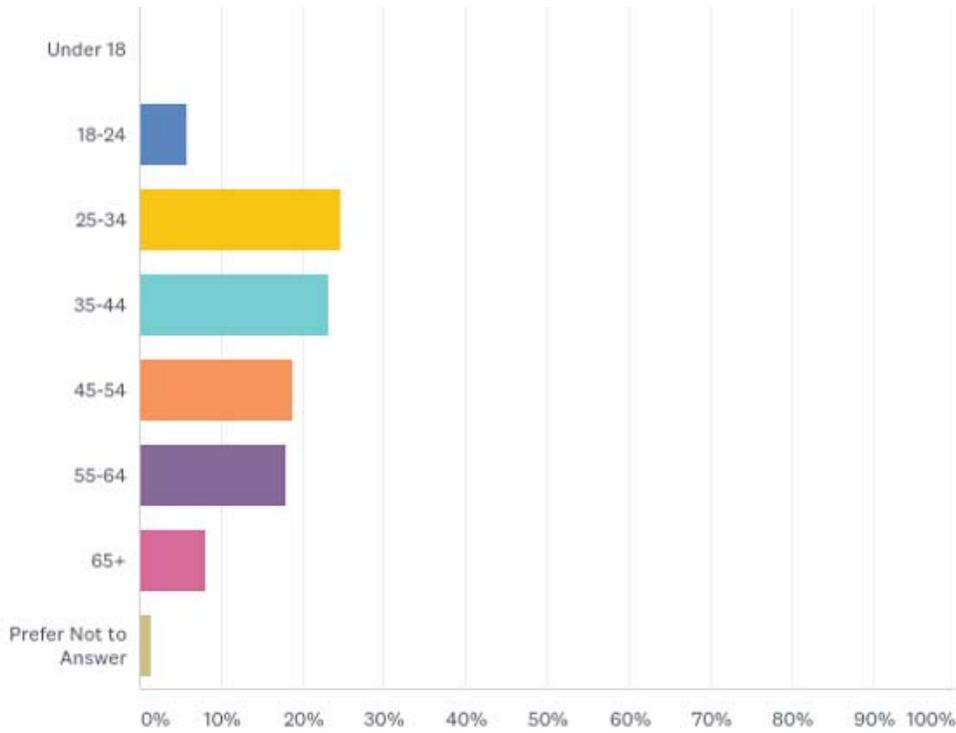


Figure AD-20. | Public Survey #1, Question 11: What is your age?

## Q12: What is your gender?

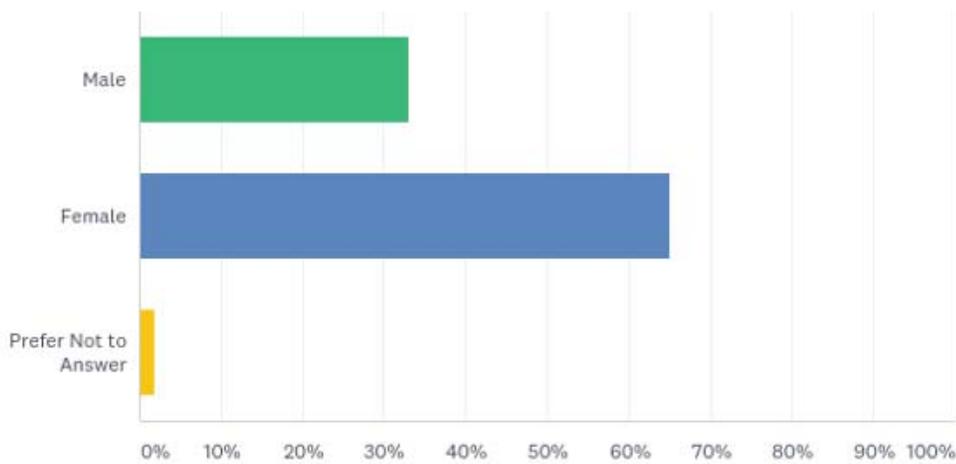


Figure AD-21. | Public Survey #1, Question 12: What is your gender?

### Q13: Which best describes your race/ethnicity?

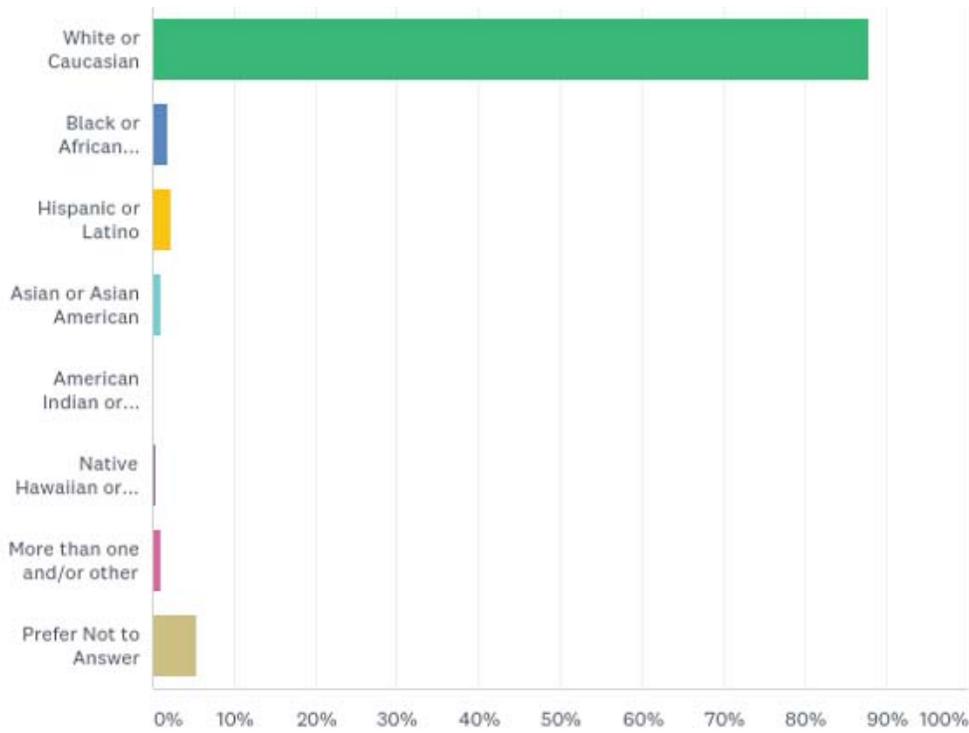


Figure AD-22. | Public Survey #1, Question 13: Which best describes your race/ethnicity?

## Q14: What is your total household income?

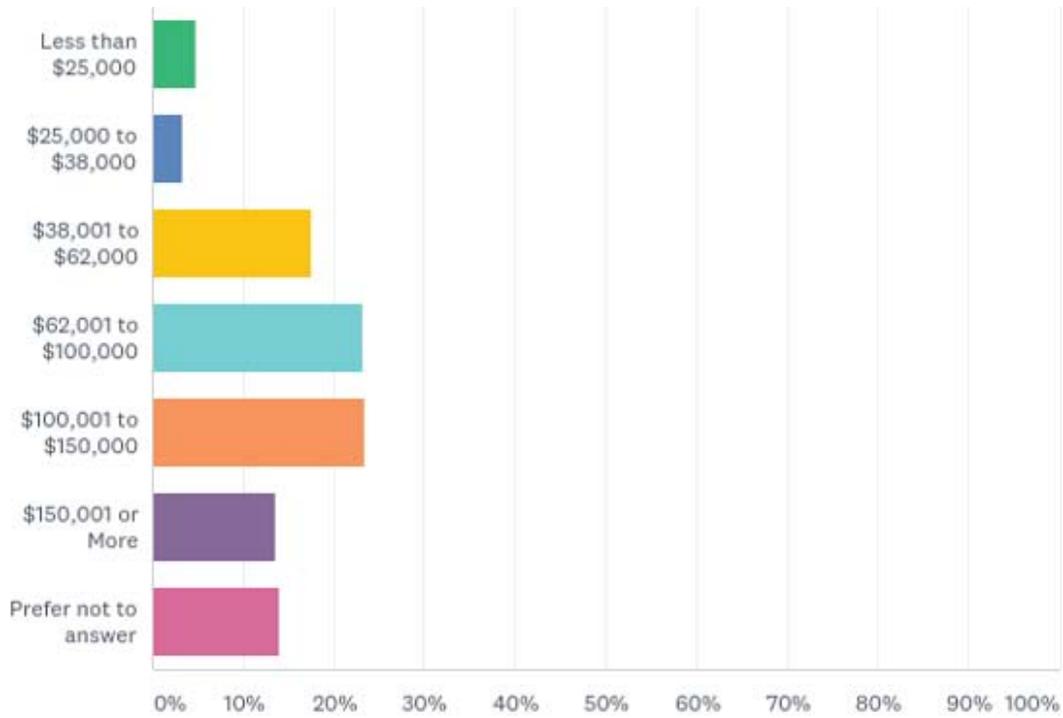


Figure AD-23. | Public Survey #1, Question 14: What is your total household income?

Q15: How many people currently live in your household?

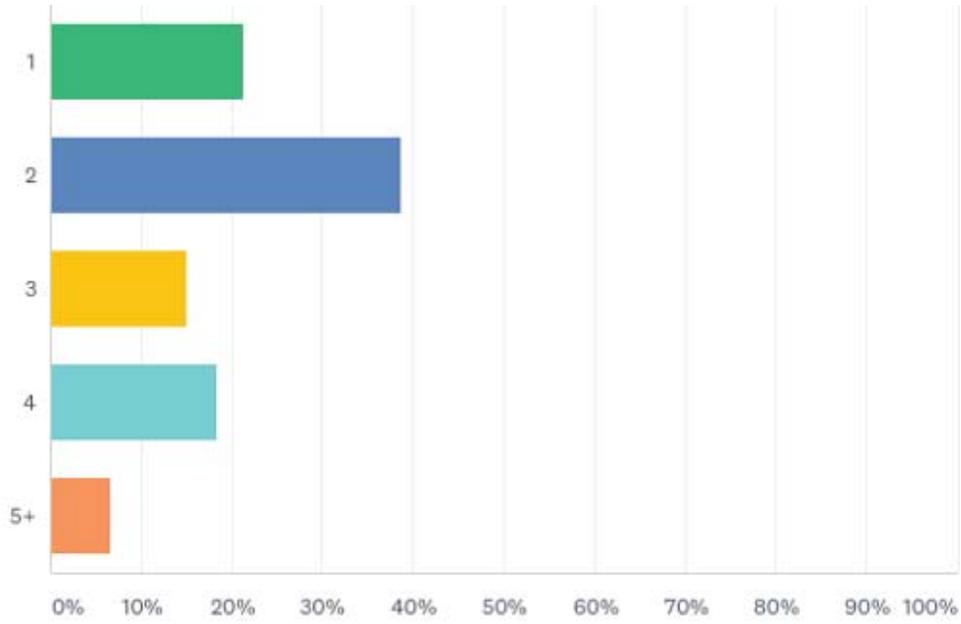


Figure AD-24. | Public Survey #1, Question 15: How many people currently live in your household?

## Q16: What county do you live in?

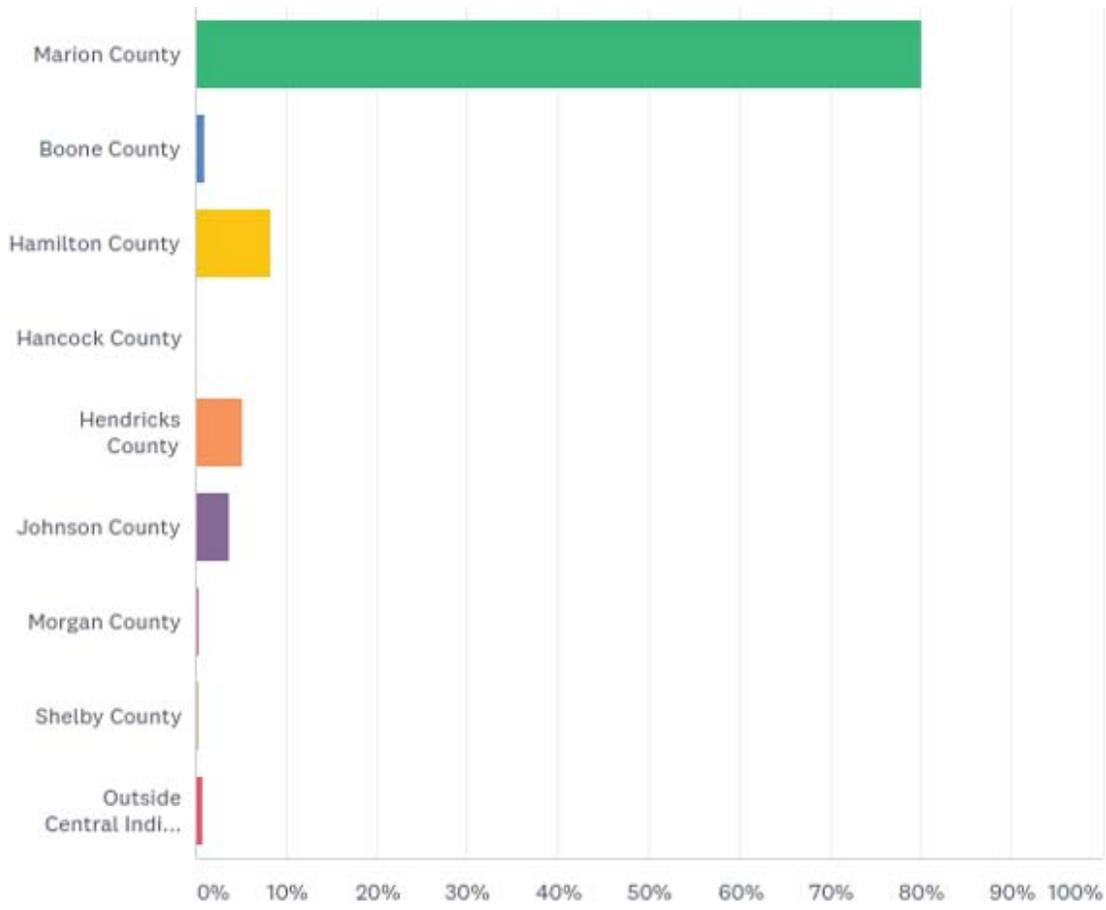


Figure AD-25. | Public Survey #1, Question 16: What county do you live in?

