INDY CONNECT
CENTRAL INDIANA'S
TRANSPORTATION INITIATIVE

CENTRAL INDIANA REGIONAL BIKEWAYS PLAN

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Life is like riding a bicycle - in order to keep your balance, you must keep moving. ~Albert Einstein

1.1 INTRODUCTION

Cycling is gaining momentum in Central Indiana. We are poised to become a community where bicycling is integrated into our transportation system in a way that allows cyclists to safely and effectively travel to more and more places. Funding has been identified for nearly 90 miles of bicycle specific infrastructure through 2015 (approximately 18 percent growth from our current system). The cities of Indianapolis and Carmel have been designated as bronze level bicycle friendly cities by the League of American Cyclists, and officials have indicated that they are seeking to move forward towards a silver level designation. Several cities and the Indianapolis Metropolitan Planning Organization (MPO) are considering complete streets policies that would demonstrate that our region recognizes the value of investing in infrastructure for all roadway users.

> Bikeway: A generic term for any road, street, path or way which in some manner is specifically designed for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.
>
> American Association of State Highway and Transportation Officials Guide for the Development of Bicycle Facilities, 1999

The Regional Bikeways Plan provides a practical and thoughtful strategy to expand the opportunities available to cyclists in Central Indiana through 2035. This plan is a component of the Indianapolis MPO's 2035 Long-Range Transportation Plan and it updates and builds on the efforts of the existing Indianapolis Bicycle and Pedestrian System Plan (2000), The Regional Pedestrian Plan (2006) and the Indianapolis Regional Center and Metropolitan Planning Area Multimodal Corridor and Public Space Design Guidelines (2007).

This plan seeks to provide information on the many benefits of investing in active transportation which can help increase residents' overall quality of life. As an end result, our investments will be making the community more livable for existing residents and businesses and also attract new ones. Some benefits of bicycle use are:

Health: Where more people opt to travel by bicycle, significant health advantages can be accrued. Less than a third of Indiana adults are able to meet the United States Surgeon General's recommended 30 minutes of moderate physical activity on most days. Ensuring adequate bicycling facilities are provided can help residents increase their physical activity and meet this goal. Physical activity is important in losing and maintaining healthy weight and it also decreases the risk of chronic diseases, including heart disease. Cycling can also aid in helping with arthritis and psychological disorders such as depression.

Investment in bicycle infrastructure can decrease health care costs and help Indiana residents live healthier lives. In the United States, the rate of obesity rose 10 percent from 1995 to 2009. Two thirds of Indiana's adults are either overweight or obese (65%). In 2000 Indiana spent $1.6 billion in obesity-related medical costs.

Economic Development: Trails have proven to be a highly desirable amenity to any community. Property values have increased based on proximity to trails. Bike-friendly cities, off-road paths, and scenic country roads where cyclists can ride in comfort aren't just good for the people who live in those places. They also attract tourists, bringing in money for the local economy. Bicycle transportation may not yet be mainstream in the U.S., but recreational bicycling is.

Air Quality: With more cyclists replacing trips that would have been made in motor vehicles, less pollution from auto exhaust is an important benefit of cycling. The U.S. Department of Transportation has a number of programs that are aggressively trying to improve air quality in our country for the benefit of everyone. *It All Adds Up to Cleaner Air* is a public education and partnership-building initiative developed by several federal agencies for the purpose of informing the public about the impact of their transportation choices on traffic congestion and air quality. More information on this program can be found at www.italladdsup.gov.

The types of bikeways discussed in this plan are listed below. Primarily trails, side paths and bike lanes have been proposed for implementation. Bicycle boulevards and cycle tracks are being considered in some jurisdictions.

Trails: Bikeways that are off-street and fully separated from motorized vehicle traffic; often shared with other non-motorized vehicle users.

Side Paths: A two-way bike path that is physically separated from motor vehicle traffic by a curb or buffer space. Side Paths are shared with other non-motorized users and typically located were a sidewalk would be placed within the right-of-way of a road.

Bike Lane: A bike lane is a portion of a roadway that has striping, signs and pavement markings for the preferential and exclusive use of bicycles.

Bicycle Boulevard: Streets with low traffic volumes where the through movement of bicycles is given priority over motor vehicle travel.

Cycle Track: Exclusive bicycle facilities adjacent to a roadway but physically separated from motor vehicle traffic by a physical barrier or other buffer. Cycle Tracks are also typically separated from pedestrian walkways.

1.2 PURPOSE

The MPO Regional Bikeways Plan has been developed as a component of the MPO's 2035 Long Range Transportation Plan (LRTP), which provides policy guidance regarding the use of transportation funding in the Indianapolis Metropolitan Planning Area. Accordingly, the Regional Bikeways Plan will need to be updated approximately every four years as major updates occur to the LRTP. The coordination of the two documents is necessary for the development of a fiscally constrained bikeways plan, which has not previously existed for the MPO. Similar to the manner in which the 2035 LRTP provides project rankings, the bikeways plan will define regional priorities for bike facilities such as trails, side paths and bike lanes.

The Indianapolis MPO is directly responsible for developing a long-range transportation plan and a short-range transportation improvement program. Regional transportation planning by legislative definition must be comprehensive (including all modes), cooperative (involving a broad array of stakeholders and other interested parties), and continuous (ever improving and evolving). This "3-C" process directs cooperation across all levels of government to develop transportation plans which provide for comprehensive, multimodal strategies to improve regional transportation system performance.

Nothing compares to the simple pleasure of a bike ride. ~ John F. Kennedy

2.1 GOALS AND VISION

VISION STATEMENT

The Regional Bikeways Plan will increase the options available to cyclists to encourage more trips by bicycle and create a safe network of bikeways that are integrated with pedestrian, transit and motor vehicle routes, to provide access to home, work, education, commerce and recreation within the Indianapolis Metropolitan Planning Area.

The vision statement for this plan was developed to incorporate the two primary goals that were set for the Regional Bikeways Plan to measure progress over the next ten years.

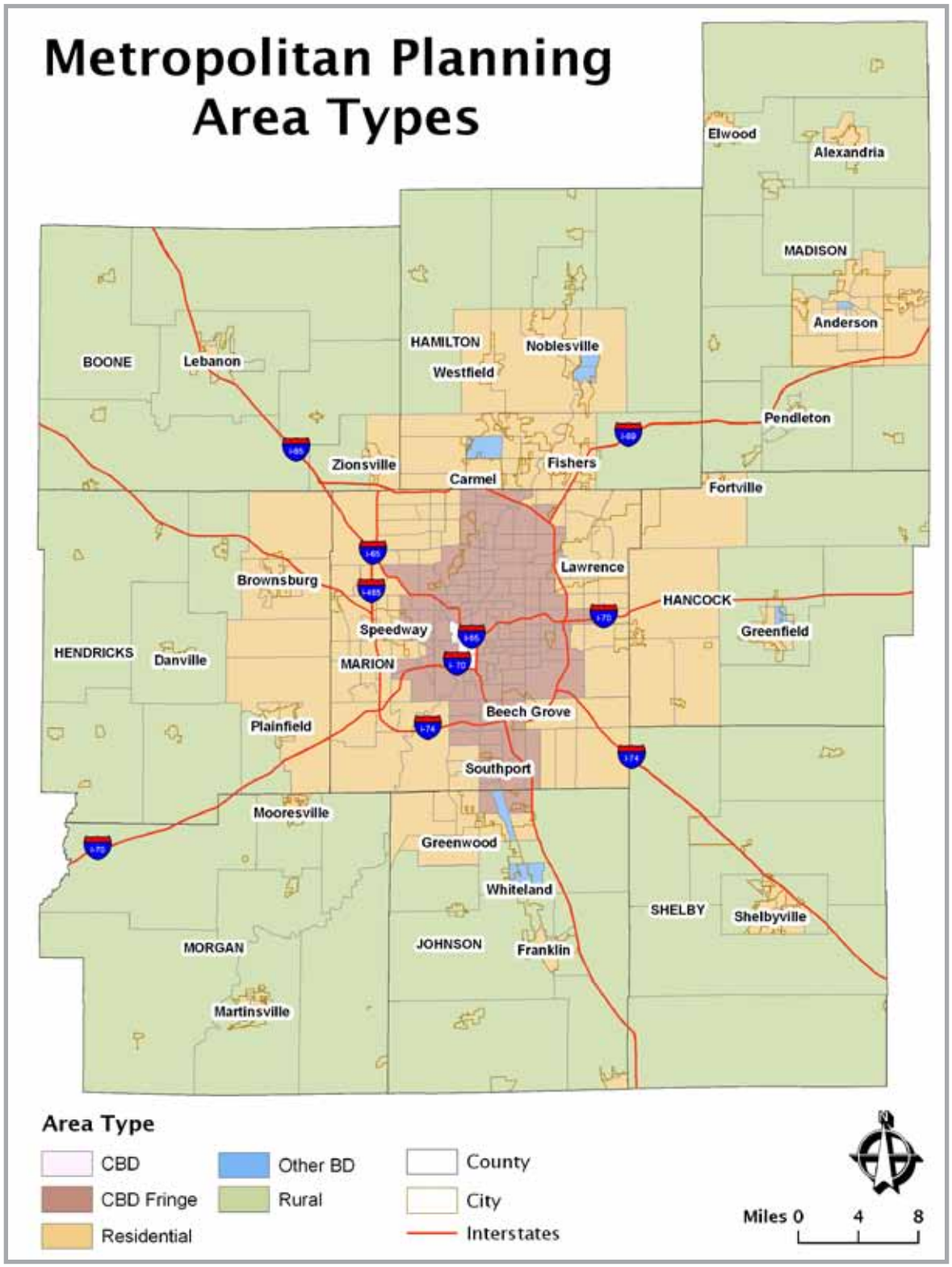
Bikeways Goal 1: Increase use of bicycling in the region for all trip purposes.

According to the 2009 Household Travel Survey, one percent of all trips within the nine-county area (Boone, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan and Shelby) are made using a bicycle. The survey was conducted jointly by the MPO and the Madison County Council of Governments. Within the Central Business District and other business districts, the mode share of bicycle trips is much higher than the overall average. Rural areas show a lower share than the more densely populated areas. This shows that the type of development in an area affects the amount of trips that are made by bicycle. The table below shows the existing share of trips that are made by bicycle in each area and the target increase for this plan between 2011 and 2021.

Table 2.1 Bicycle Mode Share Targets

	Current Bike Share	Target Bike Share
Central Business District	7.7%	15%
Central Business District Fringe	1.0%	3.0%
Residential	1.0%	2.0%
Other Business District	2.7%	6.0%
Rural	0.6%	1.0%
Overall	1.0%	3.0%

Map 2.1 Household Travel Survey Planning Area Types



This map displays the planning areas from the 2009 Household Travel Survey. The planning areas correspond to those named in Table 2.1.

Bikeways Goal 2: Improve the safety of cyclists throughout the region.

Safety is a primary concern of any transportation planning effort. This plan proposes to decrease the overall crash rate of bicyclists through the provision of facilities designed with safety in mind and a focus on effective public safety education. Public outreach is necessary to alert cyclists and motor vehicle operators how to safely interact and share the road when necessary.

Bicycle crash data has been assembled from ARIES (Automated Reporting and Information Exchange System). ARIES provides access to data and documents related to traffic collisions by using information gathered in police reports from the Indiana State Police, local law enforcement agencies, Indiana Department of Transportation, and Bureau of Motor Vehicles and is available to authorized users of the system.

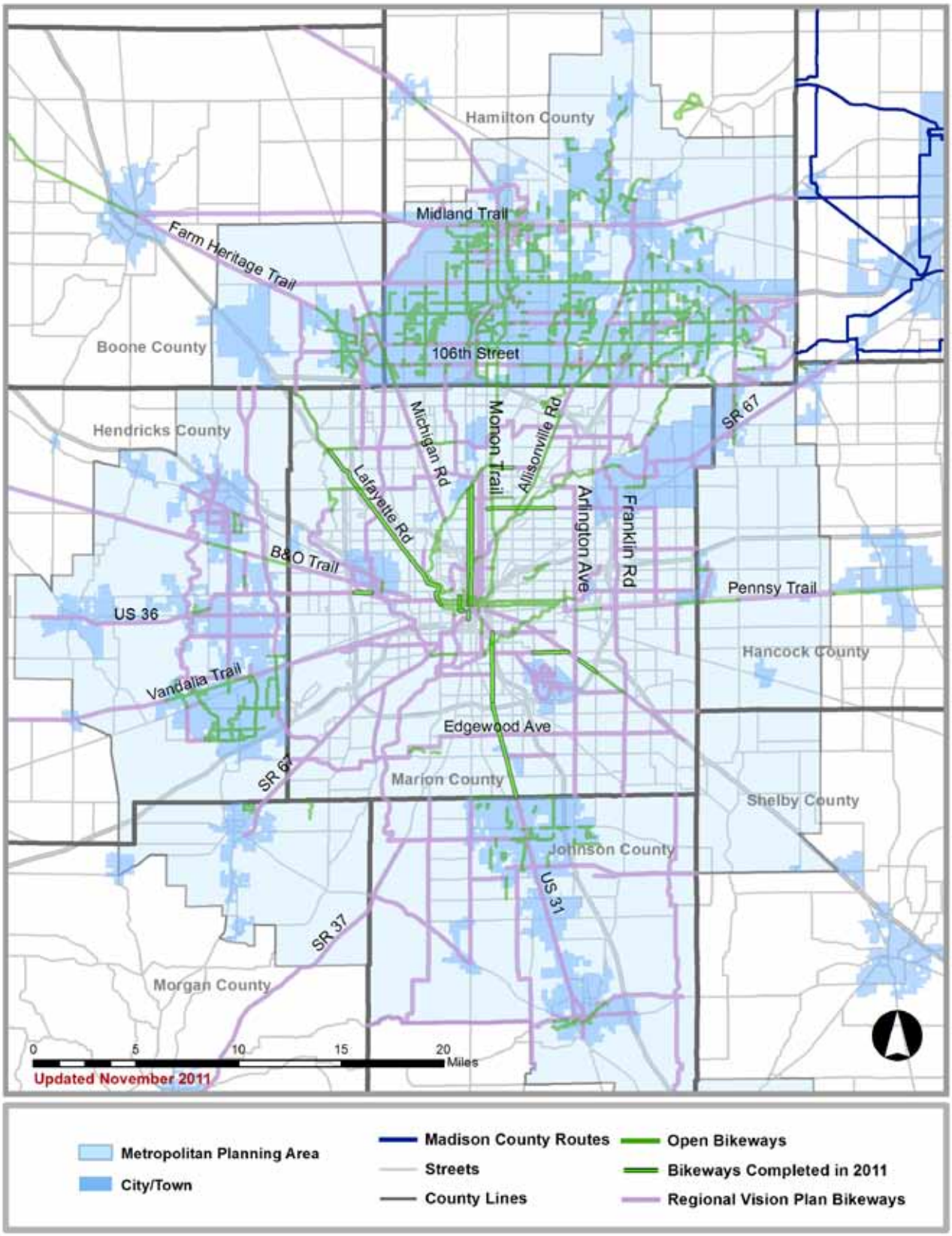
Many bicycle crashes are minor and do not involve injury or property damage. For this reason, it is suspected that bicycle crashes may be under-reported since they would require a police report to appear in the ARIES system. Table 2.2 shows the number of crashes reported by vehicle type within each county.