### Q17: If you are employed, what county is your primary job located in?

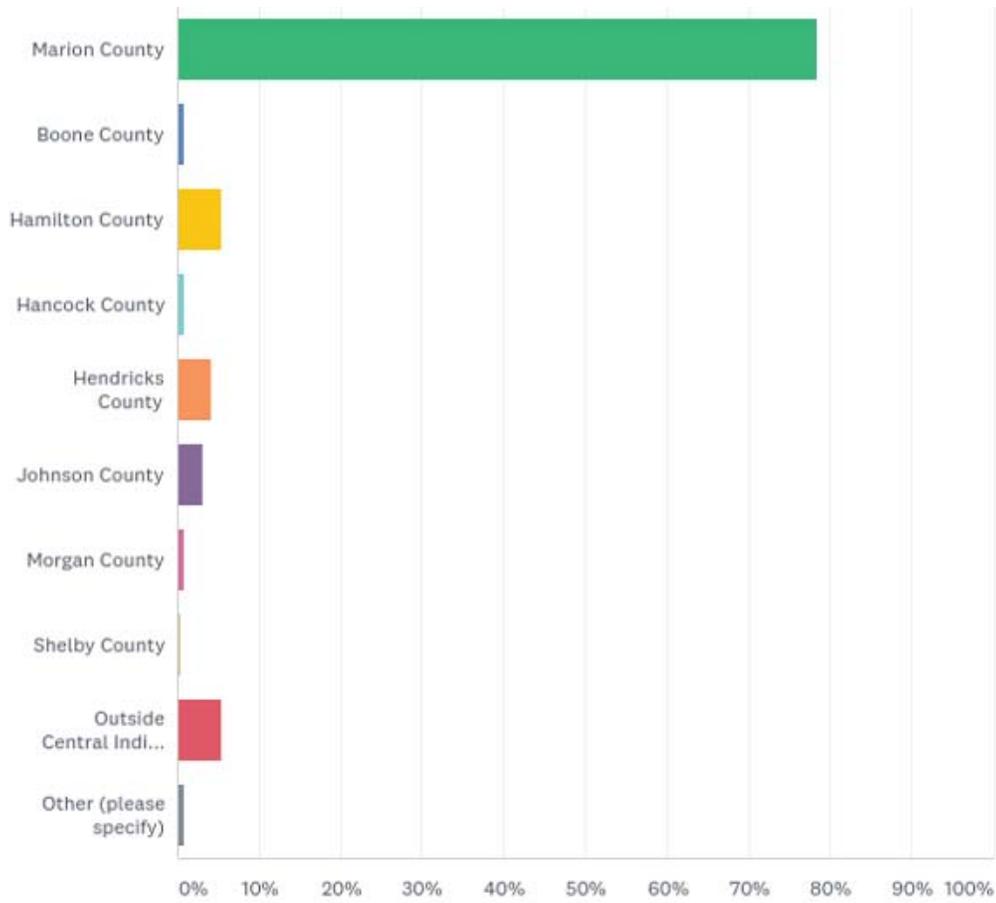


Figure AD-26. | Public Survey #1, Question 17: If you are employed, what county is your primary job located in?

## Public Survey #2

Public Survey #2 was hosted on MetroQuest, an online polling platform designed exclusively for urban and transportation planning. The survey was active from May 1, 2019 to June 21, 2019. It focused on determining the priorities of Central Indiana residents regarding pedestrian infrastructure. A total of 897 people responded to the survey. The survey can be found in Fig. AD-28 – AD-32. A summary of survey results can be found in Fig. AD-33 - AD-37.

## Facebook Posts

Facebook posts promoting Public Survey #2 were published throughout the month of May leading up to the Facebook Live Event. Facebook posts highlighted various topics related to walking and included:

- Survey reminder posts
- “Did You Know?” post (Fig. AD-27)
- Quick poll posts

Survey reminder posts were boosted three times to advertise Public Survey #2 and reach a wider audience. Posts were boosted both regionally and to specific audiences including environmental justice (EJ) communities.

## Facebook Live Event

A Facebook Live Event was hosted on May 23, 2019 to promote Public Survey #2. The event included a Regional Pedestrian Plan Overview followed by a Live Q & A where viewers were invited to discuss and ask questions about the plan. As of November 11, 2019, the video has been viewed a total of 47 times.



Figure AD-27. | “Did You Know?” post.

# 1 MPO Pedestrian Plan

WELCOME!

## We want to hear from YOU!

We're creating a Regional Pedestrian Plan that will set priorities for walkway investment in Central Indiana. Please let us know about your preferences and concerns in this survey!

 Español

 Begin



## Did you Know?

The average person walks about 65,000 miles in his or her lifetime; that's about three times around the earth!

Figure AD-28. | Public Survey #2.

## 2 Review the Goals

PEDESTRIAN GOALS

Connectivity

Safety

Wellness/Quality of Life

Community Benefit

Collaboration & Education

Please rate this scenario:



Optional Comment

### Connectivity

Create a network of convenient, connected, and well-designed sidewalks and paths throughout the Central Indiana region.

Objectives include connecting between communities, connecting to transit, connecting to schools and jobs, and sidewalks and trails as an alternative to driving.

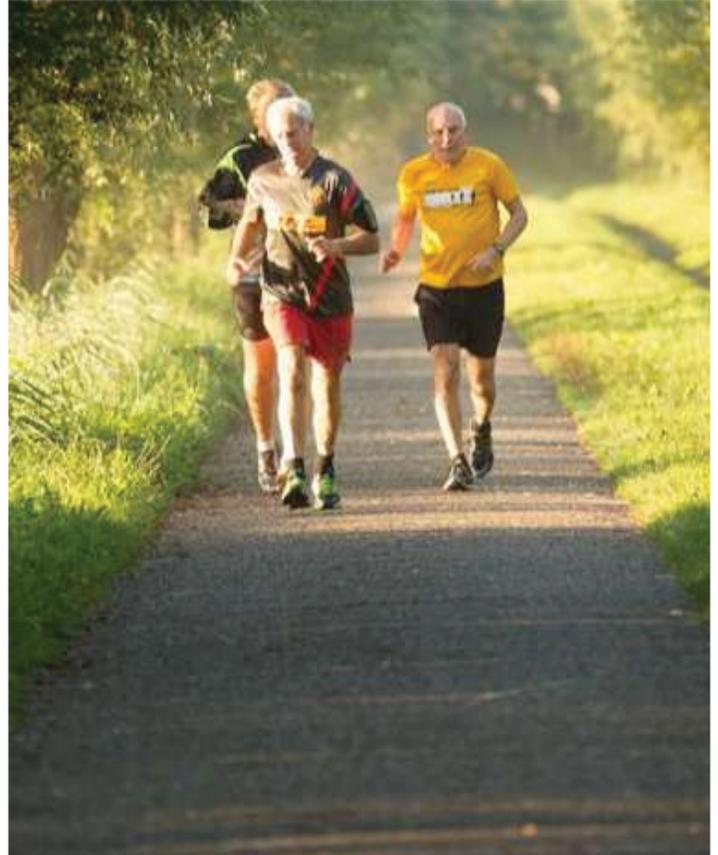


Figure AD-29. | Public Survey #2.

### 3 Areas of Interest

MAJOR TOPICS

Order your top 5 items above this line

- Comfort
- Location
- Health & Wellness
- Equity
- Safety

In order to make sure we fund the right projects; we need to know what is most important to you when it comes to walking.

Please drag 5 of the items above the line in your preferred order.

Suggest another

Figure AD-30. | Public Survey #2.

4

## Element Priority

STRATEGIES

Comfort

Location

Safety

Health & Wellness

Equity

*How important are the following elements are regarding your comfort while walking?*

---

**Traffic Volumes**  
Number of vehicles/traffic on roadways

---

**Posted Speed Limits**  
How fast the vehicles are traveling

---

**Number of Traffic Lanes**  
How wide the street is

---

**Presence of Street Lights**  
Having well-lit sidewalks and paths

---

**Buffer Zones**  
Having separations between the walking space and cars/bicycles.

★★★★★

💬 Comment

---

**Presence of Street Lights**  
Having well-lit sidewalks and paths

---

**Buffer Zones**  
Having separations between the walking space and cars/bicycles.

★★★★★

💬 Comment

---

💬 Suggest another

➔ Next Category

Figure AD-31. | Public Survey #2.

DRAFT - 12.20.2019

REGIONAL PEDESTRIAN PLAN

5 Tell us about You

Thank You!

For more information or questions about this study, please visit the [project website](http://projectwebsite.atIndyMPO.org) at [IndyMPO.org](http://IndyMPO.org).


Final Questions (Optional)

What is your age?

Which best describes your sex?

Which best describes your race/ethnicity?

What is your approx. total household income?

What county do you live in?

Any other comments, questions, or concerns?

Figure AD-32. | Public Survey #2.

## Public Survey #2: Results

The following graphs represent a summary of the survey results from Public Survey #2. The results from the survey were evaluated by MPO staff and its consulting team to help set priorities for pedestrian infrastructure investment in Central Indiana.

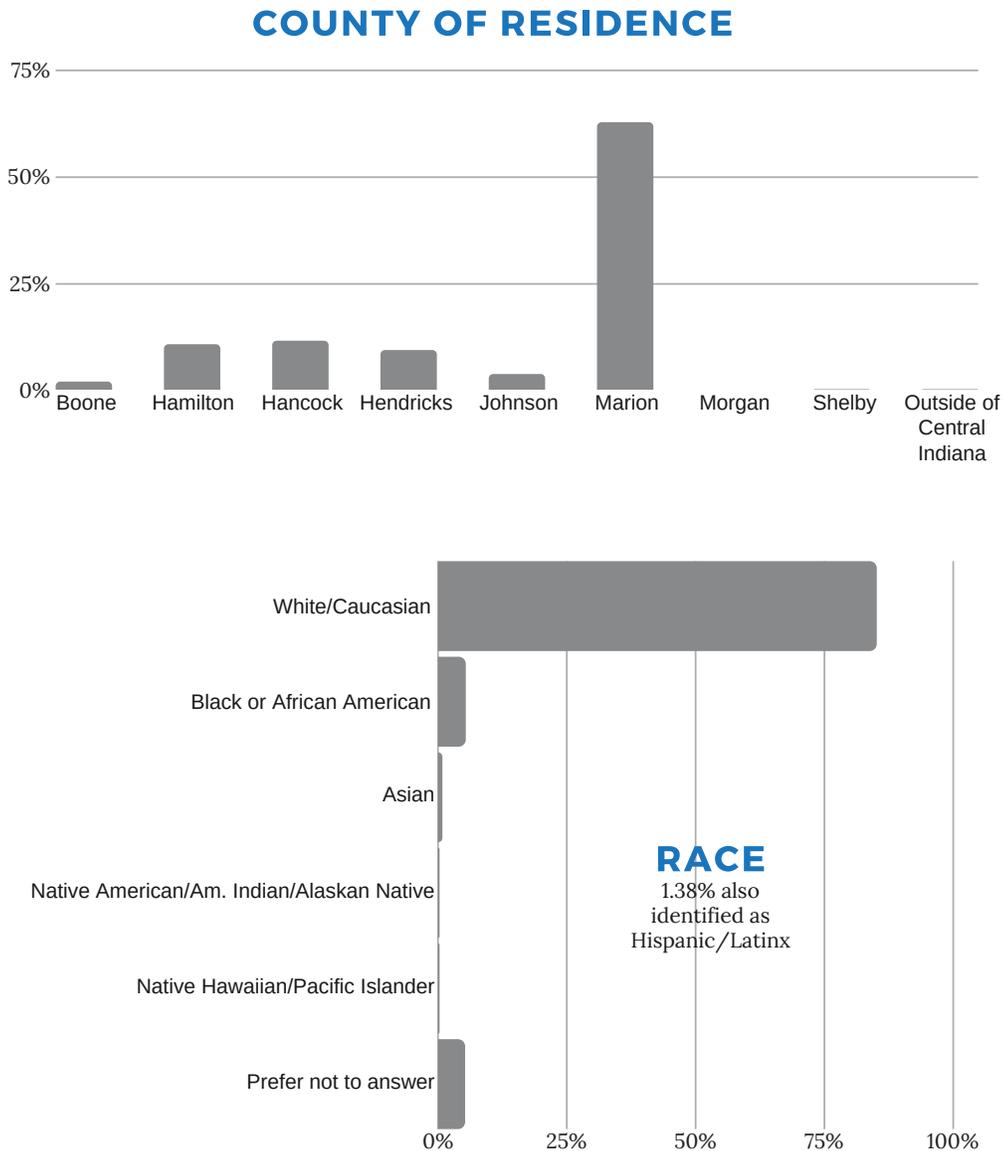


Figure AD-33. | Public Survey #2 Results: County of Residence and Race.

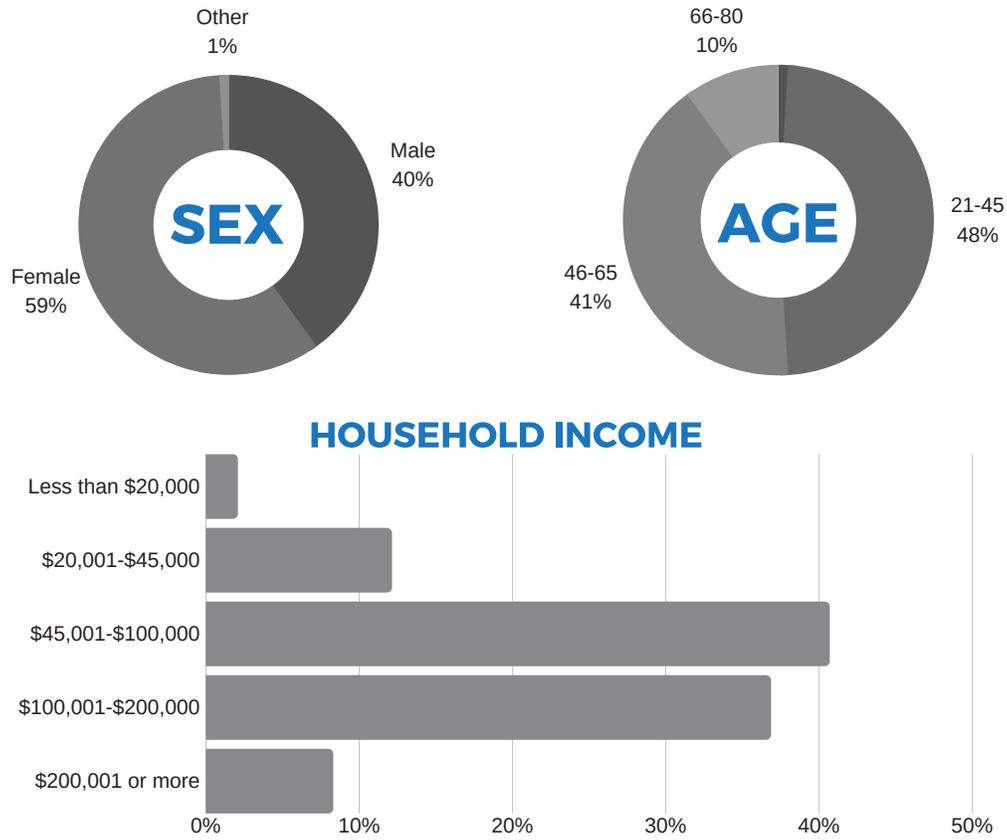
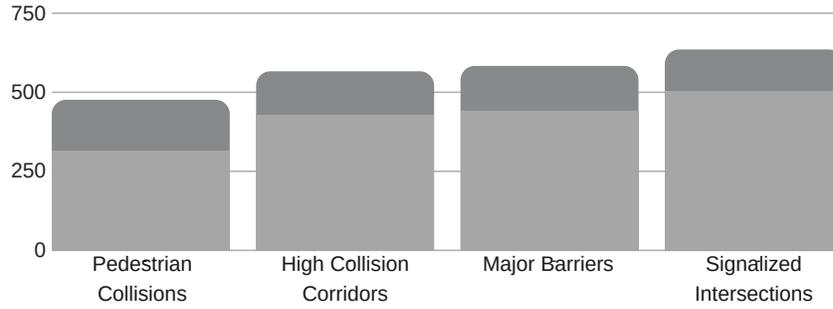


Figure AD-34. | Public Survey #2 Results: Sex, Age, and Household Income.

## SAFETY

Overall, safety was ranked at 2.015 (a ranking of 1 is the highest rank).



## LOCATION

Overall, location was ranked at 2.305 (a ranking of 1 is the highest rank).

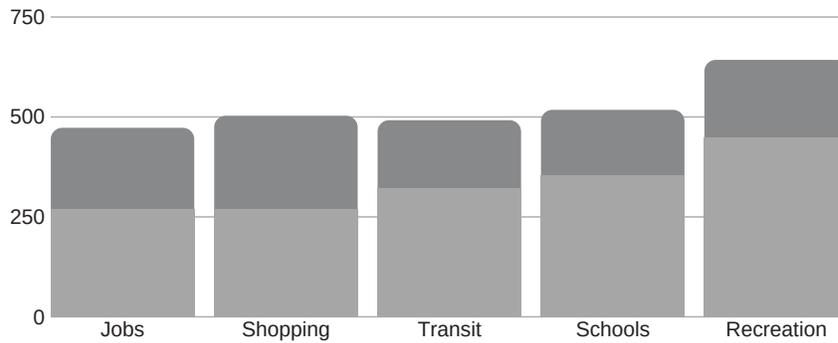
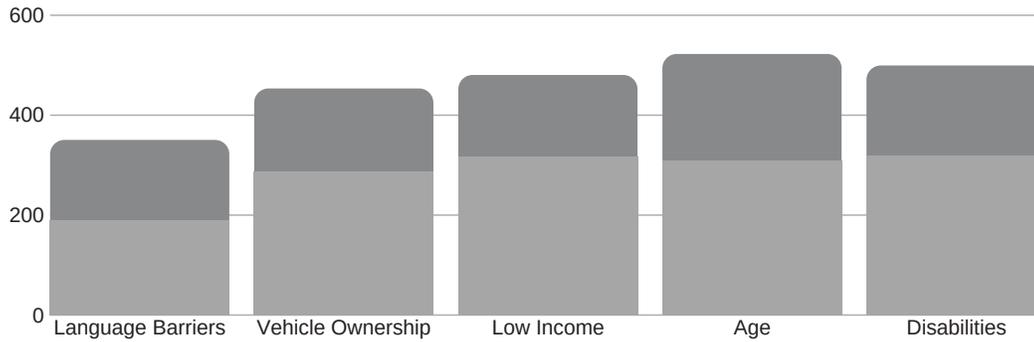


Figure AD-35. | Public Survey #2 Results: Safety and Location.

## EQUITY

Overall, equity was ranked at 3.36 (a ranking of 1 is the highest rank).



## HEALTH AND WELLNESS

Overall, health and wellness was ranked at 3.525 (a ranking of 1 is the highest rank).

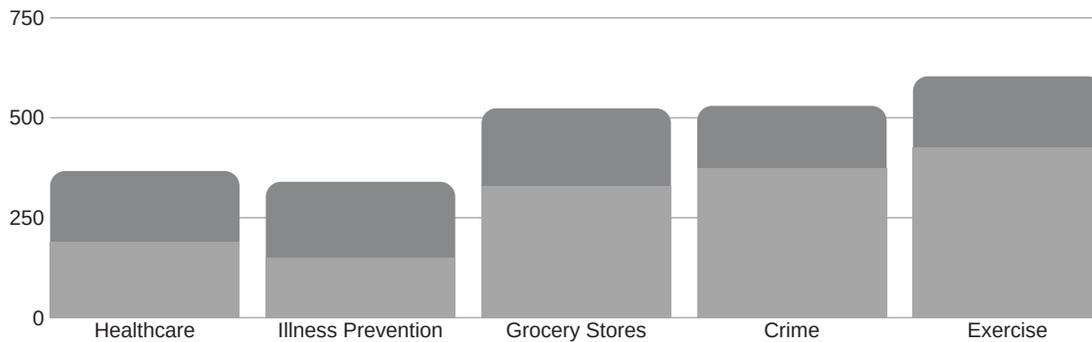


Figure AD-36. | Public Survey #2 Results: Equity and Health and Wellness.

# COMFORT

Overall, comfort was ranked at 3.729 (a ranking of 1 is the highest rank).

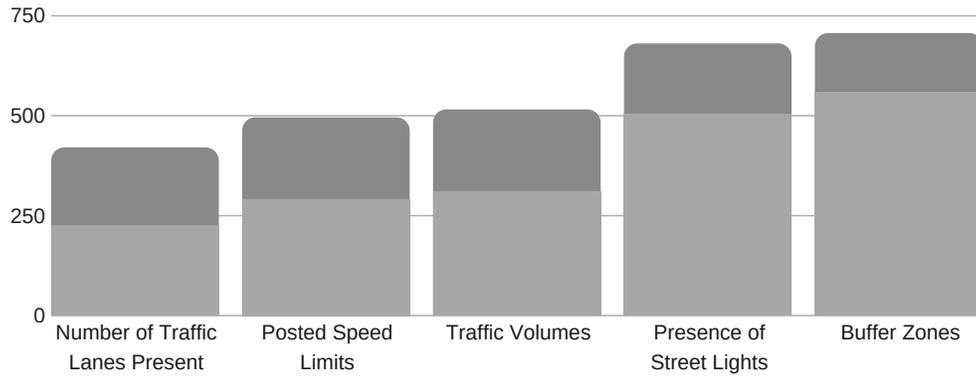


Figure AD-37. | Public Survey #2 Results: Comfort.

# E

## APPENDIX E: RANKING STRATEGIES





## APPENDIX E: PRELIMINARY RANKING STRATEGIES

Ranking strategies are necessary to ensure that areas with the greatest need are funded first.

---

### Preliminary Ranking Strategies

The following prioritization approaches use quantitative data (priority investment areas indices including health, pedestrian safety, walking comfort, equity, and pedestrian demand) to help identify which areas should be funded first. Four different preliminary ranking strategies were used to identify high priority investment areas, including:

- Public Input Driven
- Steering Committee Input
- Marion County WalkWays Plan Priorities
- Planning Best Practices

The heat maps on the following pages illustrate the “hot spots” that indicate high priority investment areas.



## PRELIMINARY RANKING STRATEGIES: PUBLIC INPUT DRIVEN

Set priorities for pedestrian infrastructure investment in Central Indiana based on the results from Public Survey #2.

One approach to identifying high priority investment areas is using the public input gathered in the Regional Pedestrian Survey #2 commissioned by the Indianapolis MPO in order to gauge Central Indiana residents' priorities when it comes to pedestrian infrastructure. The survey was made available through MetroQuest and remained open between May 1, 2019 and June 21, 2019. A total of 897 people responded to the survey. Prioritization results are as follows:



# Public Input Driven

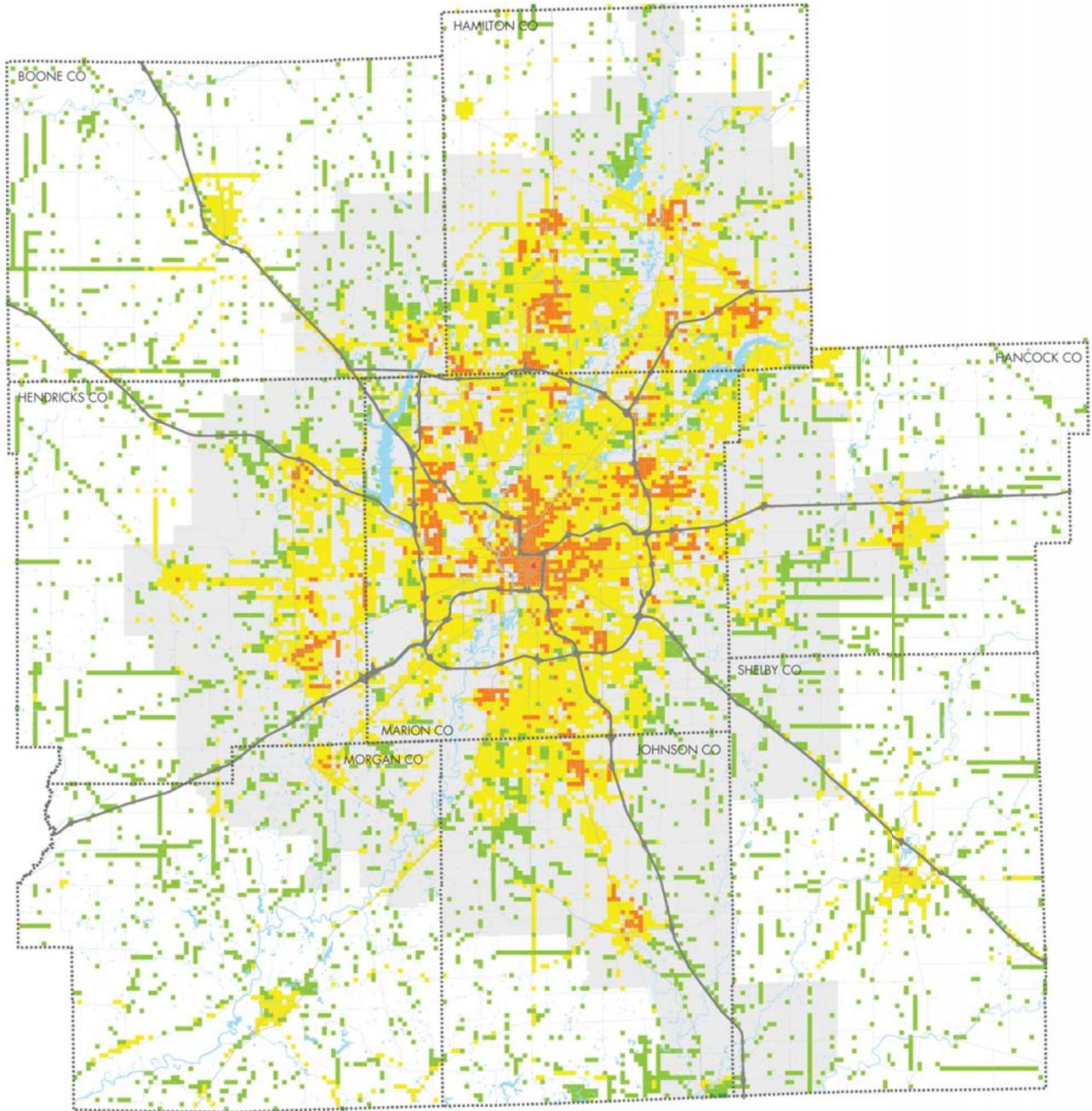


Figure AE-1. | Preliminary Ranking Strategy: Public Input



## PRELIMINARY RANKING STRATEGIES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways



## PRELIMINARY RANKING STRATEGIES: STEERING COMMITTEE INPUT

Set priorities for pedestrian infrastructure investment in Central Indiana based on input from the steering committee.