Table 2.2: ARIES Crash Data for Central Indiana Occuring in 2010

County	Motor Vehicles		Bicycles		Pedestrians		Total	
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal
Boone	7	2,650	0	1	0	13	7	2,664
Hamilton	18	11,755	0	30	1	39	19	11,824
Hancock	8	2,408	0	3	0	8	8	2,419
Hendricks	10	5,804	0	11	1	17	11	5,834
Johnson	7	5,232	0	8	2	21	9	5,261
Madison	12	6,166	1	23	3	35	16	6,224
Marion	57	47,459	2	182	14	313	73	47,954
Morgan	3	2,503	0	3	0	5	3	2,511
Shelby	16	1,660	0	8	0	13	16	1,681

Total fatalities and injuries are lower for bicycling than for motor vehicles or pedestrians. However, the number must be put in terms of a crash rate before they can truly be compared since there are many more motor vehicle trips than bicycle trips. The MPO will work to develop a proper crash rate for cycling to provide this comparison and also provide a measurement for safety improvement.

Map 2.2 Regional Bikeways Vision Plan



The following objectives apply to both bikeways goals:

Objective 1: Develop and maintain a safe and extensive network of bikeways throughout the Metropolitan Planning Area.

A Regional Bikeways Vision Plan shown as Map 2.2 was developed by the Bikeways Plan steering committee as a compilation of the highest priority bikeway routes and connections in the region. The Vision Plan is composed of 1,228 miles of existing and proposed bikeways and is the complete set of proposed bikeway projects considered for development by the Regional Bikeways Plan. Specific recommendations for which bikeways should be constructed through 2035 can be found in Chapter 5. Table 2.3 shows the number of miles of bikeways recommended for construction in this plan based on available funding.

Table 2.3 Miles of Recommended Facilities

Facility Type	Existing	2011-2015 Time Period 1	2016-2025 Time Period 2	2026-2035 Time Period 3	2035 Total Includes Existing
Trails	241.2	20.6	11.1	26.5	299.4
Side Paths	197.6	31.0	10.7	9.9	249.2
Bike Lanes	30.4	37.9	62.0	25.6	155.9
Total Network	469.2	89.5	83.8	62.0	704.5

Objective 2: Provide supporting facilities to make bicycle transportation more convenient.

Providing a network of bike routes will be much more successful if the necessary supporting infrastructure and programs to compliment the network are also provided. This includes adequate bicycle parking at destinations, showers at employment centers, convenient bicycle repair services, employee programs for flexible work schedules and integration of bicycle and transit services. An example of the type of supporting facilities necessary for commuters is the Indy Bike Hub YMCA, opening in September 2011 in the City Market in downtown Indianapolis. The facility contains indoor bike racks, lockers and showers. More information about the bike hub can be found in Chapter 4. Local jurisdictions can help with this objective by considering ordinances that would require bicycle parking, similar to parking requirements for motor vehicles.

Businesses are encouraged to provide bicycle incentives as benefits to their employees and can become eligible for a Bicycle Friendly Business designation from the League of American Bicyclists. In 2008, Congress passed a Bicycle Commuter Act that became effective on January 1st, 2009. The Act allows employers to provide an incentive of up to a $20 per month related to an employee's bike commuting, such as bike parking facilities, shower facilities and maintenance, and then deduct that amount from their taxable income. More information on both of these programs can be found at www.bikeleague.org.

Objective 3: Identify partners to provide bicycle education, enforcement, and encouragement programs.

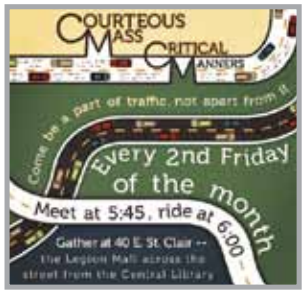
As bikeways are completed throughout the region, more people will be encouraged to ride, and new programs will be needed to educate bicyclists and motorists about how to safely share the roadway. The MPO, local governments and other local groups will need to partner together in efforts to provide safety training and education. One of the best forms of encouragement for new cyclists is participating in group bike rides. Central Indiana is host to several of these exciting events. Here are a few:

2011 Bike to Work Day

B2WD: Bike to Work Day is a hosted by several cities in the region each May. In Indianapolis there are several group rides from various locations that converge at Monument Circle downtown. A number of sponsors are present with food and giveaways. The Pedal & Park program provides a free, supervised bike parking corral while cyclists attend the event or go to work.


N.I.T.E. Ride
Photo by Connie Szabo Schmucker

N.I.T.E. Ride: The Navigate Indy This Evening ride is a full day of activities culminating in a 20-mile night time bicycle tour on well-lit roads through downtown Indianapolis beginning and ending at IUPUI's Michael A. Carroll Track and Soccer Stadium. After the tour, a celebration is held with food and live music. The event includes a L.I.T.E. up your bike contest that brings out the creativity of participants. The N.I.T.E. ride is organized by the Central Indiana Bicycling Association (CIBA).



CM/CM Flyer

CM/CM: INDYCOG launched the Courteous Mass, Critical Manners ride in July 2011. CM/CM emphasizes being a part of traffic, instead of apart from it, to create a visible and positive example of cyclists sharing the roadway with motor vehicles. As of this writing, CM/CM meets every 2nd Friday of the month at the American Legion Mall, across from the Central Public Library in downtown Indianapolis.


Tour de Carmel- Monon Bridge

St. Vincent Tour de Carmel: The Tour de Carmel isn't a race. Instead it is bicycle tour offering 10- and 20-mile routes designed to showcase the community's cycling paths, business district, parks and recreation areas. The ride hosted by Carmel Clay Parks each September.

Tour de Cure: The annual Tour de Cure, held by the National Diabetes Association, is a chance to cycle at the Indianapolis Motor Speedway. There are four courses designed for cyclists of all ability levels. Each course offers rest stops, lunch is held in the garages and live entertainment is provided.

Mayor's Bike Ride (Indianapolis): A family friendly bike ride that features a full length ride of a little over 10 miles and a shorter loop option as well. The ride is held each June to highlight new bikeways that have been constructed. In 2010 the ride featured the Allisonville Road bike lanes and in 2011 the ride was held on Lafayette Road.

B&O Bike Tour: This ride is held each June and winds its way through Hendricks County crossing the future B&O Trail several times. Riders can choose from 12-, 25-, 45- or 63- mile loops. The ride also includes a team competition and is a fund raiser for the completion of the B&O Trail itself. In 2011 three miles of the trail were completed and opened for use to cyclists, pedestrians and horseback riders.

Tweed Ride: The Tweed Ride was introduced in Indianapolis in 2010 by INDYCOG. Held each October, this a themed ride that celebrates the British tradition of "slow biking". Participants wear their "finest" tweed or other vintage clothing. There are competitions for the Tweediest Chap and Lady and also for the best British vintage bike.

More information about bicycle rides in Central Indiana can be found from on the websites of Bicycle Indiana, CIBA and IndyCOG:

www.BicycleIndiana.org

www.CIBAride.org

www.theIndyCOG.com

Tour de Cure

2011 Mayor's Bike Ride

B&O Trail

Tweed Ride

The vision statement, goals and objectives were developed to be complimentary to the adopted goals and objectives of the 2035 LRTP. The goals of the 2035 LRTP are shown in Table 2.4. The goals of the Regional Bikeways Plans also specifically support several of the policy statements from the 2035 LRTP by promoting safety, expanding access to multimodal transportation options and promoting environmental stewardship while improving the region's quality of life.

Table 2.4 2035 LRTP Goals and Objectives

2035 LRTP Goals and Objectives	
Goal 1:	Preserve, make safe and improve utilization of the existing transportation system.
Objective 1:	Maintain the existing network in a state of good repair.
Objective 2:	Use cost-effective transportation system management, transportation demand management, intelligent transportation system, and operational improvements and techniques to increase the efficiency and safety of the existing transportation system.
Goal 2:	Enhance regional transportation mobility and accessibility.
Objective 1:	Provide cost-effective transportation improvements to address identified mobility problems and reduce growth in traffic congestion.
Objective 2:	Provide appropriate travel options and choice for all users, including auto, transit, paratransit, bicycle and pedestrian.
Objective 3:	Improve accessibility to regional employment and activity centers.
Objective 4:	Enhance connections between modes.
Objective 5:	Support commercial goods movement within and through the region.
Goal 3:	Plan, design, and implement coordinated transportation system improvements consistent with regional values.
Objective 1:	Partner with state and local jurisdictions to ensure transportation and land use are complimentary.
Objective 2:	Enhance transportation system sustainability and minimize impacts of the transportation system to the built and natural environment.
Objective 3:	Support regional economic development.
Objective 4:	Support transportation security.

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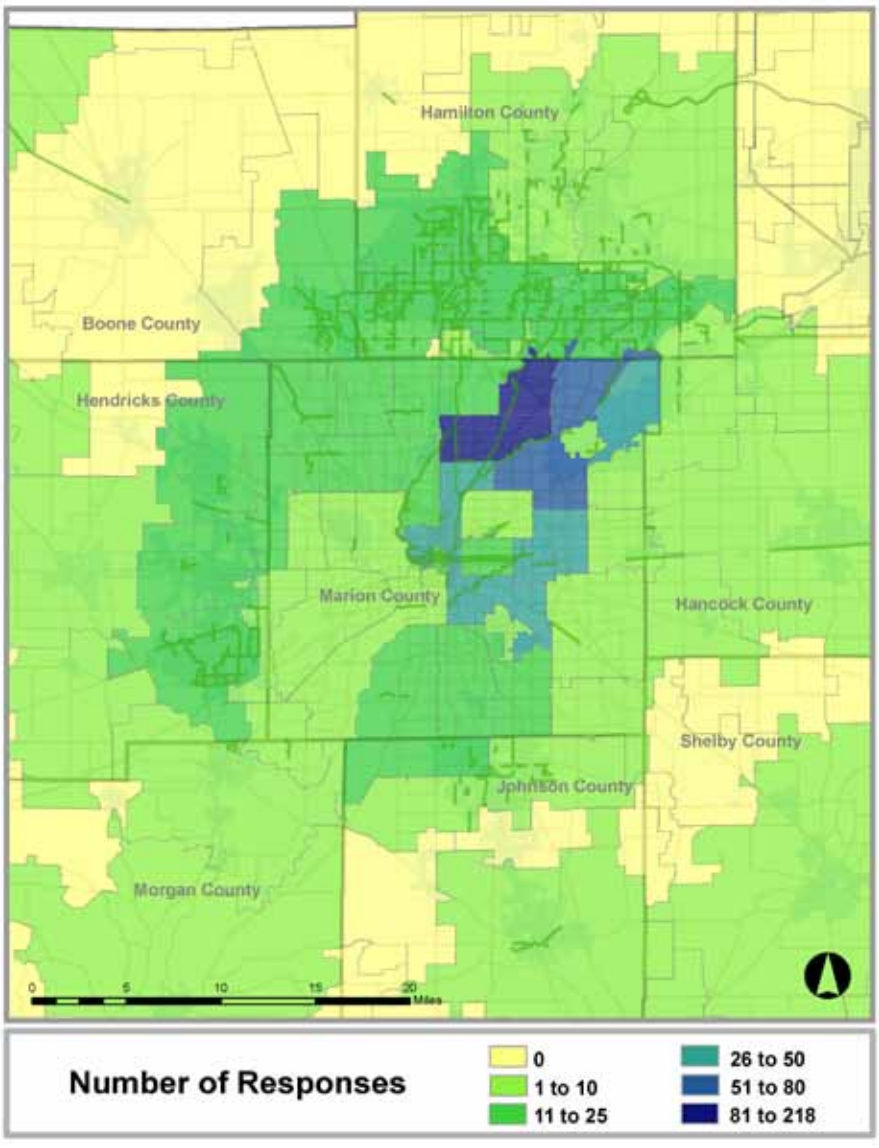
Ride as much or as little, or as long or as short as you feel. But ride. ~ Eddy Merckx

3.1 PUBLIC INPUT

The Regional Bikeways Plan continues to place the same importance on public outreach that Indy Connect has become known for. Input was sought at six public meetings that were held around the region; six neighborhood meetings; on Monument Circle during bike to work day; and through a public survey. The public survey was made available online and also in hard copy at meetings and events. As a result, over 1,088 survey responses were collected. The survey was translated into Spanish, and 2.3 percent of responses were in Spanish.

Map 3.1 Zip Codes of Survey Respondents



The survey included two sections. The first asked for information about the respondent and their cycling behavior; the second section asked respondents for their opinions on funding, safety and investment in bikeways.

Survey respondents were asked to give their zip code. Map 3.1 displays the number of responses collected from each zip code in the Central Indiana area. Responses were not distributed evenly throughout the region and the highest number of responses (218) came from the zip code 46220; which includes parts of Broad Ripple and BRAG.

Table 3.1 Gender Response

Gender	
Male	Female
57.4 %	42.6 %

Figure 3.1 Age of Respondents

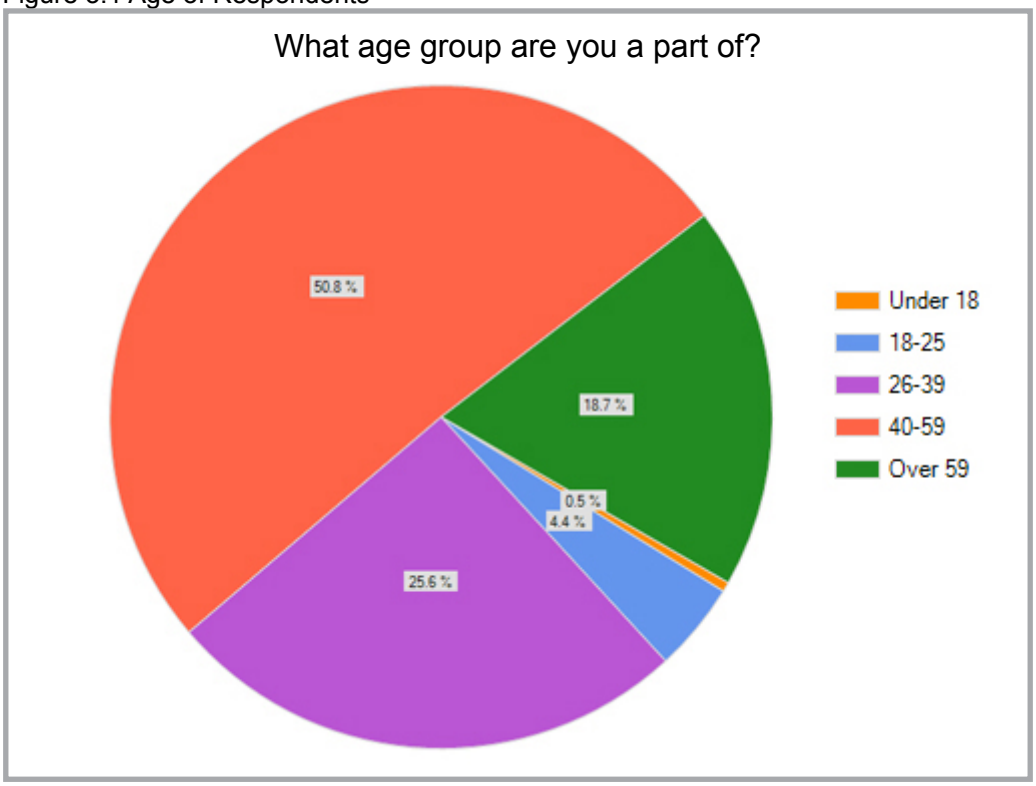


Figure 3.1 shows the age of respondents. Thirty percent of respondents in the 26 to 39 age group said that they ride for functional trips at least 1-3 days a week compared to 24.6 percent of the 40 to 59 age group.