Priority Investment Areas indices and ranking strategies were introduced at Steering Committee Meeting #3. During this meeting, members were asked to evaluate the three ranking strategies and create their own ranking strategies for prioritization using the priority investment areas indices. Members completed the exercise individually, followed by a group discussion on how they selected the indices of greatest importance. Based on feedback from this exercise, the ratings for each of the five indices were averaged to establish a ranking system based on Steering Committee feedback. Based on this exercise, the prioritization results are as follows:



# Steering Committee Input

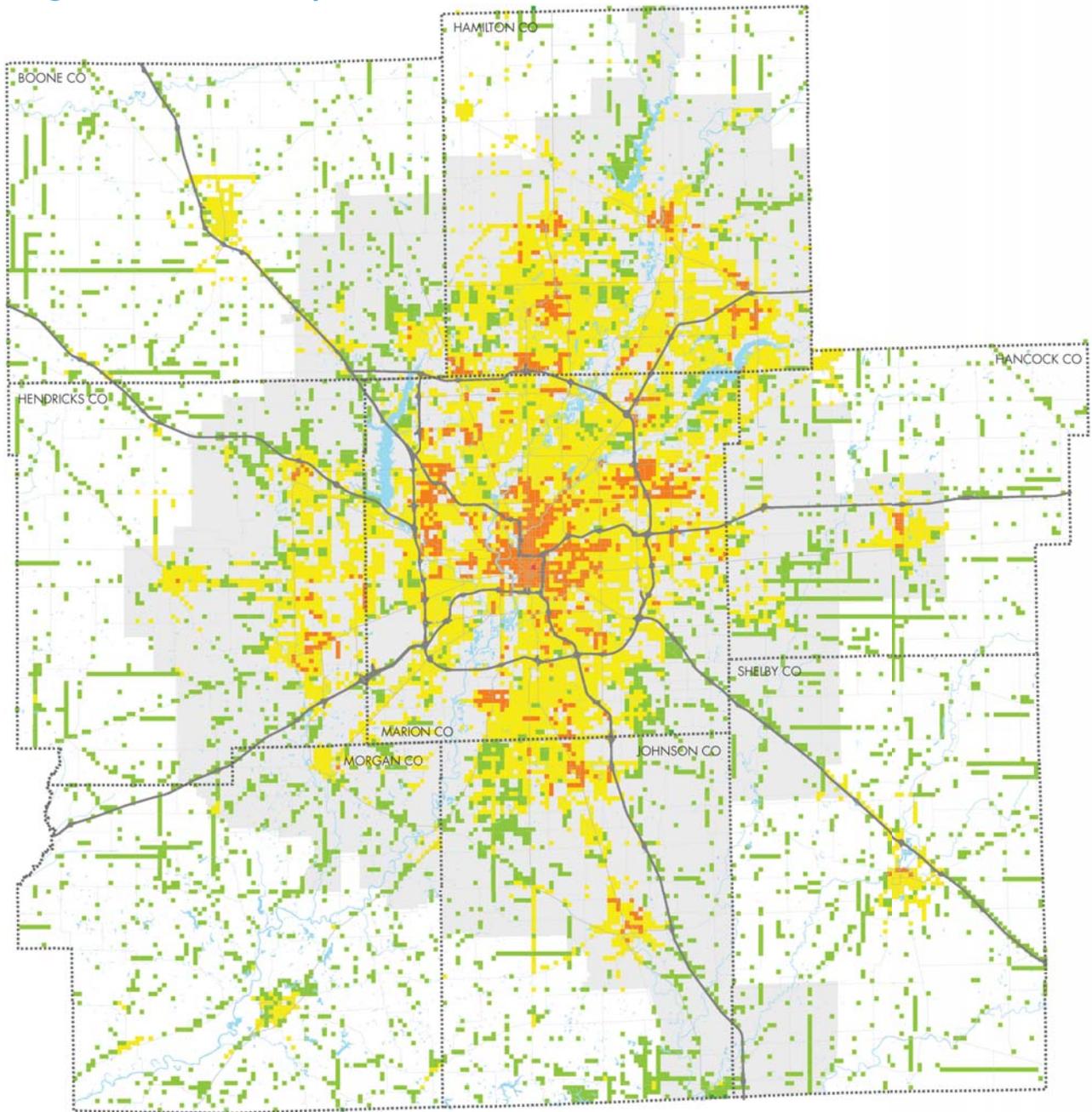


Figure AE-2. Preliminary Ranking Strategy: Steering Committee Input



## PRELIMINARY RANKING STRATEGIES

<b>SCALE</b>		<b>LEGEND</b>	
		Tier 1 Priority Investment Area	Interstates
		Tier 2 Priority Investment Area	Major Streets
		Tier 3 Priority Investment Area	County Lines
		Tier 4 Priority Investment Area	Waterbodies
		Tier 5 Priority Investment Area	Waterways



## PRELIMINARY RANKING STRATEGIES: MARION COUNTY WALKWAYS PLAN PRIORITIES

Set priorities for pedestrian infrastructure investment in Central Indiana based on rankings in the Marion County Walkways Plan.

Another approach to identifying high priority investment areas is using the ranking established in the Marion County Walkways Plan. The Marion County Walkways Plan was created by WalkWays, an initiative to make Indianapolis more walkable and get more people walking. It serves as a guide for creating a healthier, more walkable Indianapolis by prioritizing future investments in pedestrian projects for Marion County. This approach allows for the identification of areas that are most in need of walkability improvements. Based on community feedback and the goals of the plan, the prioritization results are as follows:



# Marion County WalkWays Plan Priorities

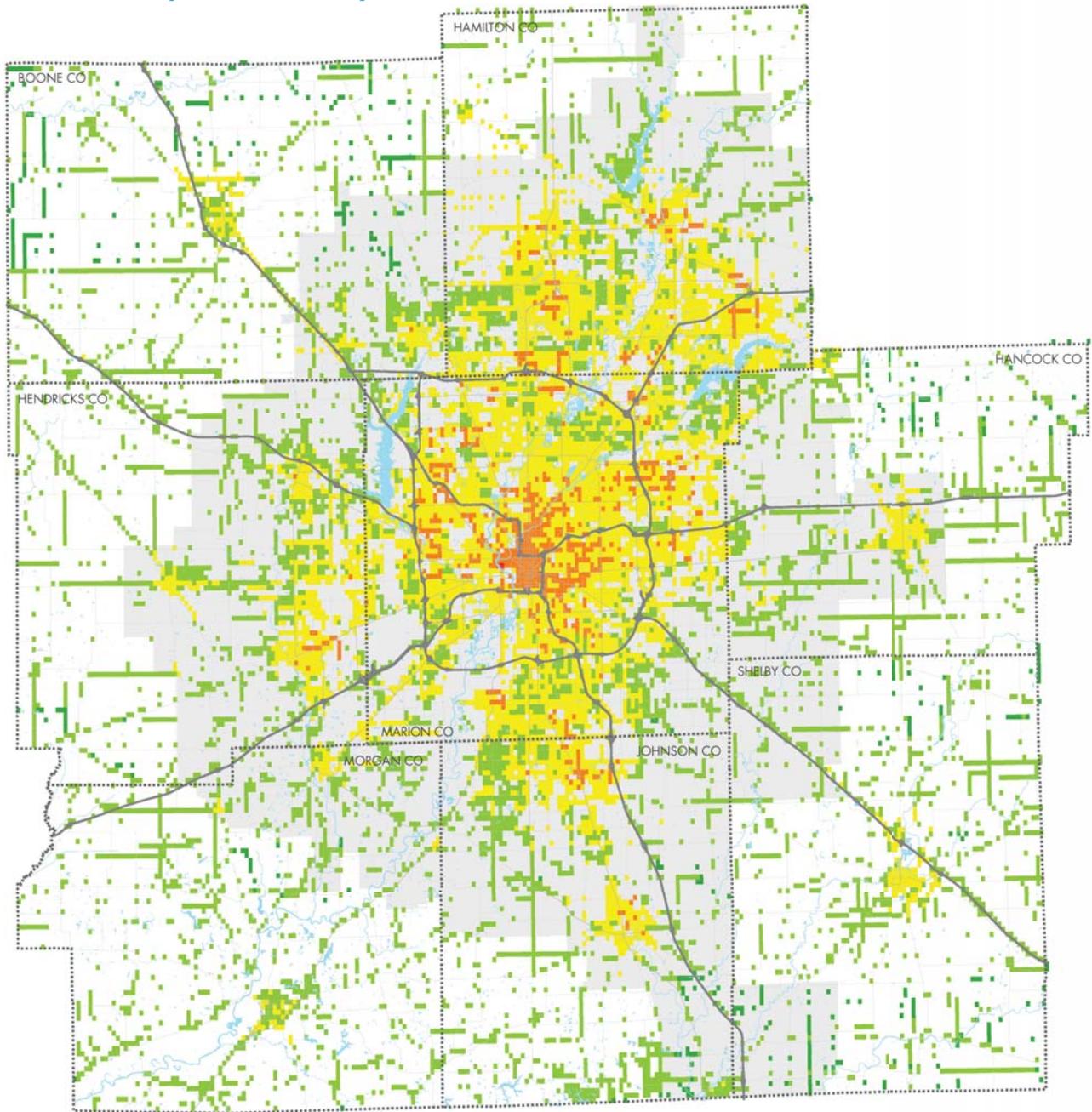


Figure AE-3. Preliminary Ranking Strategy: Marion County WalkWays Plan



## PRELIMINARY RANKING STRATEGIES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways



## PRELIMINARY RANKING STRATEGIES: PLANNING BEST PRACTICES

Set priorities for pedestrian infrastructure investment in Central Indiana based on planning best practices.

Another approach to identifying high priority investment areas is using planning best practices. Walking Safety is the easiest strategy for cities and municipalities to implement, as it involves making physical changes to the built environment. Equity helps ensure that everyone in the Central Indiana region has equal access to pedestrian facilities along the regional network. Pedestrian Demand addresses the growing population and employment densities and connects communities across Central Indiana. Walking Comfort seeks to improve conditions along sidewalks in high volume corridors across the region. Health focuses on improving the mental and physical health of Central Indiana residents.



# Planning Best Practices

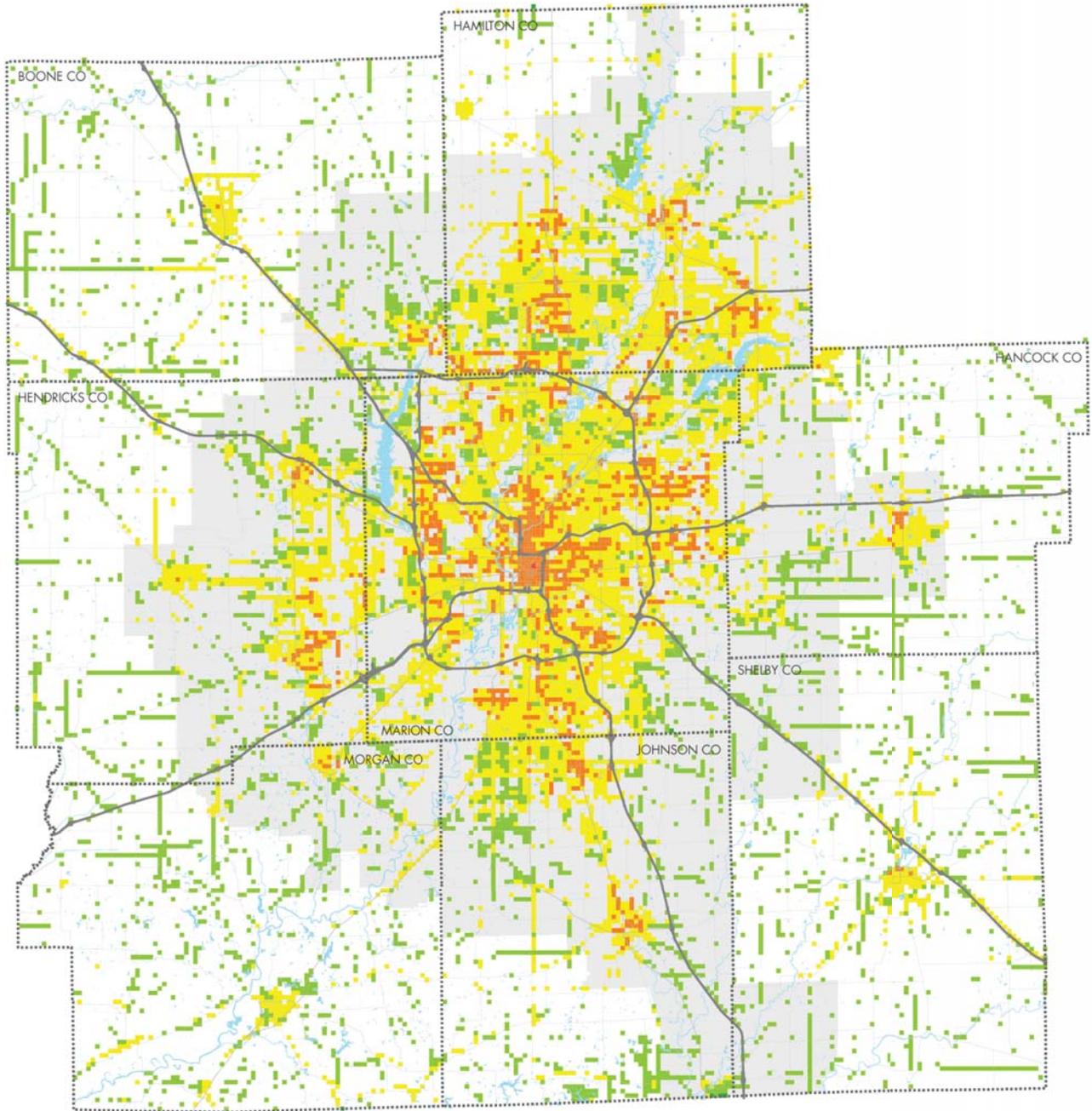


Figure AE-4. Preliminary Ranking Strategy: Planning Best Practices



## PRELIMINARY RANKING STRATEGIES

### SCALE



### LEGEND

- Tier 1 Priority Investment Area
- Tier 2 Priority Investment Area
- Tier 3 Priority Investment Area
- Tier 4 Priority Investment Area
- Tier 5 Priority Investment Area
- Interstates
- Major Streets
- County Lines
- Waterbodies
- Waterways

# F

## APPENDIX F: GIS PRIORITIZATION





## APPENDIX F: GIS PRIORITIZATION METHODOLOGY

GIS and the Spatial Analyst extension were used to identify areas of priority investment for pedestrian infrastructure projects in Central Indiana.

### GIS Prioritization Methodology

The prioritization process is necessary to assist communities in understanding where to begin on improving and expanding upon the regional pedestrian network in Central Indiana. Prioritization strategies for investment identify areas where pedestrian infrastructure and programming is most needed. The prioritization process uses quantitative data to determine high priority investment areas using five indices, including pedestrian safety, equity, wellness, pedestrian demand, and walking comfort.

Prioritization mapping processes were carried out in GIS (Geographic Information System) using data provided by the MPO Staff and members of the Steering Committee (Fig. AF-1). Priority investment areas indices measures were mapped and weighted to establish quantitative rank. Where these factors came together were the “hot spots” that indicate high priority. The process outlined in the Regional Pedestrian Plan was largely based on the prioritization approach used in the Marion County WalkWays Plan. The Marion County WalkWays Plan, published in 2016, used a series of GIS toolboxes to execute batch commands and achieve the following steps:

#### Normalization

Normalization restructures input data by dividing numeric attribute values by a universally selected value (determined by the

user) to minimize differences in values based on the size of areas or the number of features in each area. This was done for each layer.

#### Creating Input Raster Files

In order to generate useable data for prioritization, each layer was converted from polygon to raster.

#### Final Prioritization Raster

After each of the polygon shapefiles were converted into rasters, the rasters were combined to create a final prioritization raster. The prioritization raster assigns a priority score to each area, which is then converted into a priority tiers file. The priority tiers file divides the scores into three tiers (ranked from low to high priority).

The rationale behind creating these toolboxes was to provide the Indianapolis MPO with batch processes that can be easily replicated. This process was modified to fit the needs of the Regional Pedestrian Plan. The process used to generate prioritization for the Regional Pedestrian Plan generally follows the following steps:

#### Polygon to Raster

The polygon to raster tool replicates the “Creating Input Raster Files” step outlined in the Marion County WalkWays plan. In order

to prioritize areas of improvement, each of the polygon shapefiles for the five indices (Pedestrian Safety, Equity, Wellness, Pedestrian Demand, and Walking Comfort) must be converted into rasters. Rasters must follow the integer raster format, which is a grid or expression resulting in a raster.

## Reclassification

The reclassification tool replicates the “Normalization” step outlined in the Marion County WalkWays Plan. This tool reclassifies the values of the input rasters created by the polygon to raster command by creating a common evaluation scale of preference. The value assigned to each range is maintained in this step.

## Weighted Overlay

The weighted overlay tool replicates the “Final Prioritization Raster” step outlined in the Marion County WalkWays plan. This tool includes a series of sub steps that must be followed to achieve proper prioritization:

The evaluation scale is set that represents the range of prioritization, with the values of each scale representing either end of the extreme. If the input rasters are already reclassified to a common measurement, then the evaluation scale must match the one used during reclassification.

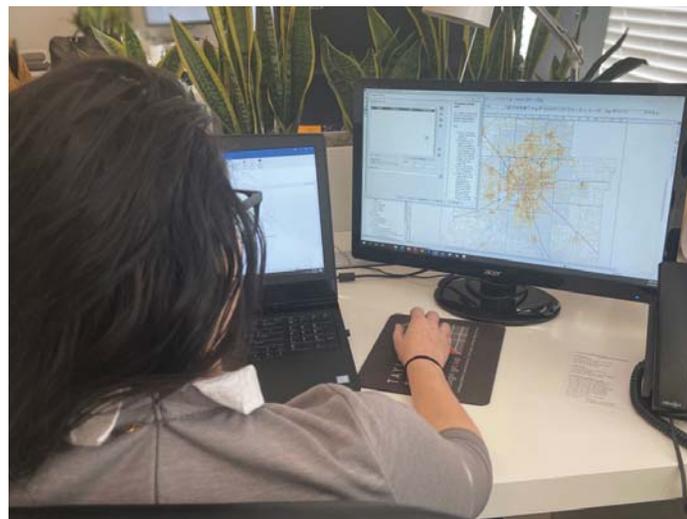


Figure AF-1. | Prioritization mapping processes were carried out in GIS (Geographic Information System).

- The input criteria layers (i.e., the reclassified integer raster for the five priority investment areas indices), are added to the weighted overlay.
- Scale values are set for the individual values within each reclassified integer raster. This ranks the individual values within each raster from most favorable to least favorable.
- Weights are assigned to each of the reclassified integer rasters. This ranks each of the reclassified integer rasters based on their importance. The total influence value for all raster should equal 100%.
- The weighted overlay tool is run to produce final cell values that are used to create a final output raster. This produces the tiers of prioritization ranked from high to low priority.

The five priority investment areas indices yield a single score that is categorized into three tiers of priority, with Tier 1 being the highest priority and Tier 5 being the lowest priority. A more detailed GIS methodology is as follows.

## Data Processing

### Polygon to Raster

The first step in the methodology processes the core data used for each of the five indices from points, lines, and polygons into a density raster file using GIS. Each component data attribute point must be separated into individual layers before the density analysis is run. For example, the AADT data set layer included in the Walking Comfort index was organized into five equal interval tiers and then run through the density analysis.

Based on the original data set, either a kernel, point, or line density tool was used to create individual data set density heat maps. The “environment” set for each of the density analysis was the Functional Street Network excluding local roads and classification 7 (interstates).

This process creates a pixelized grid overlaid on the environment parameters. For this analysis, the cell size

for all pixels was 380x380, which equates to a ¼ mile buffer. The output created will be a signed integer raster with ranges that will need to be reclassified.

## Reclassification

Before the data sets can be used in a weighted overlay analysis, the rasters must be reclassified to not include ranges, but instead single values. Using the Reclassify tool within Spatial Analyst, each raster input will be reclassified from the old value ranges to a set new value. For the {Pedestrian Plan}, a geometrical interval classification method was used with 5 classes. This creates a common measurement that will be used for the weighted overlay prioritization.

## Weighted Overlay

To create the five indices heat maps, the weighted overlay tool was used to create “hot spot” priority areas (Fig. AF-2). The reclassified density rasters were set with a 1 to 5 value integer. This value will become the weighted value as well. Elements of the weighted table are as follows:

### Raster

The raster is the input criteria raster being weighted.

### % Influence

The influence of the raster compared to the other criteria as a percentage of 100. Values are rounded down to the nearest integer. The sum of influences must equal 100.

### Field

Field is the field of criteria raster to use for weighting.

### Scale Value

The scaled value for the criterion, as specified by the Evaluation scale setting. Changing these values will alter the values in the input rasters used in the overlay analysis. You can enter a value directly or select from the drop-down list. In addition to numerical values, the following options are available:

### Restricted

Assigns the restricted value (the minimum value of the

evaluation scale set, minus one) to cells in the output, regardless of whether other input rasters have a different scale value set for that cell.

### NoData

Assigns NoData to cells in the output, regardless of whether other input rasters have a different scale value set for that cell.

### Evaluation scale

Select from a list of predefined evaluation scales. You can also define your own evaluation scale with the From, To, and by controls.

### Set Equal Influence

Balances the percent influence of the input rasters equally and sums them to 100.

### Output raster

The output weighted raster.

In Tables AF-1 - AF-5, the weighted value and weighted overlay percentage of influence is identified for each data set. The output raster created maps the priority investment areas organized by tiers. The Tier 1 being the highest priority and Tier 5 being the lowest priority. A color spectrum was applied to better illustrate the tiers; the darker the identified color, the higher tier that area is.

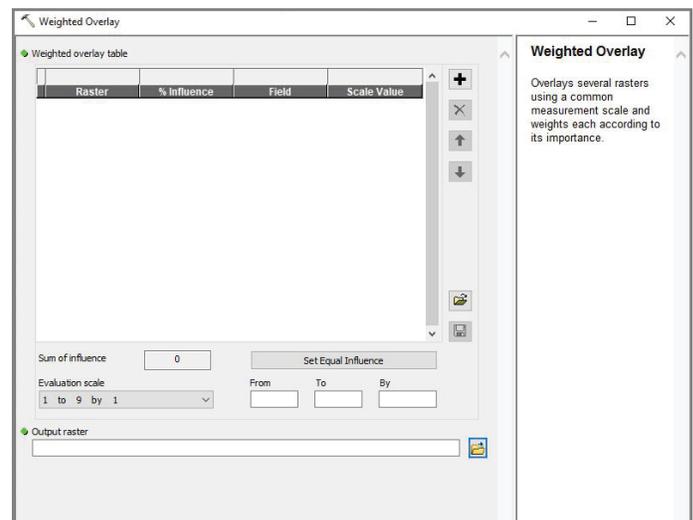


Figure AF-2. | The weighted overlay tool was used to create “hot spot” priority areas.

## Weighted Overlay: Pedestrian Safety

Raster Data Layer	Density Range Values	Weighted Value	Weighted Overlay % of Influence
Existing Pedestrian Network	0 - 0.000028571	1	33.34%
	0.000028571 - 0.000138692	2	
	0.000138692 - 0.000563121	3	
	0.000563121 - 0.002198968	4	
	0.002198968 - 0.008503897	5	
Lane Width	5 - 8	1	33.33%
	8.000000001 - 10	2	
	10.000000001 - 13	3	
	13.000000001 - 17	4	
	17.000000001 - 26	5	
Pedestrian Non-Fatal/Non-Incapacitating Crashes	0 - 0.000000014	1	33.33%
	0.000000014 - 0.000000015	2	
	0.000000015 - 0.000000029	3	
	0.000000029 - 0.00000018	4	
	0.00000018 - 0.000001816	5	

Table AF-1. | Weighted Overlay: Pedestrian Safety

## Weighted Overlay: Equity

Raster Data Layer	Density Range Values	Weighted Value	Weighted Overlay % of Influence
Youth Population	0 - 560.2734803	1	20.0%
	560.2734804 - 886.8801627	2	
	886.8801628 - 1,447.153643	3	
	1,447.153644 - 2,408.268003	4	
	2,408.268004 - 4,057	5	
Senior Population	0 - 264	1	20.0%
	264.0000001 - 424	2	
	424.0000001 - 614	3	
	614.0000001 - 962	4	
	962.0000001 - 1,544	5	
Minority Population	0.015646076 - 0.084575525	1	20.0%
	0.084575525 - 0.241581494	2	
	0.241581494 - 0.486663981	3	
	0.486663981 - 0.74323471	4	
	0.74323471 - 0.992146611	5	
Household Poverty Levels	0 - 102.5852359	1	20.0%
	102.585236 - 144.3163387	2	
	144.3163388 - 246.9015746	3	
	246.9015747 - 499.0811224	4	
	499.0811225 - 1,119	5	
No Car Households	1 - 102.6075757	1	20.0%
	102.6075758 - 173.5124497	2	
	173.5124498 - 222.9920393	3	
	222.9920394 - 257.5204103	4	
	257.5204104 - 307	5	

Table AF-2. | Weighted Overlay: Equity

## Weighted Overlay: Wellness

Raster Data Layer	Density Range Values	Weighted Value	Weighted Overlay % of Influence
Healthcare Facilities	0 - 0.00000001	1	25.0%
	0.000000011 - 0.000000023	2	
	0.000000023 - 0.000000042	3	
	0.000000042 - 0.000000067	4	
	0.000000067 - 0.000000102	5	
Parks	0 - 0.000072229	1	25.0%
	0.000072229 - 0.000508706	2	
	0.000508706 - 0.00314632	3	
	0.00314632 - 0.019085327	4	
	0.019085327 - 0.115404174	5	
Trails	0 - 0.014365361	1	25.0%
	0.014365361 - 0.06973275	2	
	0.06973275 - 0.283131339	3	
	0.283131339 - 1.105618339	4	
	1.10561834 - 4.275671482	5	
Pedestrian Fatal/ Incapacitating Crashes	0 - 68.52529867	1	25.0%
	68.52529868 - 332.637483	2	
	332.6374831 - 1,350.586289	3	
	1,350.58629 - 5,273.993962	4	
	5,273.993963 - 20,395.70508	5	

Table AF-3. | Weighted Overlay: Wellness

## Weighted Overlay: Pedestrian Demand

Raster Data Layer	Density Range Values	Weighted Value	Weighted Overlay % of Influence
Total Population	0 - 2,661.193499	1	33.34%
	2,661.1935 - 4,358.514379	2	
	4,358.51438 - 7,019.707878	3	
	7,019.707879 - 11,192.13686	4	
	11,192.13687 - 17,734	5	
Employment Block Groups	0 - 872	1	33.33%
	872.0000001 - 2,411	2	
	2,411.0000001 - 4,994	3	
	4,994.0000001 - 23,661	4	
	23,661.000001 - 47,318	5	
Educational Facilities	0 - 0.000000015	1	33.33%
	0.000000015 - 0.00000002	2	
	0.00000002 - 0.000000035	3	
	0.000000035 - 0.000000083	4	
	0.000000083 - 0.000000238	5	

Table AF-4. | Weighted Overlay: Pedestrian Demand

## Weighted Overlay: Walking Comfort

Raster Data Layer	Density Range Values	Weighted Value	Weighted Overlay % of Influence
Speed Limit	-1 - 20.37129573	1	14.28%
	20.37129574 - 29.88321934	2	
	29.88321935 - 34.11678066	3	
	34.11678067 - 43.62870427	4	
	43.62870428 - 65 (5)	5	
AADT – Top Tier	0 - 0.869227244	1	14.28%
	0.869227244 - 7.157166384	2	
	7.157166385 - 52.64375108	3	
	52.64375109 - 381.6910496	4	
	381.6910497 - 2,762	5	
AADT – High Tier	0 - 1.854111081	1	14.28%
	1.854111082 - 11.21378566	2	
	11.21378567 - 58.46203805	3	
	58.46203806 - 296.9743211	4	
	296.9743212 - 1,501	5	
AADT – Mid Tier	0 - 14.38325745	1	14.28%
	14.38325746 - 86.99088626	2	
	86.99088627 - 453.518968	3	
	453.5189681 - 2,303.776812	4	
	2,303.776813 - 11,644	5	
AADT – Low Tier	0 - 9.299937285	1	14.28%
	9.299937286 - 70.78824207	2	
	70.78824208 - 477.3298681	3	
	477.3298682 - 3,165.257178	4	
	3,165.257179 - 20,937	5	
AADT – Bottom Tier	0 - 599.9043464	1	14.28%
	599.9043465 - 2,213.406348	2	
	2,213.406349 - 6,553.079371	3	
	6,553.079372 - 18,225.05867	4	
	18,225.05868 - 49,618	5	

## Weighted Overlay: Walking Comfort

Functional Classification	Class 6	1	14.32%
	Class 5	2	
	Class 4	3	
	Class 3	4	
	Class 2	5	

Table AF-5. | Weighted Overlay: Walking Comfort

### Weighted Overlay for Ranking Strategies

Once the five indice priority area heat maps were created, various ranking strategies were applied to create the preliminary ranking strategy heat maps. There are 4 preliminary ranking strategies that are further explained in Chapter 6: Prioritization. The same weighted overlay process was conducted for the ranking strategies as the indices with minor changes. Instead of weighting the individual data rasters, this process weighted the indice

heat maps to each other. Also, the percentage of influence varied to the indice tier.