Figure's 3.2 and 3.3 represent the responses to questions about how often people ride their bikes. Just under 50 percent of respondents ride their bike at least one time per week for recreational purposes compared to 25 percent who ride their bike at least one time per week for functional trips. In both cases, males responded that they ride more frequently than females by about 3 to 1. Narrowing this gap is often seen as an important indicator of a successful bikeways program.

> "Women are considered an 'indicator species' for bike-friendly cities for several reasons. First, studies across disciplines as disparate as criminology and child rearing have shown that women are more averse to risk than men. In the cycling arena, that risk aversion translates into increased demand for safe bike infrastructure as a prerequisite for riding. Women also do most of the child care and household shopping, which means these bike routes need to be organized around practical urban destinations to make a difference."
>
> **Linda Baker. "How to get more cyclists on the Road."**
> **Scientific American Magazine , October 16, 2009**

Figure 3.2 Ridership for Recreation

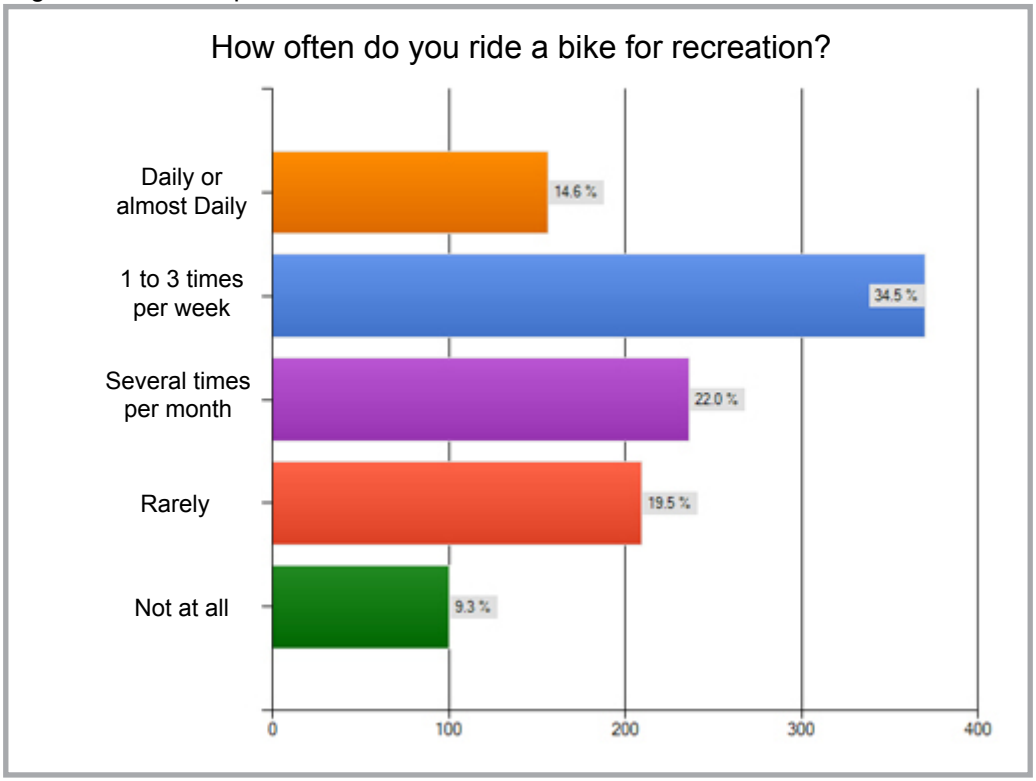


Figure 3.3 Ridership for Functional Trips

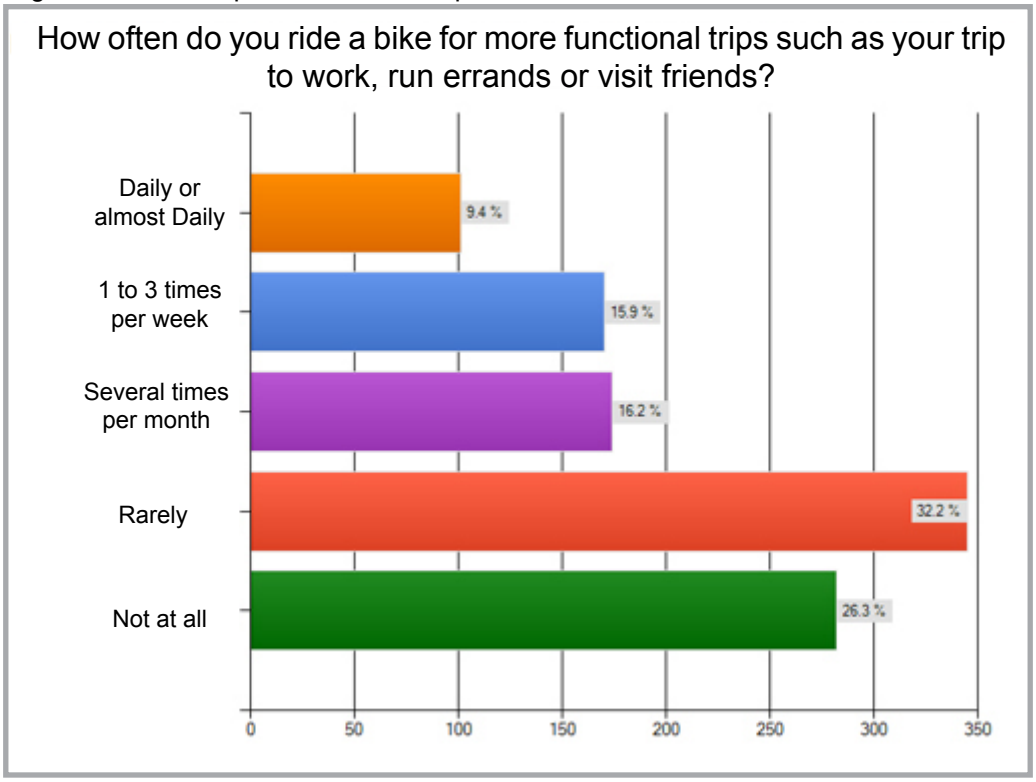


Figure 3.4 Top Reasons for Riding

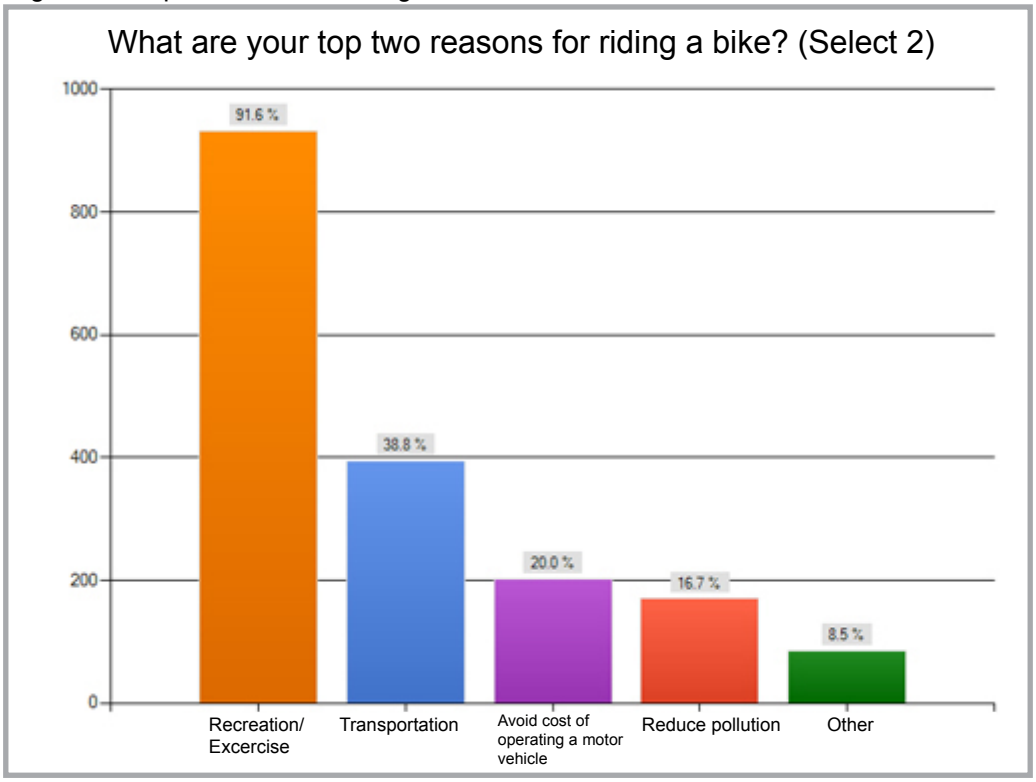


Figure 3.4 displays responses about why people chose to ride their bike. Avoiding the cost of operating a motor vehicle or reducing pollution appear to be much less of an incentive for riding than the appeal of recreation and exercise.

Figure 3.5 Barriers to Riding

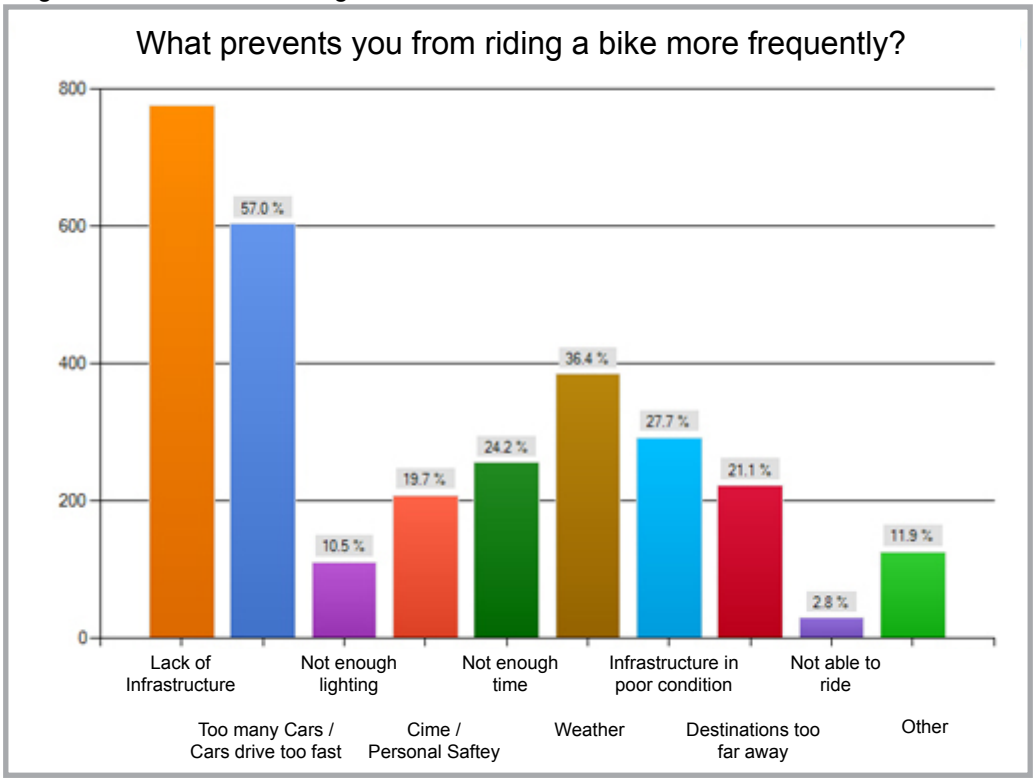


Figure 3.5 shows the responses about what prevents people from riding more frequently. Over 70 percent of respondents cite lack of infrastructure as a reason why they don't ride more. Nearly 65 percent of women and 54 percent of men responded that motor vehicles were a reason they don't ride more. Two times as many women responded that crime/personal safety was an issue compared to men.

Figure 3.6 Barriers to Riding

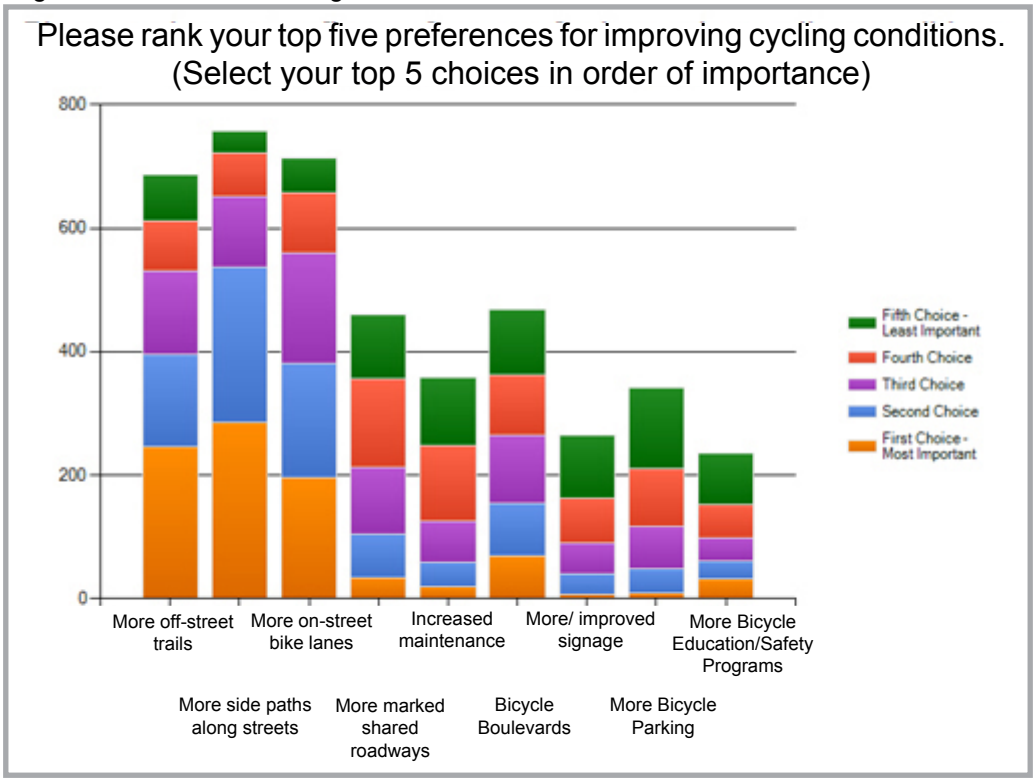


Figure 3.6 shows responses regarding where respondents prefer to see cycling conditions improve. The majority of responses are related to increasing the number of safe routes by adding trails, side paths, bike lanes and even bicycle boulevards/marked-shared roadways. All responses were considered important aspects of creating a safe bikeways system and the question was designed to distinguish the relative importance of each item.

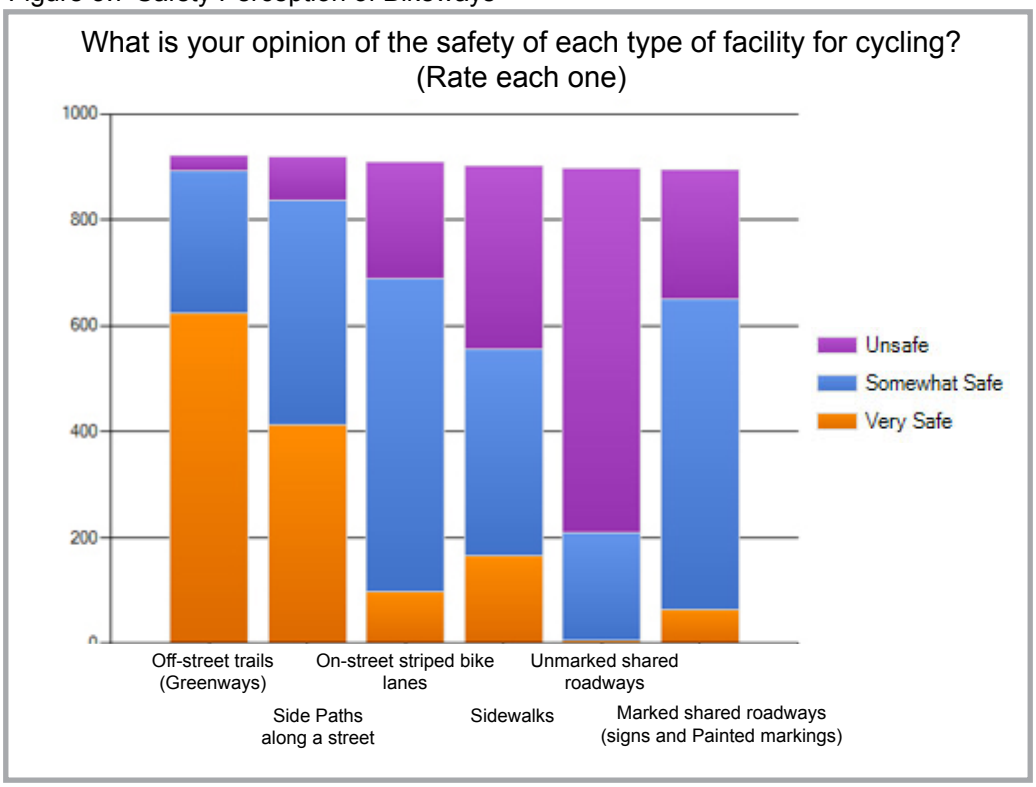
Ninety-Three percent responded "yes" to the following two questions from the Bikeways Survey:

"Do bicyclists have the same rights and responsibilities as motor vehicle drivers when on the roadway?"

"If cycling conditions improved to the point where safety was of minimal concern and your destinations were within a convenient distance, would you consider using a bike for more trips such as your trip to work, running errands or visiting friends?"

Figure 3.7 relates to the survey question that asked the respondent's opinion of the safety level of each type of bikeway. Off-street trails were viewed as the safest type of bikeway by respondents. Although the majority of men and women tended view them as "very safe", about 35 percent of women viewed off-street trails as only "somewhat safe" (10 percent higher than men). Women responded that sidewalks are a "very safe" cycling facility twice as much as men. Bike lanes appear to be widely viewed as "somewhat safe" equally by men and women.

Figure 3.7 Safety Perception of Bikeways



There were 339 text-based comments recorded from the survey and the chart below summarizes what topics were commented on the most. Some comments related to multiple categories and are reflected in the percentage shown for each category addressed by the comment.

Table 3.1 Summary of Open Survey Responses

Text-Based Survey Responses	
Category	Percent
Infrastructure Requests-Specific Routes	20.0%
Safety Concerns	19.5%
Trails	18.6%
General Support or Opposition to the plan	13.9%
Bike Lanes	13.0%
Education and Enforcement	12.7%
Sidewalks	5.9%
Transit	3.8%
Side Paths	3.0%
Bike Parking	2.1%
Health	2.1%
Bike Boulevards & Marked-Shared Roadways	1.2%
Other	15.0%

The following are observations noted in the text-based responses to the survey. Since comments often addressed multiple issues they have not been categorized.

Responses related to education and enforcement indicated a strong need to develop a mutual respect between motor vehicle operators and cyclists when sharing the roadway.

Many respondents stated that motor vehicle traffic is their primary safety concern when making a trip by bicycle. Some respondents felt that drivers had a general frustration with cyclists while others said that driver distractions were a concern.

Both drivers and cyclists indicated that there were several cyclist behaviors that they found frustrating including: not stopping at red lights and stop signs; passing a line of stopped cars where there is no bike lane; and impeding the flow (speed) of traffic.

A large number of respondents requested completion of trails projects such as the Fall Creek Trail, Pennsy Trail and B&O Trail. There was also a significant request for routes that allow for safe travel east-west though Marion County and for bikeways on the south side of Indianapolis.

Responses concerning bike lanes were not definitively in favor of or against adding more bike lanes in our bikeways system. Many respondents supported bike lanes as a safe way to travel or commute. Maintenance (street sweeping) and a concern when lanes are adjacent to parked cars were the top two issues noted after safety concerns about motor vehicles.

Lack of bike parking was noted as a barrier to making some trips. Showers and storage areas for clothes were also requested.

Trails that link to destinations outside of Central Indiana were described as great opportunities for recreation or tourism by some. Others described them as a secondary need until we build a substantial bikeways network within our region.

A few respondents felt less comfortable on greenways due to crime concerns. Others noted that the visibility of a bike lane or side path from a public street increased safety due to possible criminal activity.

Some regular cyclists noted that they travel at higher speeds (18-24 mph) for exercise or commuting. Many of them use street routes for this to avoid potential conflict with pedestrians, dogs, children and other non-cyclists on greenways, side paths and sidewalks.

Many respondents indicated that they have to load their bikes up and drive to a park or greenway where it is safe for them or their children to ride and expressed a desire to avoid the car trip in order to bicycle.

Society is singularly in debt to the bicycle, since bicycle mechanics developed the airplane as well as the automobile. ~ James E. Starrs

4.1 PRESENT CYCLING NETWORK

Interest in cycling has been growing in Central Indiana and the momentum is expected to build. Several cities and towns have already begun investing in bicycle infrastructure. Central Indiana has 469 miles of existing bikeways as a result of this investment.

Indianapolis is proud to be recognized as a “Bicycle Friendly Community” by the League of American Bicyclists. This bronze-level designation was given in 2010 and Indianapolis is actively pursuing a silver level designation in the coming years. Many stakeholders in health, transportation and senior citizen’s organizations have come together to support the City’s commitment to improving cycling amenities.

The Indy Parks Greenways system in Indianapolis is an extensive network of multi-use trails that has received national design and landscaping awards. Today, Indianapolis has more than 59 miles of trails. The oldest trail was created in 1836 and is known as the Central Canal Towpath. When complete, the Greenway System will have more than 200 miles of trails in Marion County. The Monon Trail, completed in 2003, measures approximately 10.4 miles in Marion County and is one of the busiest greenways in the Indy Parks system with over 2.3 million users recorded between 9 checkpoints in Marion County in 2010.

Fall Creek Trail in Skiles Test Park

By start of 2012, Indianapolis will have over 60 miles of bike lanes. The New York/Michigan Street and Allisonville Road bike lanes were developed with federal Transportation Enhancement funds. The Westlane Road, 52nd Street, Allison Pointe, East Street, Illinois Street, Lafayette Road, Raymond Street and Ritter Avenue bike lanes were included as part of the City’s resurfacing program. Southeastern Avenue and Cold Springs Road were added as part of a sanitary sewer project. The City has plans to add over 200 miles of bike lanes to city streets as part of a twelve-year Indianapolis Bikeways Plan.

The brand new Indy Bike Hub YMCA is located in the heart of Indianapolis in the east wing of the City Market. The facility offers safe, secure, indoor parking for 148 bicycles, showers, locker rooms featuring expanded and vented lockers, strength equipment, free weight area and a full-service bike shop operated by Bicycle Garage Indy (BGI) featuring bicycle repairs, accessories and rentals. YMCA members receive full use of the new facility and there is also a bike specific membership option. Cyclists can purchase a 4-hour “bike park pass” to secure their bike in the indoor lockers while visiting the downtown.

The Indianapolis Cultural Trail: A Legacy of Gene & Marilyn Glick is a world-class urban bike and pedestrian path that connects neighborhoods, Cultural Districts and entertainment amenities, and serves as the downtown hub for the entire Central Indiana greenway system. The Cultural Trail will also connect with the Monon Trail, allowing visitors easy access to Broad Ripple Village from downtown. The Cultural Trail is made possible by a large public and private collaboration led by the Central Indiana Community Foundation, the City of Indianapolis and several not-for-profit organizations.

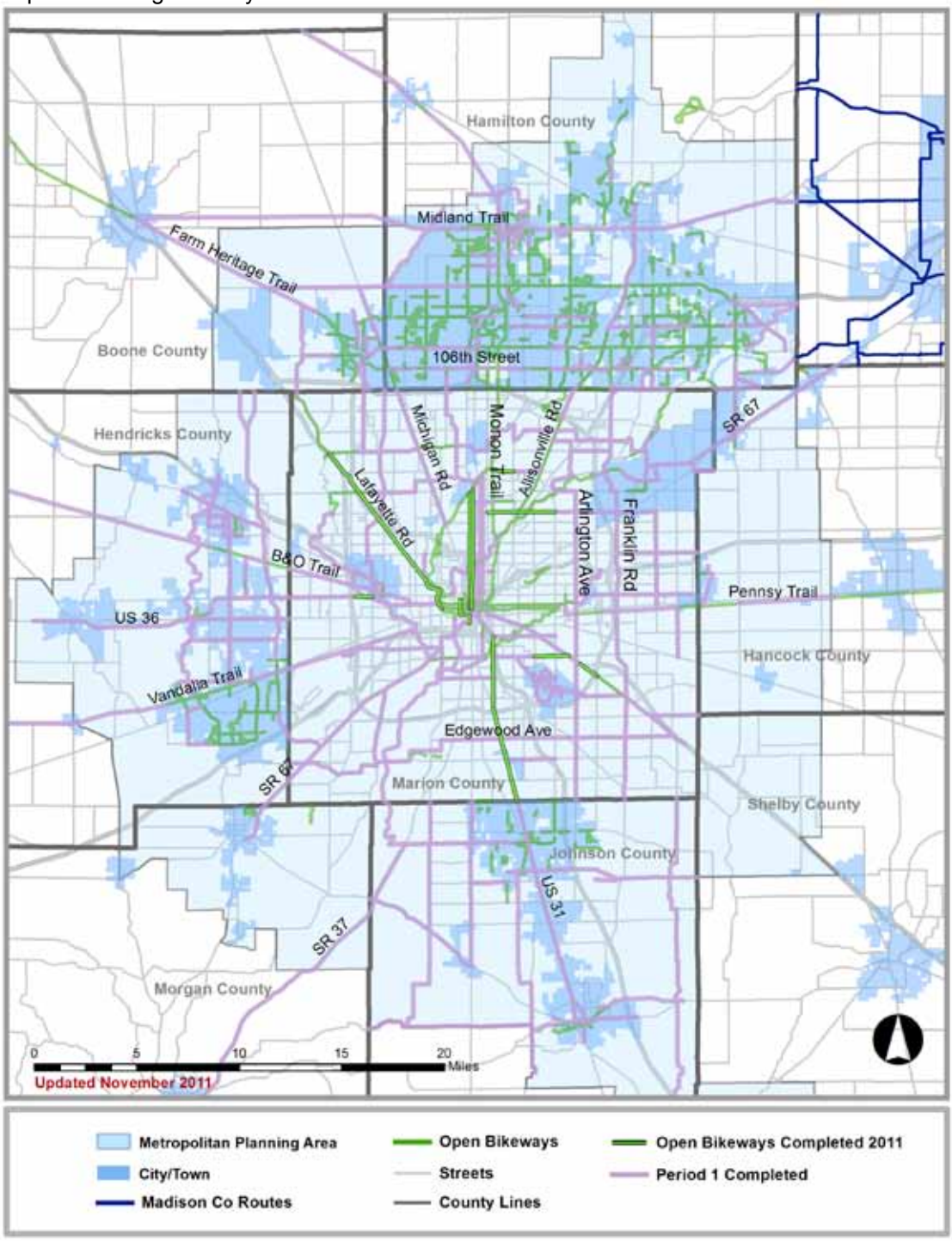

Indianapolis Cultural Trail

The City of Indianapolis enacted several laws relating to bicycles in 2009. The laws give bicycles the exclusive right to operate within bike lanes and bike paths with a few exceptions. Driving, standing, or parking on bicycle paths or lanes is prohibited, and motor vehicles must give a minimum safe distance of three feet when passing a cyclist in a bike lane.

With over 267 miles of existing bikeways, the communities within Hamilton County have invested heavily in improvements that help cyclists get around. The City of Carmel has been aggressively pursuing a silver level “Bicycle Friendly Community” designation by the League of American Bicyclists. Carmel was recognized with the bronze-level designation in 2006. 5.2 miles of the Monon Trail run north-south through Carmel. The trail extends up to State Road 32 in Westfield. The Carmel Access Bikeway (CAB) System utilizes city streets, multi-use paths and bike lanes to comprise a system of loops and express routes for cyclists over 100 miles long. The five CAB loops are identified by name and color and are geared toward recreational rides. Each loop begins and ends at a trail head, but riders familiar with the system can begin anywhere along the loop. Express routes are direct routes intended to help cyclists, especially commuters, traverse Clay Township more efficiently and safely. There are six north-south routes and two east-west express routes.

The Town of Fishers first began building its multi-purpose trail system in 1996. Since then the Town has constructed 65 miles of multi-purpose paths and trails linking residential, commercial and recreational areas throughout the community. The Town’s goal is to construct multi-purpose paths along all major roadways. Fishers has also outlined seven (7) riparian corridors to be used as a greenway trail system that will tie the multi-purpose paths and various town amenities together. When the multi-purpose path/trail system is complete the Town will offer 250-300 miles of multi-purpose paths/trails.

Map 4.1 Existing Bikeways



Map 4.1 shows the existing bikeways in Central Indiana. Many of the Cities in Hamilton County are bike friendly due to their heavy investment in bikeways. Several completed segments of the Indianapolis Greenways System are shown as well as a few of the bike lanes in their growing network. The Town of Plainfield, in Hendricks County, has a trails system over 30 miles long, and several other cities have been making significant investments in bikeways.

CHAPTER 5 | PLAN RECOMMENDATIONS

5.1 PLAN RECOMMENDATIONS

This plan proposes an interconnected system of bikeways spanning more than 700 miles. These recommendations strive to achieve the primary goals of creating a safe and connected system of bikeways and increasing the number of trips made by bicycle. The plan is also fiscally constrained and designed to represent the region's collective priorities. Further details about the process of project selection will be explained in chapters 6-11. Table 5.1 shows the miles of facilities in the recommended bikeways network.

Table 5.1 Miles of Recommended Facilities

Facility Type	Existing	2011-2015 Time Period 1	2016-2025 Time Period 2	2026-2035 Time Period 3	2035 Total Includes Existing
Trails	241.2	20.6	11.1	26.5	299.4
Side Paths	197.6	31.0	10.7	9.9	249.2
Bike Lanes	30.4	37.9	62.0	25.6	155.9
Total Network	469.2	89.5	83.8	62.0	704.5

*For bike lanes, total miles represent roadway centerlines (e.g. bicycle lanes on both sides of the roadway are not counted separately)

* Facilities constructed since January 1, 2011, are included in Time Period 1

The recommendations of this plan are expected to guide the use of local and federal funding through 2035. The projects shown in Map 5.1 and the tables found in this chapter will require additional evaluation during the implementation process to determine feasibility and additional analysis will be needed in some cases to determine the optimum bikeway facility design for specific locations. Like other public projects, neighborhood involvement will also be an important part of the evaluation process. Some locations shown on the map may require, after more detailed analysis, different or more costly improvements and therefore, may be built in a later time period. However for each project, the first assumption will be that the recommendations of the Regional Bikeways Plan will be implemented as shown.