Table AF-6 outlines the four preliminary strategies, weighted values and percentage of influence for each. The output raster created maps the priority investment areas organized by tiers. The tier 1 being the highest priority and Tier 5 being the lowest priority. A color spectrum was applied to better illustrate the tiers.

## Weighted Overlay: Preliminary Ranking Strategies

### PUBLIC INPUT DRIVEN

Indice	Weighted Value	Weighted Overlay % of Influence
Pedestrian Safety	5	33%
Pedestrian Demand	4	27%
Equity	3	20%
Wellness	2	13%
Walking Comfort	1	7%

### STEERING COMMITTEE INPUT

Indice	Weighted Value	Weighted Overlay % of Influence
Pedestrian Safety	5	33%
Equity	4	27%
Wellness	3	20%
Pedestrian Demand	2	13%
Walking Comfort	1	7%

### MARION COUNTY WALKWAYS PLAN PRIORITIES

Indice	Weighted Value	Weighted Overlay % of Influence
Wellness	5	33%
Pedestrian Safety	4	27%
Equity	3	20%
Walking Comfort	2	13%
Pedestrian Demand	1	7%

### PLANNING BEST PRACTICES

Indice	Weighted Value	Weighted Overlay % of Influence
Pedestrian Safety	5	33%
Equity	4	27%
Pedestrian Demand	3	20%
Walking Comfort	2	13%
Wellness	1	7%

Table AF-6. | Weighted Overlay: Preliminary Ranking Strategies

## Weighted Overlay for the Composite Ranking Strategy

A final composite ranking strategy was then created that took into account the four preliminary ranking strategies (Table AF-7). Point values for preliminary ranking strategies indices were averaged to generate weighting, where equal importance was placed on each strategies approach to ensure impartiality. The final prioritization results are as follows.

### Weighted Overlay: Composite Ranking Strategy Prioritization

COMPOSITE RANKING STRATEGY		
Indice	Weighted Value	Weighted Overlay % of Influence
Pedestrian Safety	5	33%
Equity	4	27%
Wellness	3	20%
Pedestrian Demand	2	13%
Walking Comfort	1	7%

Table AF-7. | Weighted Overlay: Composite Prioritization

# G

## APPENDIX G: IMPROVEMENT PROJECTS





## APPENDIX G: IMPROVEMENT PROJECTS

Using the composite ranking strategy map that organized pedestrian projects into five tiers of priority, the existing pedestrian infrastructure network was cross-referenced and categorized to determine where the gaps fell in the tier system.

---

### Priority Pedestrian Infrastructure Improvement Projects

Using the composite ranking strategy map that organized pedestrian projects into five tiers of priority, the existing pedestrian infrastructure network was cross-referenced and categorized to determine where the gaps fell in the tier system. Gap segments represent missing infrastructure in the existing pedestrian network within the MPA and are the focus of this plan. These projects are located in general areas in need of pedestrian improvement and are intended to serve communities as part of a larger pedestrian infrastructure improvement initiative.

The following maps examine gap projects in the network and should be used as a reference, not a rule. The prioritization of these projects is based on regional needs and may not meet community priorities. Since no gap segments intersected with Tier 1 and Tier 5 priority areas in the composite ranking strategy map, there are no Tier 1 or Tier 5 priority projects.

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: BOONE COUNTY

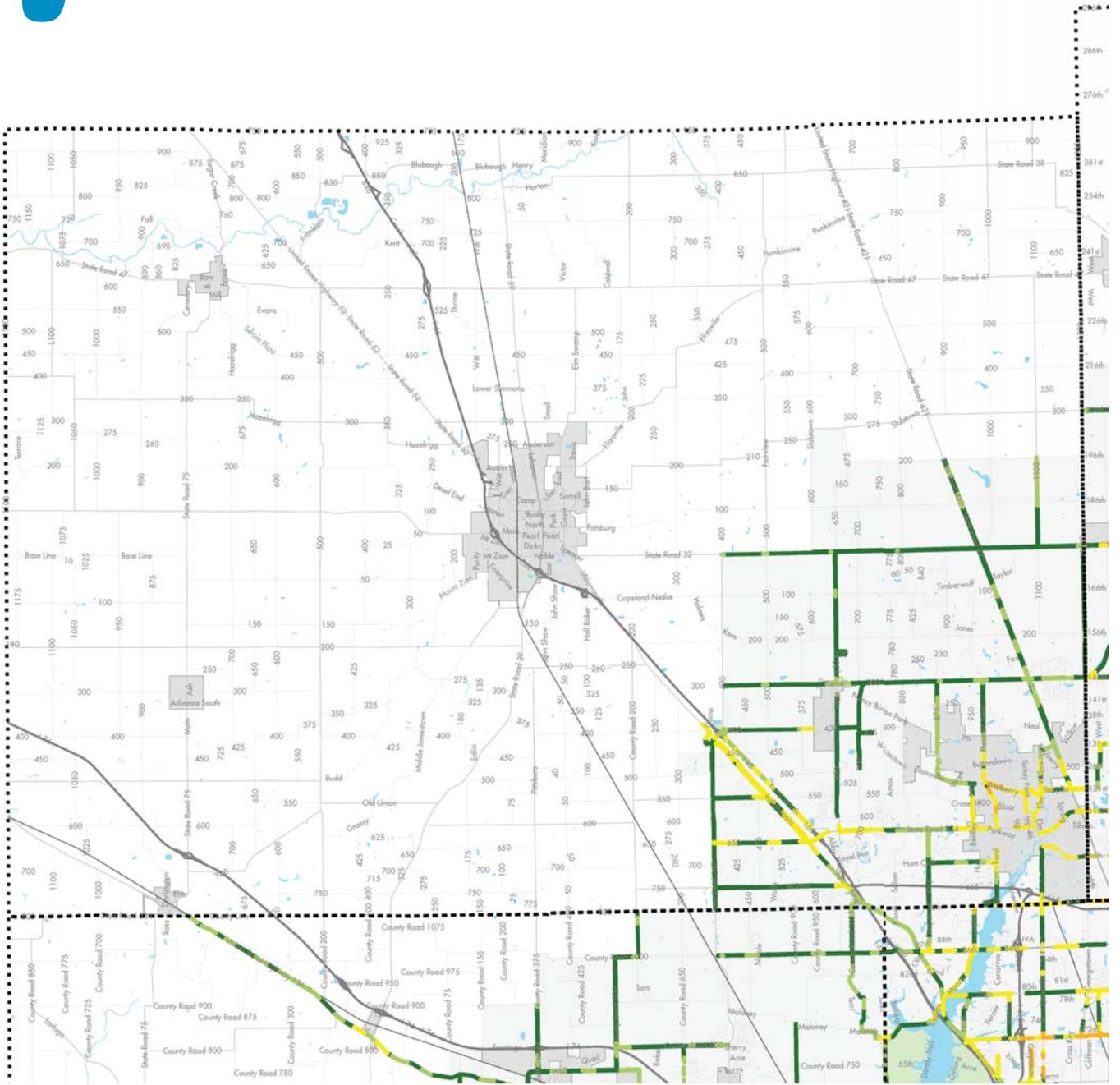


Figure AG-1. Priority Pedestrian Infrastructure Improvement Projects: Boone County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies



# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: HAMILTON COUNTY

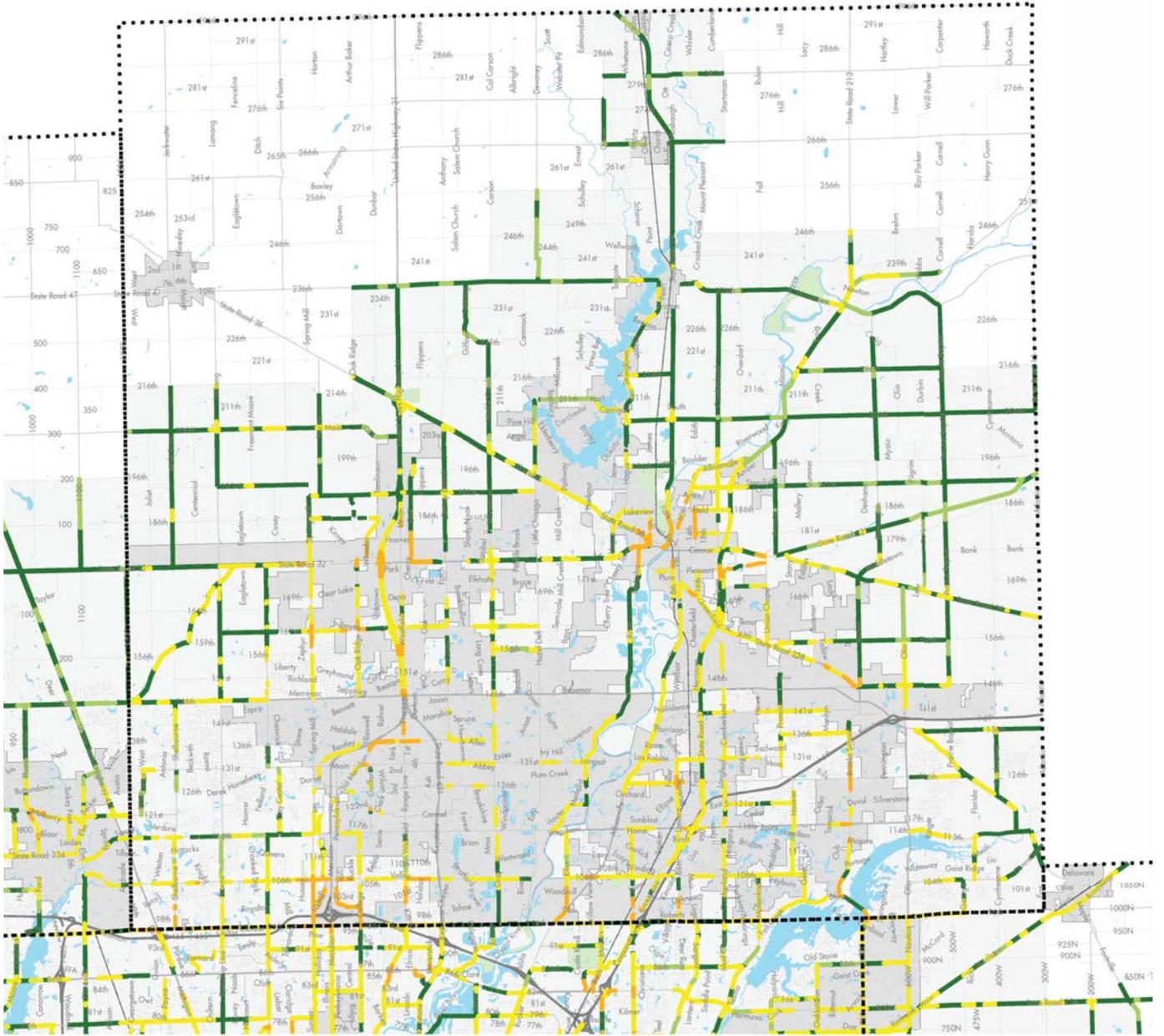


Figure AG-2. Priority Pedestrian Infrastructure Improvement Projects: Hamilton County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles



LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: HANCOCK COUNTY

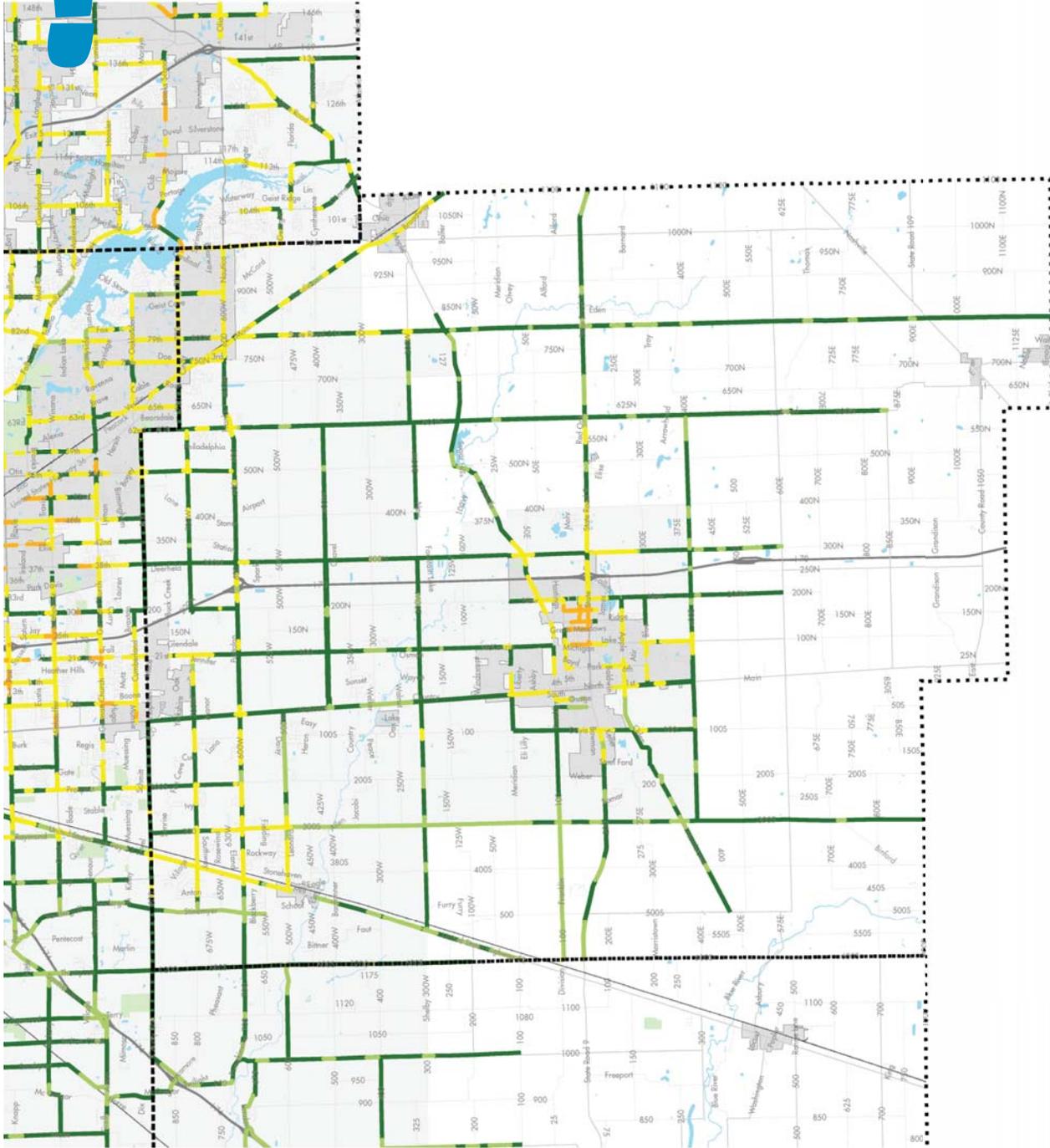


Figure AG-3. Priority Pedestrian Infrastructure Improvement Projects: Hancock County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project

- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: HENDRICKS COUNTY

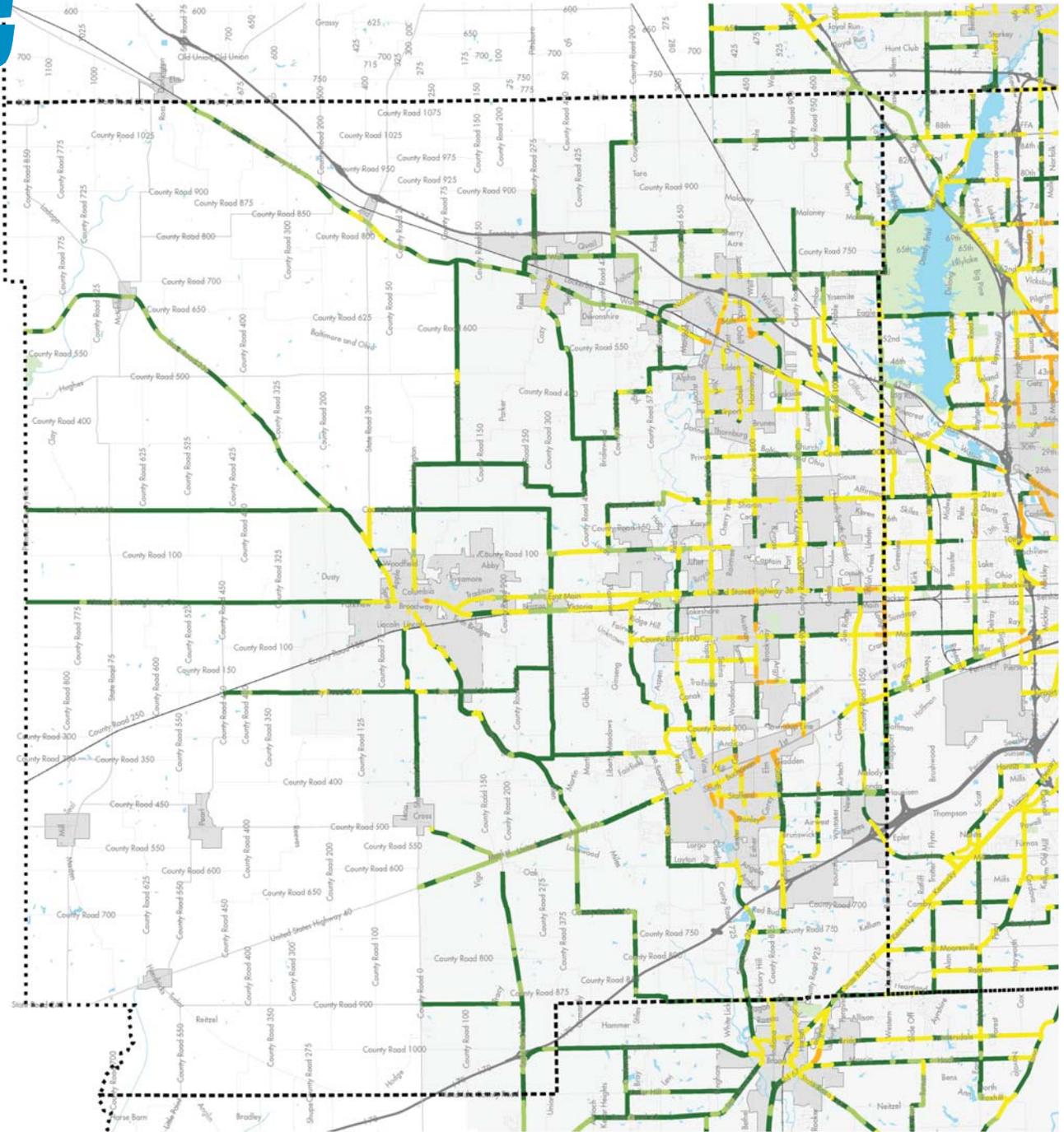


Figure AG-4. Priority Pedestrian Infrastructure Improvement Projects: Hendricks County.



## PRIORITY IMPROVEMENT PROJECTS

### SCALE



### LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: JOHNSON COUNTY

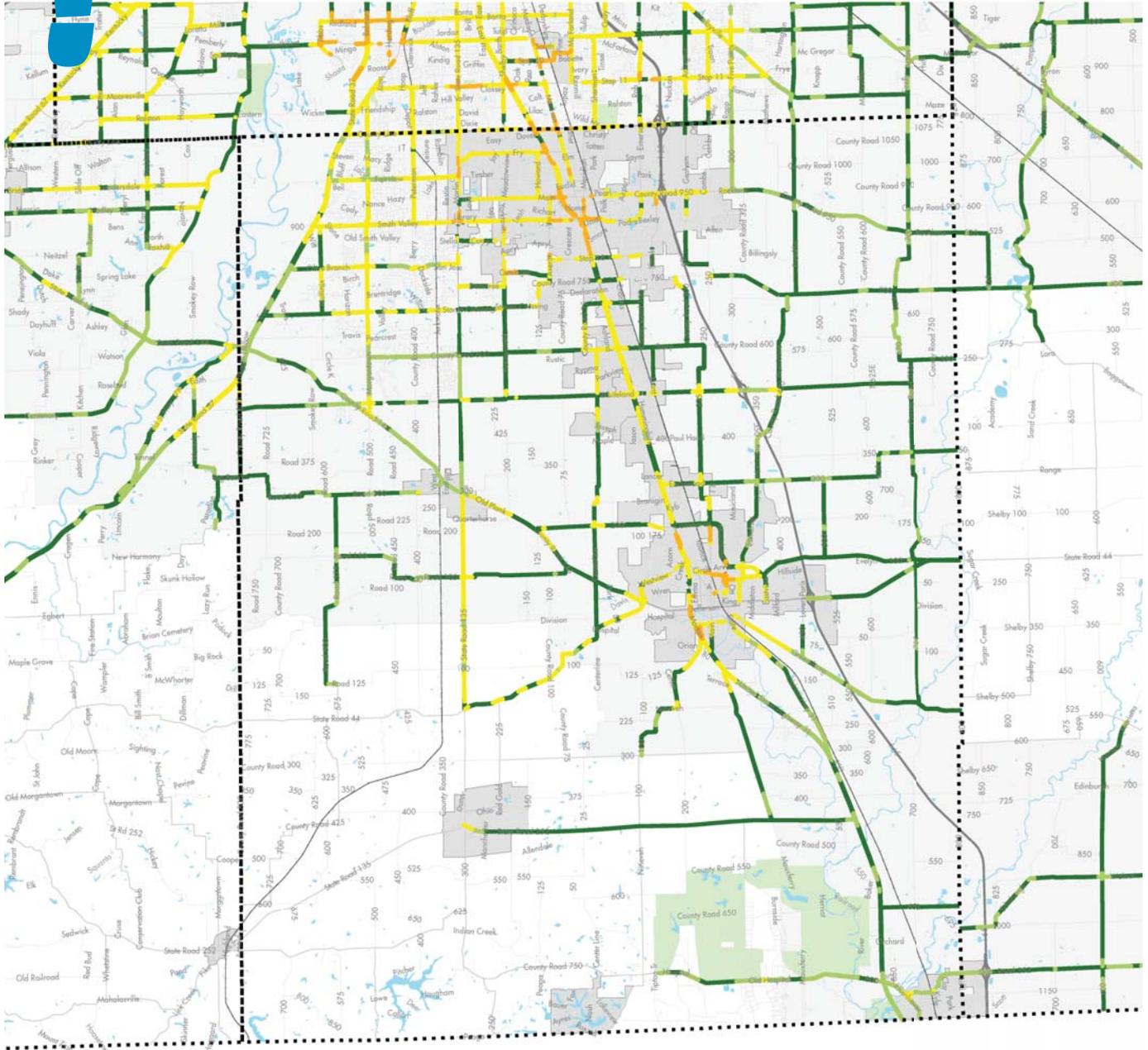


Figure AG-5. Priority Pedestrian Infrastructure Improvement Projects: Johnson County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: MARION COUNTY

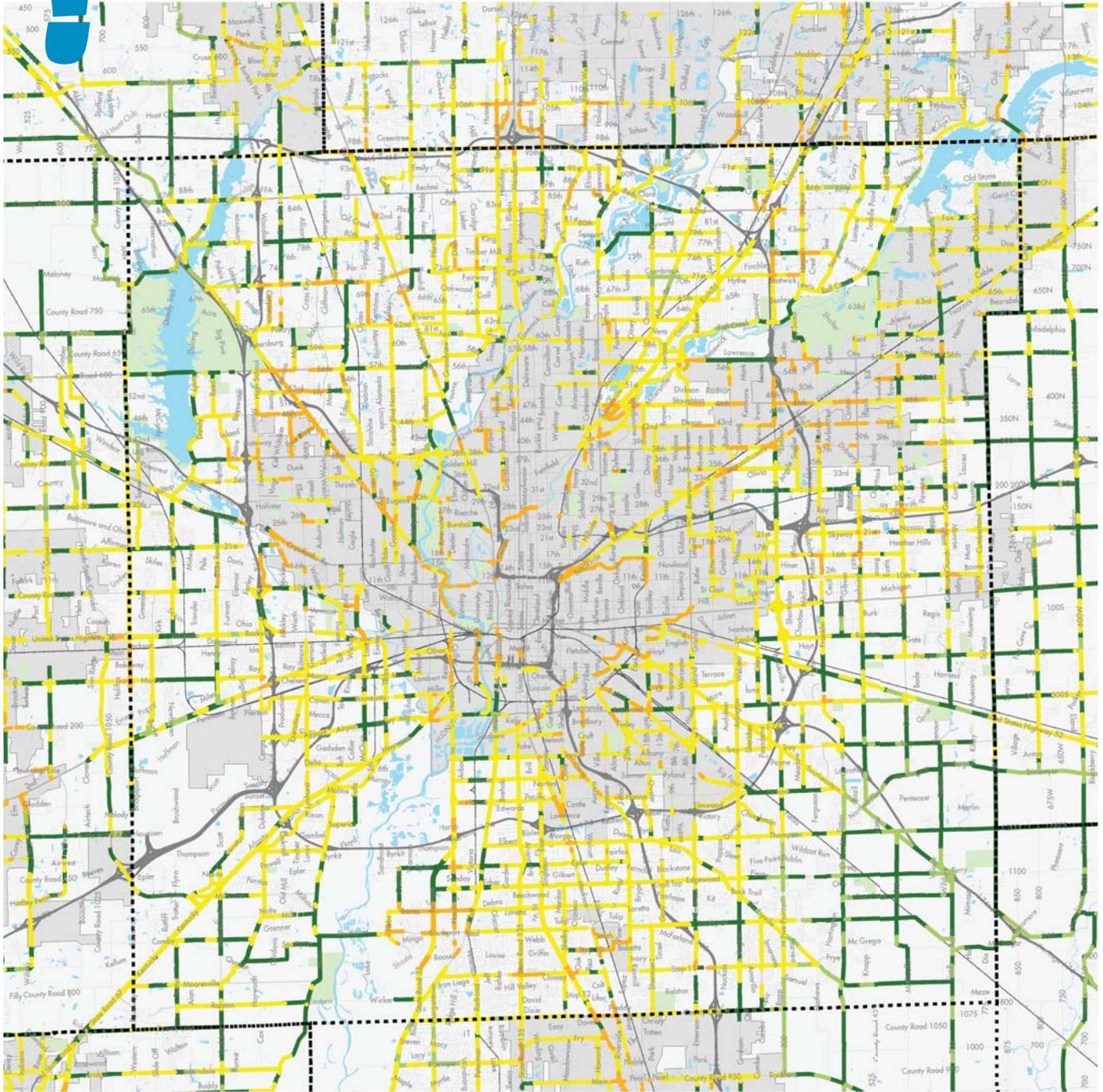


Figure AG-6. Priority Pedestrian Infrastructure Improvement Projects: Marion County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: MORGAN COUNTY