Tables 5.2, 5.3 and 5.4 show the recommended projects in the three time periods of the Regional Bikeways Plan. Projects in Time Period 1 are funded projects that have been identified from a variety of sources, including the 2012-2015 Indianapolis Regional Transportation Improvement Plan, and therefore more specific detail is known about their start and end points. For Time Periods 2 and 3 the segment lengths and location are demonstrative. It is expected that the entity constructing the bikeway will determine the appropriate length to be constructed during each phase of the project.

Map 5.1 Plan Recommendations

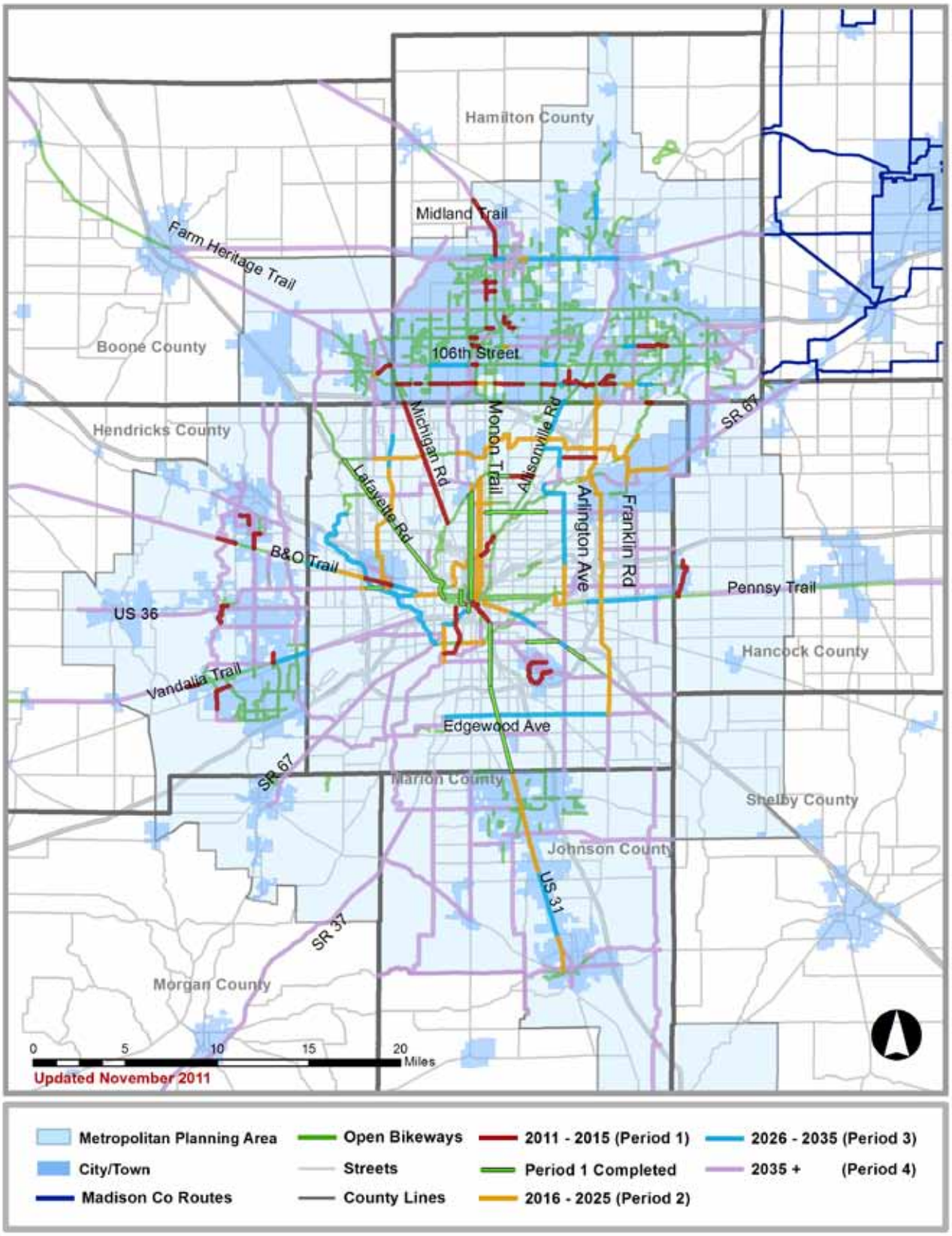


Table 5.2 Completed Projects for Time Period 1: 2011 to 2015

Project ID	Facility Name	Location	Year	Length	Cost	Funding
Trail Projects						
Side Paths						
MAR086b0	Indianapolis Cultural Trail	Capitol Ave South of US 40	2011	0.4	$1,950,000	Local/ Private/ TIGER
MAR086a0	Indianapolis Cultural Trail	West Segment through IUPUI and along US 40 to West St	2011	0.9	$4,500,000	Local / Private/ TIGER
MAR095A0	Michigan Road	Preliminary Engineering for Michigan Road/Township Line Road/Westlane Road pedestrian enhancement	2011	n/a	$67,500	TIGER
Bike Lanes						
MAR003a1	10th Street	Bike Lanes from Lynhurst Dr to I-465	2011	1.5	$511,842	Local
MAR035a1	46th Street	Bike Lanes from College Ave to Emerson Ave	2011	1.5	$527,712	Local
MAR023a0	Broad Ripple Avenue	Bike Lanes from the Monon to Keystone	2011	1.0	$358,564	Local
MAR044a0 MAR085a0	Capitol Avenue/ Illinois Street	Bike Lanes from New York Street to Westfield Blvd	2011	11.4	$311,813	TE
MAR201a0	Cold Spring Road	Bike Lanes from Lafayette Rd to 30th St	2011	1.2	$408,450	Local
MAR089a0	Lafayette Road	Bike Lanes between New York Street and 71st St	2011	9.7	$3,251,870	Local
MAR123a4	Southeastern Avenue	Bike Lanes from just east of Arlington Ave to N. Five Points Road	2011	1.0	$343,000	Local
MAR116a1	Raymond Street	Bike Lanes from Raymond St to Southeastern Ave	2011	1.8	$642,145	Local
MAR118a0 MAR090a0	Shelby Street / Madison Avenue	Bike Lanes and Cycle Track from Virginia Ave to Madison and bike lanes on Madison from Shelby to the Johnson County Line	2011	8.2	$2,826,802	Local

Table 5.3 Plan Recommendations for Time Period 1: 2011 to 2015

Project ID	Facility Name	Location	Description	Length	Cost Estimate
Trail Projects					
HEN032a0	Avon Parks	0.303 mile trail segment going east from CR 625 E, just north of SR 36	New Construction	0.3	$315,835
HEN061a0	County Road 625 E Greenway	Trail Segment crossing US 36 along CR 625 E	New Construction	0.3	$284,493
HEN145A0	White Lick Creek Trail	Phase 3: New trail connecting existing segments & crossing US 36 at CR 625; CN/CN INS	New Construction	6.0	$1,000,000
HEN157A0	Greenway Trail	Phase 2; Cn/CN INS	New Construction	0.8	$788,900
MAR034B0 MAR034C0	Greenway	Phase 1A: 13th Ave & Main to Mann Dr.; CN/CN INS	New Construction	1.2	$1,150,000
MAR034A0	Greenway	Phase 1B: Mann Road to 4th Ave; CN/CN INS	New Construction	1.6	$1,839,987
HAM140a0	Unknown	Offstreet Trail segment between Westfield Blvd and Keystone Avenue, north of 136th St	New Construction	0.2	$171,155.
HAN043A0 HAN043B0 HAN043C0	Buck Creek Trail	Pennsy Trail to approx 0.34 miles north of CR 100 N	New Construction	2.3	$2,849,100
HAM050A0 HAM005B0 HAM005C0	Cheeney Creek Greenway	Trail along Cheeney Creek from the White River to appoximately I-69	New Construction	2.7	$2,572,691
HEN033A0	B & O Trail	SR 267 to one mile northwest	New Construction	1.0	$2,215,836
MAR078A0	Fall Creek Trail	Monon Trail to Central Avenue	New Construction	1.4	$1,250,000
HEN155A0	Vandalia Trail	CR 500 to west Plainfield corporate limits	New Construction	0.5	$326,000
HEN065A0	CR 900/Smith Road Side Path	Vandalia Trail to Westmere Drive	New Construction	0.5	$367,000
MAR033E0	B & O Trail	Eagle Creek to Main Street	New Construction	1.4	$625,000
HAM101B0 HAM101C0	Monon Trail	SR 32 to 216th Street	ROW Acquisition	4.8	$1,057,500
HAM101C0	Monon Trail	SR 32 to 191st Street	New Construction	1.6	$3,254,550
HAM101B0	Monon Trail	191st Street to 206th Street	New Construction	1.8	$2,493,400

Table 5.3 Plan Recommendations for Time Period 1: 2011 to 2015 (continued)

Project ID	Facility Name	Location	Description	Length	Cost Estimate
Side Path Projects					
HEN083A0 HEN083B0	Hornaday Rd. Trail	1.1 mile 12' wide trail connecting a park, 2 schools and neigbohoods to the B&O Trail	New Construction	1.1	$150,000
HEN144a0	Odell St & Tilden Rd	Side path along Odell and Tilden from Odell and Sycamore St to Tilden and Jefferson St	New Construction	1.0	$1,071,021
HAM002B0 HAM002C0 HAM002D0 HAM002E0 HAM002F0 HAM002H0 HAM002I0 HAM002J0 HAM002L0 HAM002M0	106th Street Trail	Fill in gaps in 106th Street Side Path between US 421 and Hazel Dell Parkway	New Cosntruction	4.1	$4,098,355
HAM007a0	136th Street	136th Street from Oak Ridge Road to just past US 31	New Construction	0.4	$387,968
HAM007b0	136th Street	00236 segment on 136th Street between Wesfield Blvd & Keystone Ave	New Construction	0.2	$236,644
HAM151a0	US 31	Fill 0.147 mile gap along US 31 north of Clay Terrace	New Construction	0.2	$147,312
HAM156a0	Westfield Boulevard	Side Path along Westfield Blvd south from US 31	New Construction	0.2	$156,363
HAM002g0	106th Street	Ditch Road to Illinois Street	New Construction	1.1	$1,800,000
HAM004d0	116th Street Trail	116th St across US 31 (roughly Illinois to Pennsylvania St)	New Construction	0.2	$244,816
HAM006b0	131st Street	Side Path across US 31 from Illinois St to Pennsylvania St	New Construction	0.4	$377,779
HAM046a0	Carmel Drive	Side Path across US 31 from Illinois St to Old Meridian	New Construction	0.4	$468,964
HAM002k0	106th Street Trail	106th Street between Hague Road & Lantern Road	New Construction	0.8	$808,398
HAM026a0	96th Street	96th Street Side Path between Mollenkopf Rd and the Fall Creek Greenway	New Construction	0.3	$280,095

Table 5.3 Plan Recommendations for Time Period 1: 2011 to 2015 (continued)

Project ID	Facility Name	Location	Description	Length	Cost Estimate
HAM077A0 HAM077B0	Eller Road	Side path on a portion of Eller Road between 106th and 116th Street	New Construction	0.7	$650,462
HAM005a0	126th Street	1.58 miles beginning 1280 ft east of Cumberland Road and extending east across I-69	New Construction	1.6	$1,656,199
HAM164A0	146th Street Side Path	Fill in gaps along the north side of the road from Carey Road to Herriman Blvd, multi-use paths; CN/CN INS	New Construction	2.6	$430,000
MAR024A0	71st Street	Lake Knoll Drive to Hague Road	New Construction	1.7	$1,280,000
MAR018A0	62nd Street	Keystone Avenue to Allisonville Road	New Construction	1.3	$1,012,500
MAR095A0	Michigan Road	Michigan Road/Township Line Road/Westlane Road pedestrian enhancement; CN & CN INS in FY 2012	New Construction	7.0	$396,000
MAR086C0	Cultural Trail	Southeast corridor- Alabama St., Washington St., Pennsylvania St. & Virginia Ave.; CN in FY 2011	New Construction	1.4	$9,716,917
MAR086D0 MAR086E0	Cultural Trail	Central Corridor- Market St., Monument Circle, Illinois St., Washington St., Senate Ave. & Government PI; CN in FY 2011	New Construction	1.1	$5,550,000
HEN152A0	US 40 Greenway	White Lick Creek Trail to Moon Road	New Construction	0.7	$504,000
HEN113A0	Perimeter Trail: Moon Road	US 40 to approximately one mile south	New Construction	1.0	$679,000
HAM009a0	156th Street	156th St Side Path between Oak Ridge Road and the Monon Trail	New Construction	0.5	$535,578
HAM010a0	161st Street	161st Street Side Path between Oak Ridge Road and the Monon Trail	New Construction	0.6	$599,301
HAM107a0	Oak Ridge Road	Side Path along Oak Ridge Road from Greyhound Pass to just north of 161st Street	New Construction	1.0	$1,098,696
BOO004A0	State Road 334 Side Path	Side Path from SR 421 to lions park (including saparate bridge over Eagle Creek)	New Construction	0.8	$880,000

Table 5.3 Plan Recommendations for Time Period 1: 2011 to 2015 (continued)

Project ID	Facility Name	Location	Description	Length	Cost Estimate
Bike Lane Projects					
MAR092a0	Main Street (Beech Grove)	Bike Lanes along Main Street from Churchman Ave to Emerson Ave	New Construction	0.8	$279,944
Bridge Projects					
BR004HAM	Morse Resevoir	Pedestrian Walkway over causeway; CN/CN INS	New Construction	n/a	$2,472,300
BR002MOR	White Lick Creek	Pedestrian Bridge; ROW	ROW Acquisition	n/a	$38,000
BR003MOR	White Lick Creek	Pedestrian Bridge; CN	New Construction	n/a	$810,000
BR005HAM	Monon Trail	Pedestrian Bridge over 146th Street CN/CN INS	New Construction	n/a	$3,120,000

Table 5.4 Plan Recommendations for Time Period 2: 2016 to 2025

Project ID	Facility Name	County	Length	Cost	Project Score
Trail Projects					
MAR078b0	Fall Creek Greenway	Marion	0.9	$1,151,588	65.81
MAR078c1	Fall Creek Greenway	Marion	1.0	$1,360,095	62.89
MAR078g0	Fall Creek Greenway	Marion	0.3	$441,188	57.97
MAR078d0	Fall Creek Greenway	Marion	0.7	$908,568	56.80
MAR074a0	Eagle Creek Greenway	Marion	1.4	$1,872,277	54.14
MAR078c2	Fall Creek Greenway	Marion	1.0	$1,360,095	53.26
MAR078h1	Fall Creek Greenway	Marion	1.1	$1,423,000	51.98
MAR078h2	Fall Creek Greenway	Marion	1.1	$1,423,000	51.03
MAR078f0	Fall Creek Greenway	Marion	0.8	$1,007,076	49.00
MAR033f2	B&O Trail	Marion	1.6	$2,177,150	47.45
HAM098z1	Midland Trail	Hamilton	0.2	$285,401	46.63
MAR110d0	Pennsy Trail	Marion	1.0	$1,399,999	46.20
Side Path Projects					
HAM081b0	Hague Road	Hamilton	0.3	$452,308	62.80
JOH090b6	Madison Avenue Greenway	Johnson	1.9	$2,426,104	56.97
JOH090b1	Madison Avenue Greenway	Johnson	1.9	$2,426,104	49.48
MAR078e2	Fall Creek Greenway	Marion	1.6	$2,099,286	47.87
JOH090b2	Madison Avenue Greenway	Johnson	1.9	$2,426,104	47.78
HAM002n0	106th Street Trail	Hamilton	0.5	$662,500	47.11
JOH090b3	Madison Avenue Greenway	Johnson	1.9	$2,426,104	46.18
BOO004c0	116th Street Trail	Boone	0.3	$328,438	45.22
HAM002p0	106th Street Trail	Hamilton	0.5	$617,237	42.03

Table 5.4 Plan Recommendations for Time Period 2: 2016 to 2025

Project ID	Facility Name	County	Length	Cost	Project Score
Bike Lane Projects					
MAR072d1	Delaware Street	Marion	1.6	$507,238	86.86
MAR048a4	Central Avenue	Marion	1.6	$496,619	75.81
MAR072d2	Delaware Street	Marion	1.6	$507,238	69.29
MAR072d3	Delaware Street	Marion	1.6	$507,238	68.33
MAR048a3	Central Avenue	Marion	1.6	$496,619	64.08
MAR048a2	Central Avenue	Marion	1.6	$496,619	63.46
MAR072d4	Delaware Street	Marion	1.6	$507,238	62.62
MAR081c6	Hague Road/ Franklin Road	Marion	1.9	$830,755	61.66
MAR048a1	Central Avenue	Marion	1.6	$695,267	60.94
MAR081c5	Hague Road/ Franklin Road	Marion	1.9	$830,755	60.94
MAR081c3	Hague Road/ Franklin Road	Marion	1.9	$830,755	60.13
MAR025c0	71st/79th Streets	Marion	0.6	$274,425	58.50
MAR202b2	71st Street	Marion	0.8	$361,808	58.01
MAR081c2	Hague Road/ Franklin Road	Marion	1.9	$830,755	57.41
MAR081c4	Hague Road/ Franklin Road	Marion	1.9	$830,755	57.30
MAR025a5	71st/79th Streets	Marion	0.6	$265,404	57.26
MAR025a8	71st/79th Streets	Marion	1.9	$841,948	56.92
MAR081c1	Hague Road/ Franklin Road	Marion	1.9	$830,755	56.71
MAR081c9	Hague Road/ Franklin Road	Marion	1.9	$830,755	56.19
MAR202b1	71st Street	Marion	1.9	$810,298	55.25
MAR202a1	College/75th	Marion	0.8	$340,739	55.24
MAR081c7	Hague Road/ Franklin Road	Marion	1.9	$830,755	54.84
MAR202a2	71st/73rd	Marion	1.6	$713,122	53.79
MAR100a1	Moller Road/ Georgetown Road	Marion	1.8	$791,409	53.25
MAR040a1	BL - N Arlington	Marion	1.8	$798,216	51.83
MAR036a3	52nd Street	Marion	1.0	$440,397	51.22

Table 5.4 Plan Recommendations for Time Period 2: 2016 to 2025

Project ID	Facility Name	County	Length	Cost	Project Score
MAR025b1	71st/79th Streets	Marion	1.5	$634,374	50.81
MAR003z1	10th Street	Marion	0.3	$150,371	50.68
MAR081c8	Hague Road/ Franklin Road	Marion	1.9	$830,755	50.19
MAR100a4	Moller Road/ Georgetown Road	Marion	1.8	$791,409	49.21
MAR085z1	Illinois Street	Marion	0.4	$185,473	48.79
MAR003z2	10th Street	Marion	0.3	$132,006	48.26
MAR100a3	Moller Road/ Georgetown Road	Marion	1.8	$791,409	48.17
MAR081c10	Hague Road/ Franklin Road	Marion	0.8	$329,753	48.06
MAR025b2	71st/79th Streets	Marion	1.5	$634,374	48.05
MAR025a6	71st/79th Streets	Marion	1.9	$841,948	47.53
MAR100a2	Moller Road/ Georgetown Road	Marion	1.8	$791,409	46.83
MAR082a1	Harding St/ Kentucky Avenue	Marion	1.9	$806,221	46.74
MAR096b0	Michigan Street	Marion	1.4	$611,006	46.26
MAR025a7	71st/79th Streets	Marion	1.9	$841,948	45.60
MAR123a1	Southeastern Avenue	Marion	1.6	$702,825	43.47

Table 5.5 Plan Recommendations for Time Period 3: 2026 to 2035

Project ID	Facility Name	County	Length	Cost	Project Score
Trail Projects					
MAR074b6	Eagle Creek Greenway	Marion	2.0	$3,415,787	45.35
MAR074b3	Eagle Creek Greenway	Marion	2.0	$3,415,787	43.88
MAR074b5	Eagle Creek Greenway	Marion	2.0	$3,415,787	43.77
MAR074b4	Eagle Creek Greenway	Marion	2.0	$3,415,787	43.51
MAR074b1	Eagle Creek Greenway	Marion	2.0	$3,415,787	43.29
MAR110c2	Pennsy Trail	Marion	1.8	$3,187,314	41.74
HAM098e0	Midland Trail	Hamilton	0.7	$1,257,400	41.17
HAM098b1	Midland Trail	Hamilton	1.5	$2,630,698	40.15
MAR074b2	Eagle Creek Greenway	Marion	2.0	$3,415,787	39.02
HAM098b2	Midland Trail	Hamilton	1.8	$3,025,816	38.20
HEN155d0	Vandalia Trail	Hendricks	1.9	$3,344,779	37.71
HAM098b3	Midland Trail	Hamilton	1.8	$3,025,816	37.22
MAR033f1	B&O Trail	Marion	1.6	$2,804,773	37.18
MAR033h0	B&O Trail	Marion	1.4	$2,361,071	36.75
MAR110c1	Pennsy Trail	Marion	1.8	$3,187,314	35.49
MAR033g0	B&O Trail	Marion	0.2	$344,856	35.10
Side Path Projects					
JOH090b4	Madison Avenue Greenway	Johnson	1.9	$3,125,497	45.76
HAM005f0	126th Street	Hamilton	0.1	$130,714	43.62
HAM081a0	Hague Road	Hamilton	1.3	$2,085,293	43.35
HAM002q0	106th Street Trail	Hamilton	0.6	$1,015,004	43.24
HAM005i0	126th Street	Hamilton	0.1	$232,063	43.01
HAM005e0	126th Street	Hamilton	0.1	$162,565	42.25
JOH090b5	Madison Avenue Greenway	Johnson	1.9	$3,125,497	41.47
HAM004h0	116th Street Trail	Hamilton	0.8	$1,314,451	39.92
HAM002o0	106th Street Trail	Hamilton	1.1	$1,858,115	39.83

Table 5.5 Plan Recommendations for Time Period 3: 2026 to 2035

Project ID	Facility Name	County	Length	Cost	Project Score
HAM005c0	126th Street	Hamilton	0.1	$115,947	38.62
HAM004g0	116th Street Trail	Hamilton	2.0	$3,322,108	38.04
Bike Lane Projects					
MAR100a5	Moller Road/ Georgetown Road	Marion	1.8	$1,019,555	45.42
MAR040a3	N Arlington	Marion	1.8	$1,028,324	43.78
MAR040a4	N Arlington	Marion	1.8	$1,028,324	43.08
MAR040a2	N Arlington	Marion	1.8	$1,028,324	42.60
MAR096a0	Michigan Street	Marion	1.7	$959,958	41.57
MAR082a2	Harding St/ Kentucky Avenue	Marion	1.9	$1,038,636	40.70
MAR123a2	Southeastern Avenue	Marion	1.6	$905,433	40.22
MAR076a4	Edgewood Avenue	Marion	1.9	$1,050,002	39.38
MAR076a3	Edgewood Avenue	Marion	1.9	$1,050,002	38.21
MAR076a5	Edgewood Avenue	Marion	1.9	$1,050,002	37.49
MAR040a6	N Arlington	Marion	1.8	$1,028,324	37.36
MAR076a6	Edgewood Avenue	Marion	1.9	$1,050,002	37.29
MAR123z1	Southeastern Avenue	Marion	0.6	$353,949	35.74
HAM029d0	Allisonville Road/State Highway 37	Hamilton	1.8	$992,745	35.14
MAR076a2	Edgewood Avenue	Marion	1.3	$753,891	32.45

CHAPTER 6 | PRIORITIES

6.1 PRIORITIES

Establishing sound regional priorities is the basis for and one of the primary achievements of the Central Indiana Regional Bikeways Plan. Representatives from communities that encompass 94% of the urbanized population in the region served on the steering committee that helped determine these priorities.

More than 4,400 miles of bikeways have been proposed in Central Indiana through various plans. This figure includes trails, paths and bike lanes proposed by the Regional Pedestrian Plan and over 30 local planning documents including comprehensive plans, neighborhood plans, transportation plans, parks plans and more. A list of the plans can be found in Appendix B on page 83.

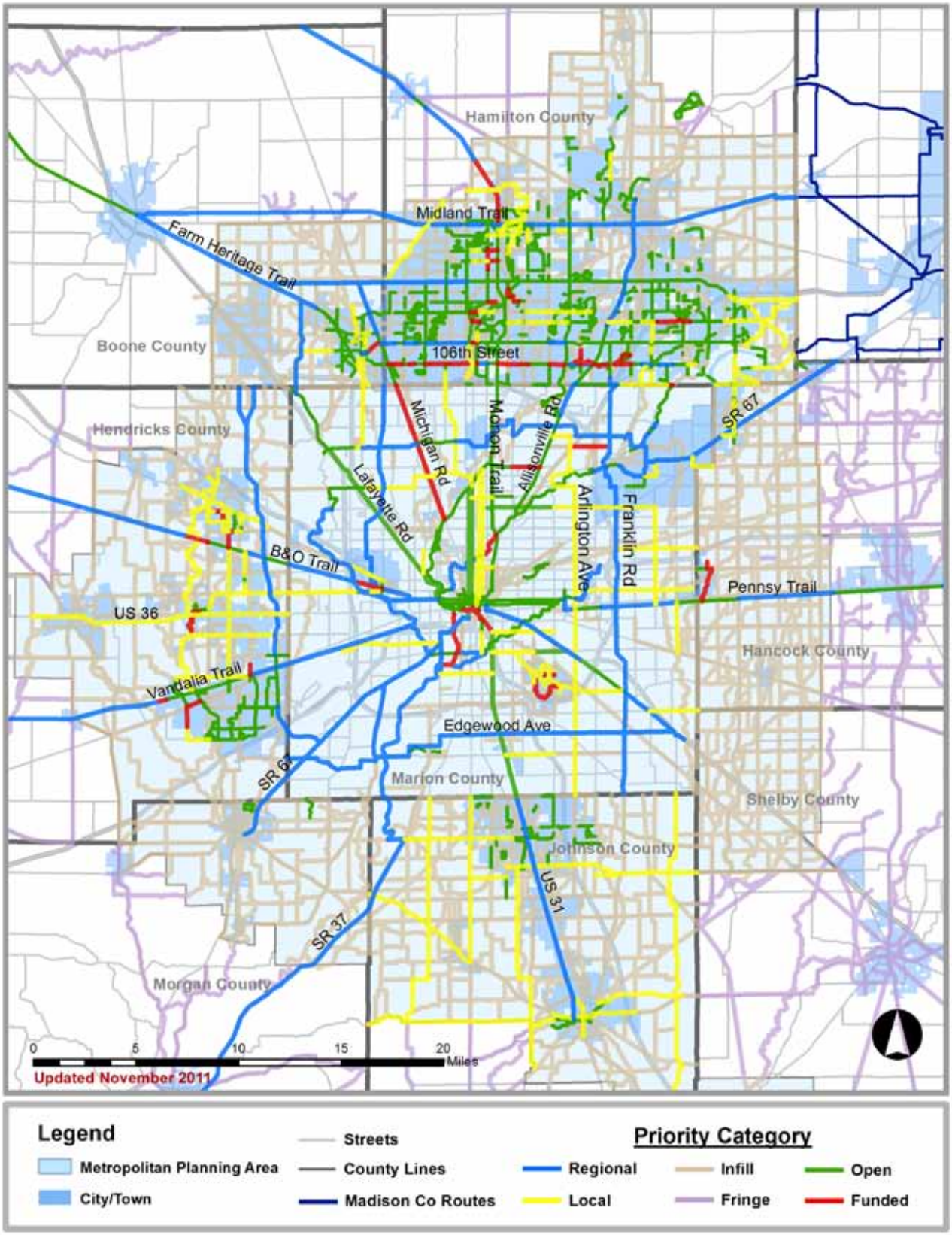
In order to establish regional priorities, the MPO developed a regional bikeways system connecting with each of the jurisdictions within the MPA. Each jurisdiction was sent a map of the proposed bikeways in their area and asked to edit the map and determine the priority level of each bikeway. The priority levels are explained in Table 6.1.

Table 6.1 Priority Categories for Bikeways

Category	Description
Open	These projects have been completed. As such they do not require additional funding other than for maintenance in order to be used by cyclists.
Funded	Bikeways projects that are to be completed with identified funding sources are shown in this category.
Regional	Bikeways projects that connect cities, towns, counties and significant employment or residential clusters in the region.
Local	Bikeways projects that are not a Regional priority, but have been identified by a municipality within the Metropolitan Planning Area (MPA) as a local priority.
Infill	Projects within the MPA that have not been given Regional or Local priority. These projects expand the bicycling network and provide increased access to the Regional and Local system.
Fringe	All projects that are not a Regional or Local priority and are located outside of the MPA.

This priority setting process determined which bikeways would be represented on the regional Vision Plan. Bikeways in the “Open” category were included in the vision plan. Bikeways in the “Funded”, “Regional” or “Local” categories were also included in the Vision Plan and given a project score to help determine which projects would be included in the Regional Bikeways Plan recommendations through 2035. Map 6.1 shows which priority category each bikeway from the regional Vision Plan was placed in.

Map 6.1 Priority of Bikeways Facilities



CHAPTER 7 | FINANCIAL CONSTRAINT

7.1 FINANCIAL CONSTRAINT

The Regional Bikeways Plan has been developed as a component of the Indianapolis 2035 Long-Range Transportation Plan (LRTP). The current federal transportation funding act, The Safe Accountable Flexible Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU), requires that long range metropolitan transportation plans be financially feasible and demonstrate fiscal constraint over the long-range planning horizon. Implementation of transportation improvements is contingent on available funding and a plan is considered fiscally constrained when the project costs do not exceed projected revenues. This Regional Bikeways Plan serves this purpose by providing system level estimates of costs and revenue sources reasonably expected to be available to operate and maintain the bikeways system. The estimates reflect year of expenditure dollars as required.

The 2035 LRTP provided a summary of proposed revenues, which is shown in this plan in Table 7.1. The top portion of the table shows revenue from all non-INDOT sources. The INDOT revenue is shown seperately. The INDOT revenue projection was provided by the INDOT 2030 Long Range Transportation Plan.

Table 7.1: Roadway Revenue Projections

Source	Annual Revenue (2010 Dollars)
Available Non-INDOT Roadways	
Local	$156,950,000
Surface Transportation Program (STP)	$30,000,000
Congestion Mitigation and Air Quality (CMAQ)	$2,000,000
Highways Saftey Improvement Program (HSIP)	$3,000,000
Transportation Enhancement (TE)	$2,050,000
SUBTOTAL	$194,000,000
Available for INDOT Roadways	$407,743,160
TOTAL	$601,743160

Table 7.2 provides a breakdown of program area funding levels established in the 2035 LRTP. The 2035 LRTP goal projects that seven percent of the total revenues from Non-INDOT sources will be dedicated to bicycle and pedestrian projects. This provides a figure of $13.51 million annually that reflects both bicycle and pedestrian infrastructure revenue. The MPO has estimated that $7.5 million of the bicycle/pedestrian program area represents the bicycle share of this funding target.