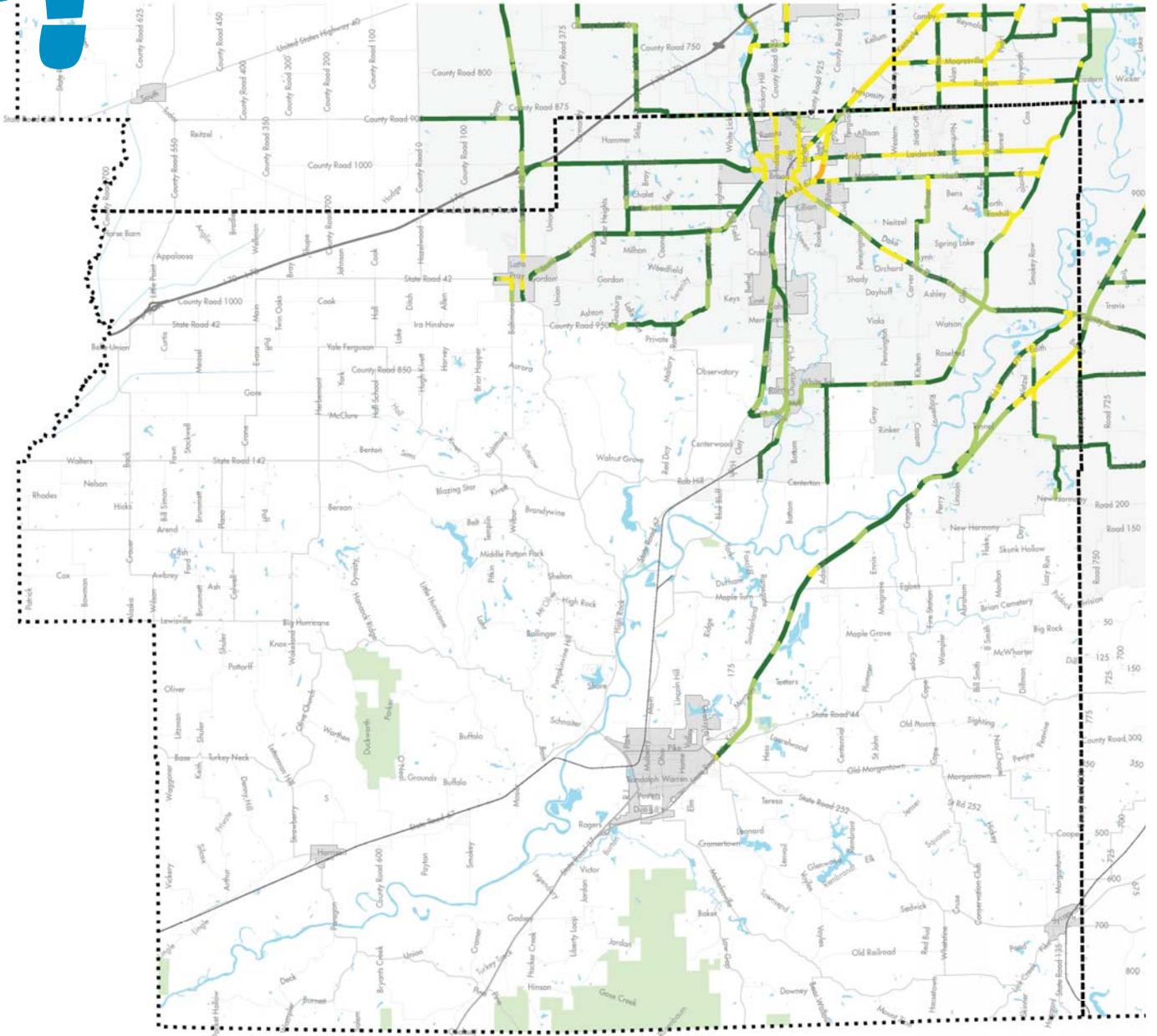


Figure AG-7. Priority Pedestrian Infrastructure Improvement Projects: Morgan County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

# PRIORITY PEDESTRIAN INFRASTRUCTURE IMPROVEMENT PROJECTS: SHELBY COUNTY

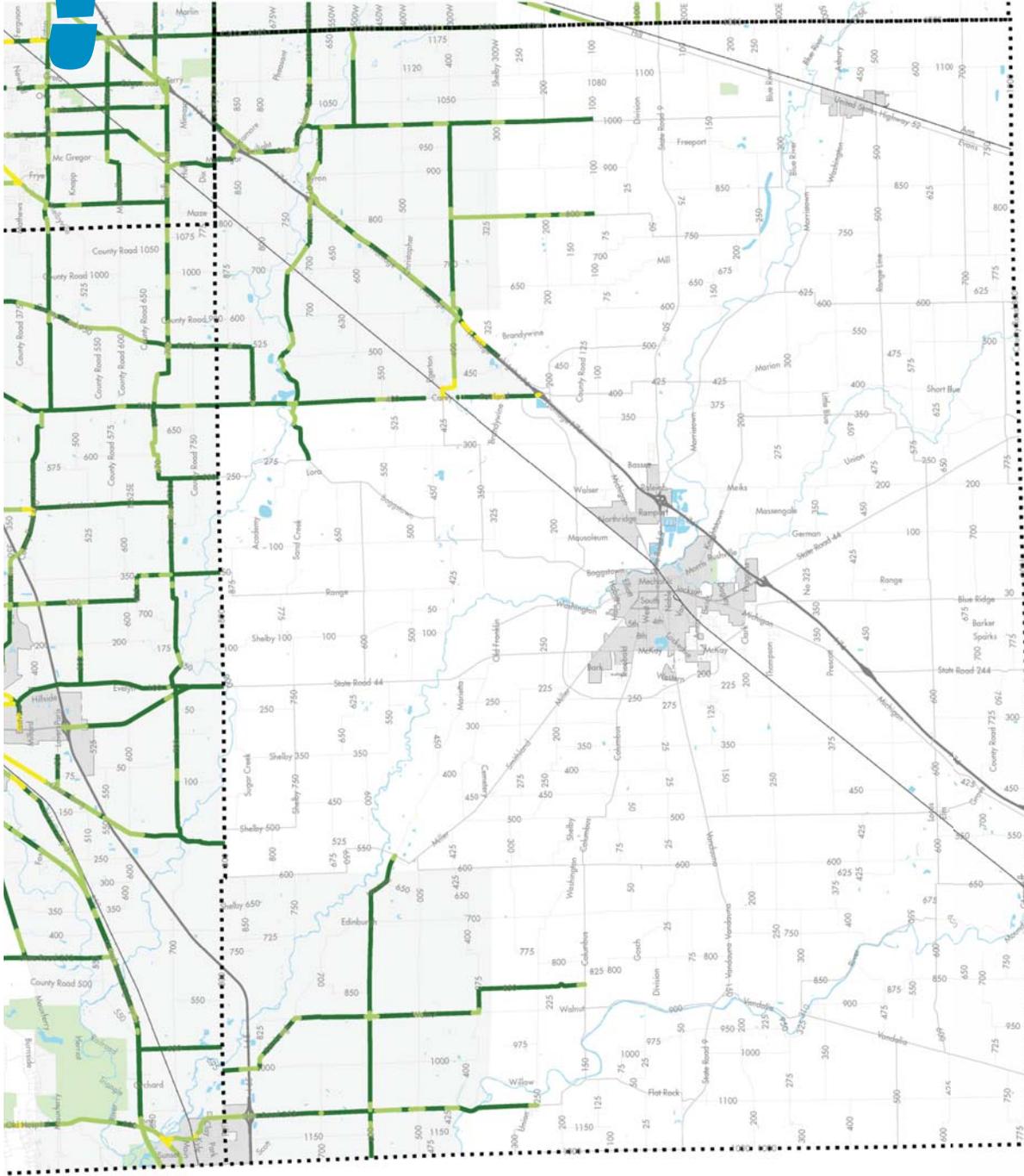


Figure AG-8. Priority Pedestrian Infrastructure Improvement Projects: Shelby County.



## PRIORITY IMPROVEMENT PROJECTS

SCALE



Miles

0 1 2 3 4

LEGEND

- Tier 1 Priority Project
- Tier 2 Priority Project
- Tier 3 Priority Project
- Tier 4 Priority Project
- Tier 5 Priority Project
- Not Tiered Priority Project
- Interstates
- Major Streets
- County Lines
- Waterbodies

## Interactive Mapping Dashboard

The interactive mapping dashboard was developed to display priority pedestrian improvement projects in Central Indiana and allow communities, governing agencies, local organizations, and the general public to consult and analyze it (Fig. AG-9). The dashboard shows gaps in the existing pedestrian network organized into five tiers of priority. While Tiers 1 and 5 appear in the map legend, there are no Tier 1 or Tier 5 priority projects, since no gap segments intersected with priority areas in the composite ranking strategy map.

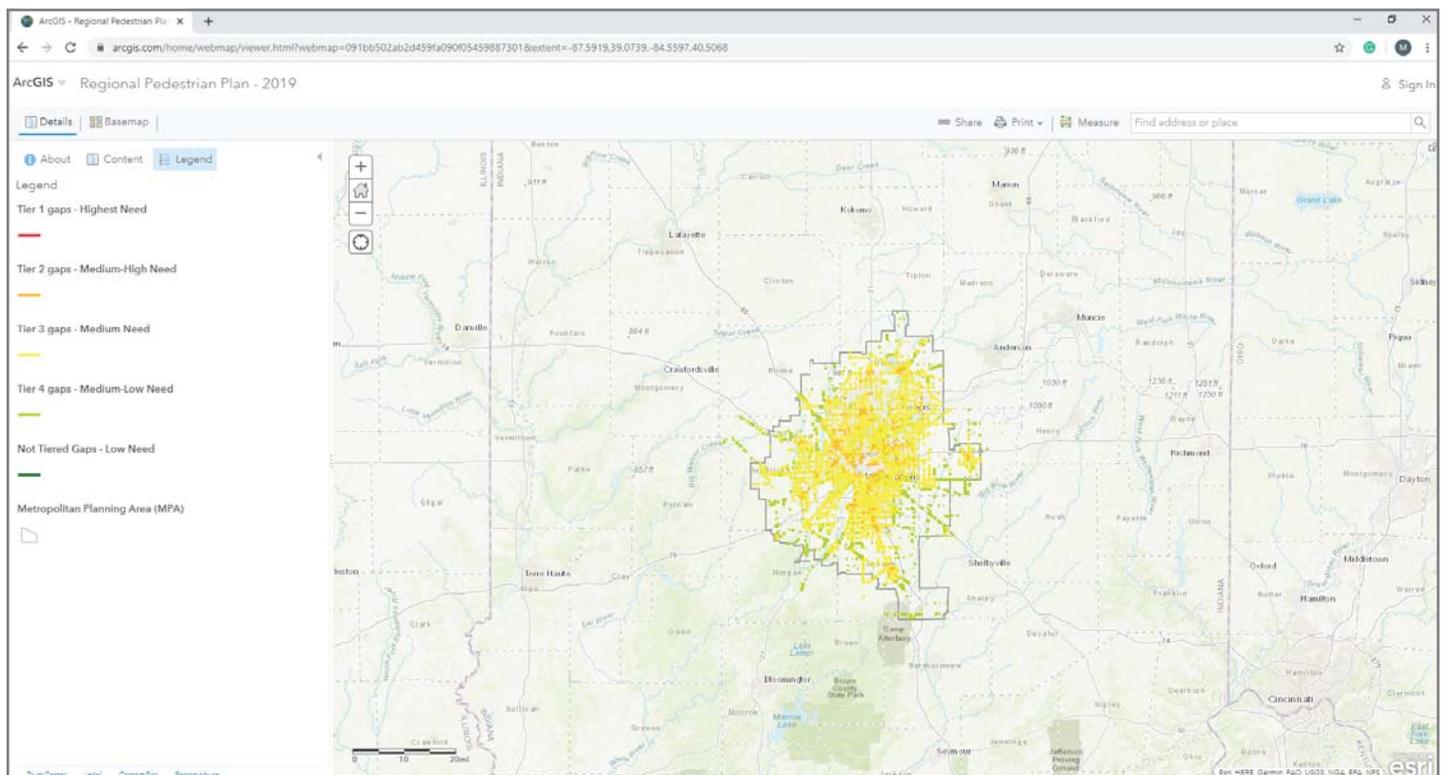


Figure AG-9. | The interactive mapping dashboard was developed to display priority pedestrian improvement projects in Central Indiana and allow communities, governing agencies, local organizations, and the general public to consult and analyze it.



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