Table 7.2 Allocation of Non-INDOT Revenue to Program Areas

Program Area	Target Funding Split based on Network Analysis	Actual Funding (2010 Dollars)
Pavement Preservation	25%	$48,266,667
Bridge Preservation	15%	$28,960,00
Roadway Expansion	25%	$48,266,667
Transit Expansion	10%	$19,306,667
Bicycle/Pedestrian	7%	$13,514,667
Operations and Maintenance	18%	$34,752,000
Planning and other	N/A	$933,333
TOTAL		$194,000,000

Non-INDOT revenues were projected over the plan horizon assuming the annual escalation rates presented in Table 7.3. This is consistent with the rates used in the 2035 LRTP. The far right column in this table represents the funding targets during each time period in year of expenditure (YOE) dollars.

Table 7.3 Bikeways Funding Targets Revenue Escalation Rates (YOE)

LRTP Period	Timeframe	Annual Inflation Rate	Bikeways Funding Target
1	2011 to 2015	2.20%	$40,124,393
2	2016 to 2025	2.20%	$94,615,563
3	2026 to 2035	2.10%	$116,965,730

Table 7.4 summarizes the expenditures on bikeways through 2035. Expenditures during all three time periods do not exceed expected revenue. The funding targets were derived directly from information provided in the 2035 LRTP. Revenue and expenditures during Time Period 1 exceed this target, as shown. The Cultural Trail accounts for most of this with $21.7 million from private sources and TIGER grants. Additional local funds have also been committed to specific projects in this time period to account for the difference.

Table 7.4 Total Expenditures and Funding Targets (YOE)

Time Period	New Construction	Maintenance	Total Expenditure	Funding Target
1	$80,197,765	$0	$80,197,765	$40,124,393
2	$54,246,784	$40,300,000	$94,546,784	$94,615,563
3	$76,489,287	$40,300,000	$116,789,287	$116,965,730

CHAPTER 8 | COST ANALYSIS

8.1 Cost Analysis

There are many factors that influence the cost of bikeways, including local conditions, land acquisition, surface type, bridges and more. Reasonable cost estimates are a cornerstone of the development of an implementation plan. The cost analysis represents an average that has been used to project the cost of trails, side paths and bike lanes between 2011 and 2035. More detailed cost estimation should be performed for each trail project as it nears implementation, particularly during preliminary design or application for funding, and prior to bidding for construction.

In general terms, one mile of 12-foot wide asphalt trail was calculated to cost approximately $1.1 million while one mile of bike lanes (on a two-way street) cost approximately $350,000. Using these basic numbers, the 4,418 mile network of all proposed bikeways across Central Indiana would cost $4.6 billion in 2011 dollars to construct. This figure immediately draws attention to the need to develop priorities and a responsible plan for spending the limited transportation funds within Central Indiana.

New Construction- Asphalt Trails and Side Paths

Certain assumptions must be made in order to develop these cost estimates for projects across the region. These assumptions are shown here to more accurately describe what was envisioned with each project and also detail some of the limitations of developing a general, rather than specific, estimate.

Land acquisition was assumed to be 6 acres per mile, representing a 50-foot corridor for trail construction.

Clearing and grubbing of trees and brush includes the width of the trail and associated clear zones.

Aggregate base is assumed to extend one foot beyond the edge of the trail on each side

Adverse soil conditions, such as contamination or severely wet soils, will require additional grading and/or excavation and will increase project cost.

Where possible the INDOT unit price average was used for construction (clearing and grubbing, grading, bank run gravel, spread and compact, asphalt binder course and asphalt wearing course, seeding and mulching)

Asphalt surface treatment was estimated using RS Means 2011 construction data.

It was estimated that three signs would be used for every mile of trail and four signs (one each direction) are typically used at intersections where a trail crosses a road.

A contingency was added to account for common additional costs, such as additional drainage requirements and crossing signals that will vary by project.

Table 8.1 Detail of Unit Costs for Asphalt Trails (2011 dollars)

Cost Item	Unit	Price per Unit
Land Acquisition	acre	$50,000.00
Preliminary Engineering	Lump Sum	10% of Const.
Construction		
Clearing and grubbing	Acre	$4,000.00
Grading, subgrade treatment III	Square Yard	$7.15
6" Compacted Aggregate Base No 53	Square Yard	$5.00
bank run gravel, spread & compact	Square Yard	$45.00
2" Asphalt Binder Course	Square Yard	$5.72
1 1/2" Asphalt Wearing Course	Square Yard	$4.57
Seeding/mulching	Acre	$3,485.00
Asphalt Surface Treatment	Square Yard	$2.86
Signage	Each	$300.00
Construction Inspection	Lump Sum	10% of Const.
Contingency (drainage issues, crossing signals, other)	Lump Sum	10% of total

Table 8.2, below, shows the cost estimates used for asphalt trails in the fiscally constrained portion of this plan. The base year calculation was done in 2011 dollars and then projected into year of expenditure dollars (YOE) for each time period.

Table 8.2 YOE Cost Projections for Asphalt Trails (per mile)

Trails & Side Paths Width	Base Year (2011 Dollars)	Time Period 1 (2013 Dollars)	Time Period 2 (2021 Dollars)	Time Period 3 (2033 Dollars)
12' wide	$1,115,942	$1,165,584	$1,387,237	$1,787,147
10' wide	$1,077,873	$1,125,821	$1,339,913	$1,726,180
8' wide	$1,039,804	$1,086,058	$1,292,588	$1,665,213

New Construction- Bike Lanes

Cost estimates for bike lanes were developed as an average of the costs of presently funded bike lanes in Marion County. The bike lanes included are typical of the standard that will be used within the City of Indianapolis. Lanes are 4-5 feet wide, striping and lane markings are thermoplastic, areas where motor vehicles and cyclists could cross will be colored green and loop detectors are installed. Bike lane projects may require additional right-of-way, additional pavement width and modifications to drains and manholes within the bike lane.

Table 8.3 below shows the cost estimates used for bike lanes in the fiscally constrained portion of this plan. The base year calculation was done in 2011 dollars and then projected into year of expenditure dollars (YOE) for each time period. It is assumed that bike lanes will be installed on both sides of the street for streets that carry two-way motor vehicle traffic and that a single lane will be installed on streets that carry one-way motor vehicle traffic.

Table 8.3 YOE Cost Projections for Bike Lanes (per mile)

Bike Lanes Street Type	Base Year (2011 Dollars)	Time Period 1 (2013 Dollars)	Time Period 2 (2021 Dollars)	Time Period 3 (2033 Dollars)
Two-Way	$350,000	$365,569	$435,088	$560,514
One-Way	$250,000	$261,121	$310,777	$400,367

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CHAPTER 9 | MAINTENANCE

9.1 MAINTENANCE

Infrastructure maintenance is a critical part of ensuring the safety of all bikeways users and protecting the public investment from their initial construction. Well maintained bikeways can be extremely attractive to new users, while unmaintained bikeways can be hazardous and deter users. Maintenance costs can be divided into routine and non-routine maintenance categories. Routine maintenance costs have not been included in the funding targets for this plan. Non-routine maintenance costs are significant and account for approximately one third of our region's bikeways funding targets through 2035.

Non-routine maintenance costs are estimated to be $80.6 million in YOE dollars through 2035. By this time, asphalt will need replaced on over 460 miles of existing bikeways and 87 miles of bikeways constructed during time period 1 to keep them in safe working order. More detailed assumptions relating to non-routine maintenance costs are found in Section 9.2. It is not anticipated that any of our existing bikeways will reach the age requiring non-routine maintenance during Time Period 1. The non-routine maintenance costs have been divided equally over Time Periods 2 and 3. Maintenance costs for each time period were deducted from the funding targets to determine the amount available for new construction as shown in Table 9.1.

Table 9.1 Maintenance Cost Projections

Time Period	Funding Target	Maintenance	New Construction
1	$40,124,393	$0	$40,124,393
2	$94,615,563	$40,300,000	$54,315,563
3	$116,965,730	$40,300,000	$76,665,730

Maintenance of roadways and bikeways for bicycle use is based in part on an understanding of bicyclists' needs, particularly concerning the roadway edge where the majority of bicycling takes place. Common maintenance concerns such as potholes, cracks and debris in the roadway cause problems not only for bicyclists but for motorists as well. Wet leaves, rocks, gravel, sand, snow, ice, branches, and glass present difficulties for bicyclists, often causing bicyclists to use more of the travel lane or even swerve unpredictably in order to avoid these hazards. Responsive and appropriate levels of maintenance for bikeways will increase safety for all users.

> It's not as glamorous as building the trail. There is no ribbon cutting for a maintenance program and seldom does upkeep win a national award. Yet, operations, maintenance, and stewardship are essential to the safe use, enjoyment, and long-term success of any trail.
>
> Robert Searns, Operations Maintenace and Stewardship 101, Fall 2005 issue of Trail Tracks

9.2 NON-ROUTINE MAINTENANCE

Within the scope of this plan, non-routine maintenance is considered when it is necessary to remove asphalt and replace it entirely. An asphalt trail may have a life expectancy of approximately 15 years, subject to surface thickness and weather conditions. Asphalt roads containing bike lanes may have a life expectancy of 15 to 25 years, depending on the volume of traffic on the road and weather conditions. Table 9.2 shows the cost assumptions used to estimate costs for non-routine maintenance of asphalt bikeways. Costs were calculated using INDOT average unit costs for each item.

Table 9.2 Detail of Unit Costs for Non-routine Maintenance of Asphalt Trails, Side Paths and Bike Lanes (2011 dollars)

Cost Item	Unit	Price per Unit
Preliminary Engineering	Lump Sum	5% of Const.
Construction		
Asphalt Removal	Square Yard	$2.00
2" Asphalt Binder Course	Square yard	$5.72
1 1/2" Asphalt Wearing Course	Square Yard	$4.57
Seeding/mulching	Acre	$3,485.00
Asphalt Surface Treatment	Square Yard	$2.86
Construction Inspection	Lump Sum	10% of Const.

In Table 9.3, the cost of non-routine maintenance has been detailed for each bikeways facility type. The projected year of expenditure costs were used to develop the fiscally constrained portion of this plan.

Table 9.3 YOE Cost Projections for Non-Routine Maintenance of Asphalt Trails and Side Paths (per mile)

	Base Year (2011 Dollars)	Time Period 1 (2013 Dollars)	Time Period 2 (2021 Dollars)	Time Period 3 (2033 Dollars)
Trails and Side Paths				
12' wide	$134,961	$140,964	$167,771	$216,136
10' wide	$116,475	$121,656	$144,791	$186,532
8' wide	$97,989	$102,348	$121,811	$156,927
Bike Lanes				
Both sides	$97,989	$102,348	$121,811	$156,927
Single side	$58,793	$61,409	$73,087	$94,156

9.3 ROUTINE MAINTENANCE

Routine maintenance refers to many of the day-to-day necessities such as removal of litter, tree trimming, street sweeping and sign replacement. It also includes minor repair such as filling cracks and potholes. Maintenance needs will vary for different facilities in different locations, and various entities in the region will be responsible for specific maintenance activities. Tables 9.4 and 9.5 provide general guidance on the necessary routine maintenance of trails, side paths and on-road bicycle lanes.

Table 9.4 Routine Maintenance of Trails and Side Paths

Activity	Spot Maintenance	Routine Maintenance
Improve Drainage	Unplug individual drains.	Clean all culverts, catch basins, and drainage structures on a regular schedule as needed.
Trim Vegetation	Cut or remove vegetation that falls or grows onto trails.	Trim all vegetation within 3 feet of either side of all trails up to 10 feet above the ground; trim additional vegetation to improve sight distances near intersections.
Replace Pavement	Fill potholes.	Replace pavement (every 10 to 20 years, but will vary significantly depending on conditions).
Replace Signs	Replace missing or damaged warning, regulatory, or wayfinding signs.	Replace signs based on manufacturer recommendations related to reflectivity and readability (every 15 to 20 years).
Inspect Structures	Address structural problems.	Include trail structures in the same inspection schedule as all other structures in the city; if structure is deteriorating, it should be added to the citywide schedule for repair/replacement.
Clean trash and debris	Enlist the help of bicycle and pedestrian organizations, neighborhood groups, and other citizens to help clean broken glass and other sharp objects, loose gravel, leaves, and other debris.	A schedule needs to be developed for working with bicycle organizations and other groups on trash and debris removal.

Table 9.4 Routine Maintenance of Bike Lanes, Bicycle Boulevards and Shared Roadways

Activity	Spot Maintenance	Routine Maintenance
Sweep bicycle lanes and other on-road bicycle facilities	Perform spot sweeping if debris collects in bicycle lanes after major rain storm.	Sweep bicycle lanes (two times per year). Key bike routes should be given consideration for higher frequency of sweeping. If adjacent travel lanes are swept mechanically, sweepers should reach as close to the curb as possible to make sure material is not deposited in the bicycle lanes.
Snow Removal	Plow snow from bike lanes when roadways are plowed. Ensure that snow is not deposited in bike lanes from motor vehicle lanes.	
Repair and replace pavement	Fill potholes and remove surface irregularities.	Resurface bicycle facilities as part of street repaving projects.
Improve Drainage	Unplug individual drains.	Include bicycle facilities in all routine roadway drainage improvements.
Replace Signs	Replace missing or damaged warning, regulatory, or wayfinding signs.	Replace signs based on manufacturer recommendations related to retroreflectivity and readability (every 15 to 20 years).
Replace pavement markings	Respond to citizen complaints about loops that do not detect bicycles.	Conduct annual replacement program to replace bicycle pavement markings based on a regular basis, as needed. Replace bicycle pavement markings when roadways are resurfaced.
Ensure bicycle detection at traffic signals	Respond to citizen complaints about loops that do not detect bicycles.	Test sensitivity of inductive loops at each approach to all intersections in the city with actuated signals, including left-turn lanes, to ensure that bicycles can be detected.
Provide adequate lighting	Replace burned-out and broken lighting fixtures.	Lighting is evaluated on a spot basis.

CHAPTER 10 | PROJECT FUNDING

10.1 PROJECT FUNDING

The 2035 Long-Range Transportation Plan established a target for bicycle and pedestrian facilities of seven percent of non-INDOT roadway funds. Bicycle and pedestrian funding comes from several different sources. The majority of federal funding dedicated to bicycle and pedestrian facilities comes from the Transportation Enhancement program (TE) and the Congestion Mitigation and Air Quality Improvement program (CMAQ). This section details common federal funding sources and their eligible uses according to the U.S. Department of Transportation (US DOT).

Metropolitan Planning (PL) - This program provides MPO's with funds to carry out the federally prescribed transportation planning program. The IMPO has the primary responsibility for administering this program.

Surface Transportation Program (STP) - Funding for transportation improvements to routes functionally classified as urban collectors or higher. The IMPO has the primary responsibility for administering this program.

Transportation Enhancement program (TE) - Funding for 12 exclusive activities such as pedestrian and/or bicycle facilities, rehabilitation and restoration of historic transportation-related structures, and mitigation of pollution due to highway runoff. The IMPO is responsible for reviewing grant applications and recommending grant awards. INDOT and FHWA are the final decision makers.

Highway Safety Improvement Program (HSIP) - A SAFETEA-LU program to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Funds may be used for projects on any public road or publicly owned bicycle and pedestrian pathway or trail. Each state must have a Strategic Highway Safety Plan in place to be eligible to use up to 10 percent of its HSIP funds for other safety projects (including education, enforcement and emergency medical services).

Congestion Mitigation Air Quality Program (CMAQ) - Funding for transportation projects that improve air quality by reducing transportation related emissions. The MPO has the primary responsibility for administering this program. A review committee consisting of representatives from INDOT, FHWA, FTA, EPA and IDEM makes the final determination.

Recreational Trails Program (RTP) - This is a competitive program that provides financial assistance for the acquisition and/or development of recreational trails projects. The Indiana Department of Natural Resources has the primary responsibility for administering this program.

Safe Routes to School (SRTS) - A SAFETEA-LU Program to encourage and improve the conditions for students to walk and bicycle to school. Activities of this program include infrastructure and non-infrastructure educational components. INDOT has the primary responsibility for administering this program.

Transportation & Community System Preservation (TCSP) - Provides funding for a comprehensive program including planning grants, implementation grants, and research to investigate and address the relationships among transportation and community and system preservation plans and practices and examine private sector based initiatives. FHWA has the primary responsibility for administering this program.

National Scenic Byway Program (NSB) - This is a competitive program that provides funding to preserve, protect, enhance and recognize nationally designated transportation corridors of unique character. The National Road (U.S. Hwy 40) is designated as a NSB corridor). The U.S. DOT has the primary responsibility for administering this program.

All transportation enhancement, safety, trails, pedestrian and bicycle projects that involve the use of federal funds provided by the U.S. Department of Transportation, or any of its agencies (FHWA, Federal Transit Administration (FTA), etc.), must be programmed in the local Transportation Improvement Program (TIP) by the MPO and then included in the State Transportation Improvement Program (STIP) by INDOT. Therefore, it is critically important that project sponsors work closely with the MPO during the preparation of funding applications and during the various phases of the project development cycle (preliminary engineering, right-of-way and construction) to insure federal funds are properly programmed and federal-aid project rules are followed.

The US DOT has provided a complete list of transportation programs that may be used to finance projects related to trails, pedestrian and bicycle programs (available at http://www.fhwa.dot.gov/hep/bkepedtble.htm). Table 10.1 provides a brief summary of federal-aid programs that are commonly used to fund bikeways and pedestrian projects.

Table 10.1 US DOT Federal-Aid Funding Programs for Bikeways and Pedestran Projects

Program	Eligible Bike & Pedestrian Activities	Program Administrator	Typical Funding Ratio	Remarks
Metropolitan Planning (PL)	Bicycle and pedestrian planning as part of the metropolitan planning process.	MPO	80% Federal 20% Non-federal	
MPO Group II Surface Transportation Program (STP II)	Construction of pedestrian walkways and bicycle facilities; non-construction projects for safe bicycle use; modification of public sidewalks to comply with the Americans with Disabilities Act.	MPO	80% Federal 20% Non-federal	The MPO has not traditionally used this program to fund trails, pedestrian and bicycle projects because it is the principal source of federal aid funding for local road, street and bridge projects inside the MPO's urbanized area.
Urban Group III Surface Transportation Program (STP III)		INDOT	80% Federal 20% Non-federal	INDOT has not traditionally used this program to fund trails, pedestrian and bicycle projects because it is the principle source of federal-aid funding for local road and street projects outide of an MPO's urbanized area
Group IV Surface Transportation Program (STP IV)		INDOT	80% Federal 20% Non-federal	
Transportation Enhancement Program (TE)	3 of the 12 eligible activities are pedestrian and bicycle facilities, safety and education for pedestrians and bicyclists and rail-trails.	MPO- Projects within the MPO's urbanized area	80% Federal 20% Non-federal	In 2011 the MPO recieved a direct $3.7 million sub-allocation to fund TE projects inside the Urbanized Area.
Highway Safety Improvement Program (HSIP)	Improvements for pedestrian or bicyclist safety. Construction and yellow-green signs at pedestrian-bicycle crossings and in school zones. Identification of and correction of hazardous locations, sections, and elements (including roadside obstacles, railway-highway crossing needs, and unmarked or poorly marked roads) that constitute a danger to bicyclists and pedestrians. Highway safety improvement projects on publicly owned bicycle or pedestrian pathways or trails.	MPO- Projects within the MPO's urbanized areas INDOT- Projects outside the MPO's urbanized areas	90% Federal 10% Non-federal	The MPO recieved a direct sub-allocation of $3,003,821 for this program in 2011.

Table 10.1 US DOT Federal-Aid Funding Programs for Bikeways and Pedestran Projects (continued)

Program	Eligible Bike & Pedestrian Activities	Program Administrator	Typical Funding Ratio	Remarks
Congestion Mitigation Air Quality Program (CMAQ)	Construction of pedestrian walkways and bicycle transportation facilities; non-construction projects for safe bicycle use. Projects do not have to be within the right-of-way of a Federal-aid highway, but must demonstrate an air quality benefit.	MPO- Projects within MPA INDOT- Projects outside MPA	80% Federal 20% Non-Federal	The MPO recieved a direct sub-allocation of $7,550,136 for this program in 2011.
Recreational Trails Program (RTP)	Non-motorized or mixed use (motorized and non-motorized trails). Eligible categories are trail maintenance and rehabilitation, trailside or trailhead facilities, construction and maintenance equipment, trail construction, trail assessments, and trail safety and enviromental protection education.	IDNR	80% Federal 20% Non-Federal	Eligible applicants can currently request RTP Grant Awards ranging from a minimum of $10,000 up to a maximum of $150,000.
Safe Routes to School (SRTS)	Consult the INDOT SRTS wesite at http://www.in.gov/indot/2355.htm for a list of eligible infrastructure and non-infrastructure projects.	INDOT	100% Federal	Eligible applicants can currently request SRTS infrastructure grant awards ranging from a minimum of $5,000 up to a maximum of $250,000. The minimum award for a non-infrastructure project is $5,000 up to a maximum of $75,000.
Transportation & Community System Preservation. (TCSP)	Pedestrian and bicycle projects meet several TCSP goals, are generally eligible for the TCSP program and are included in many TCSP projects.	FHWA	80% Federal 20% Non-federal	Since 2000, 28 eligible applicants in Indiana recieved grants under this program with an average grant award of $729, 848. (Source: http://fhwa.dot.gov/tcsp/grantawards.cfm)
National Scenic Byway Program (NSB)	Construction along a scenic byway of a facility for pedestrians and bicyclists and improvements to a scenic byway that will enhance access to an area for the purpose of recreation. 23 USC 162(c)(4-5). Construction includes the development of the enviromental documents, design, engineering, purchase of right-of-way, land, or property, as well as supervising, inspecting, and actual construction. [Note: Construction of the recreation facility is not eligible]	US DOT	80% Federal 20% Non-federal	

CHAPTER 11 | PROJECT SCORING

11.1 PROJECT SCORING

Projects in the Regional Bikeways Plan were identified from existing planning documents and selected as Local or Regional priorities in the plan. Those bikeways that were selected were given a score out of 100 possible points, developed from ten scoring criteria. The scores are intended to help determine which projects are included in the fiscally constrained portion of the plan.

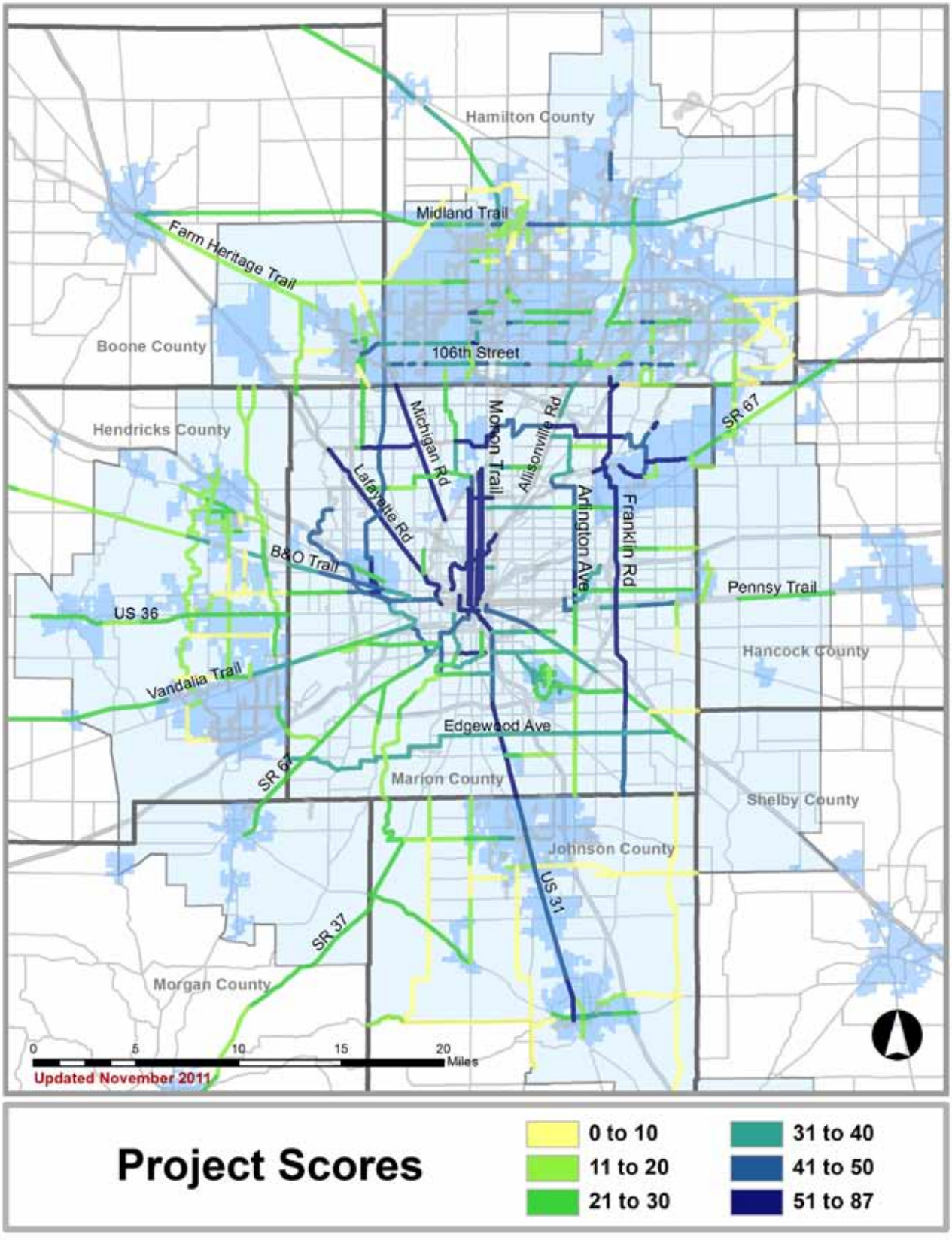
The scores were composed of the following scoring criteria, with each making up a percentage of the total score as shown in Table 11.1. Each bikeway corridor was divided into segments that are no longer than two miles in length. A half-mile perimeter around each segment was analyzed for each of the scoring criteria.

Table 11.1 Project Scoring Criteria Weights

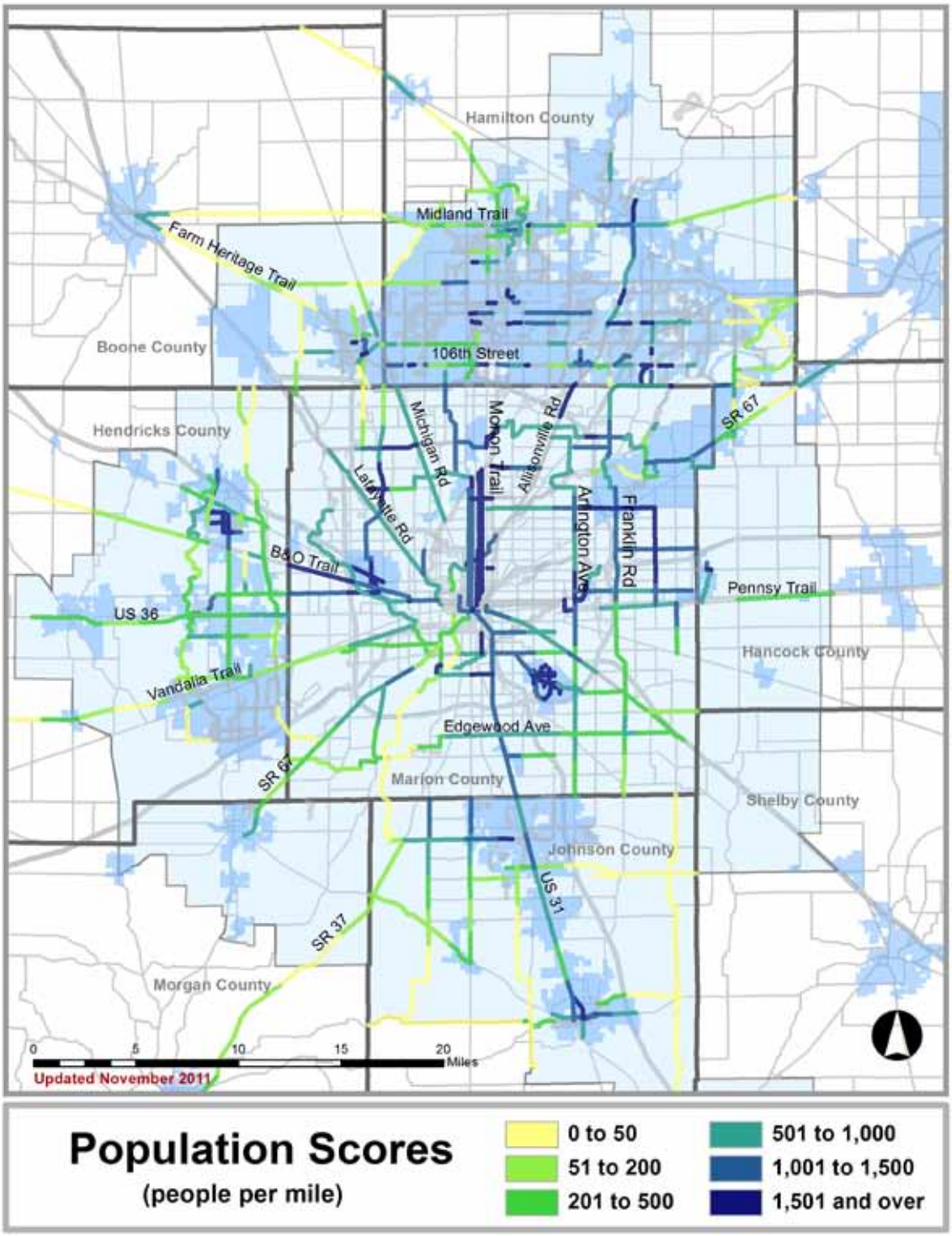
Scoring Criteria	Percent of Total Score
Population	10%
Employment	10%
Transit	10%
Regional Priorities	10%
Connections	10%
Schools	10%
Parks	10%
Health Risk	10%
Libraries	10%
Medical Facilities	10%

Map 11.1 shows the relative composite score of each bikeways segment in the Regional Vision Plan. Weighted project scores ranged from 10 to 88 with an average score of 39.63 points. Projects with scores between 59 and 88 were generally considered for inclusion in Period 2 of the plan and projects with score between 52 and 58 were generally considered for inclusion in Period 3 of the plan. The Population scoring criteria focused on the number of nearby potential users and several other criteria focus on the amount of access provided to destinations such as jobs, transit and schools. The Regional Priorities, Connections and Health Risk Categories focused on other factors of the system. Maps 11.2 through 11.11 on the following pages show how projects scored according to each of the criteria and a description is provided.

Map 11.1 Project Scores

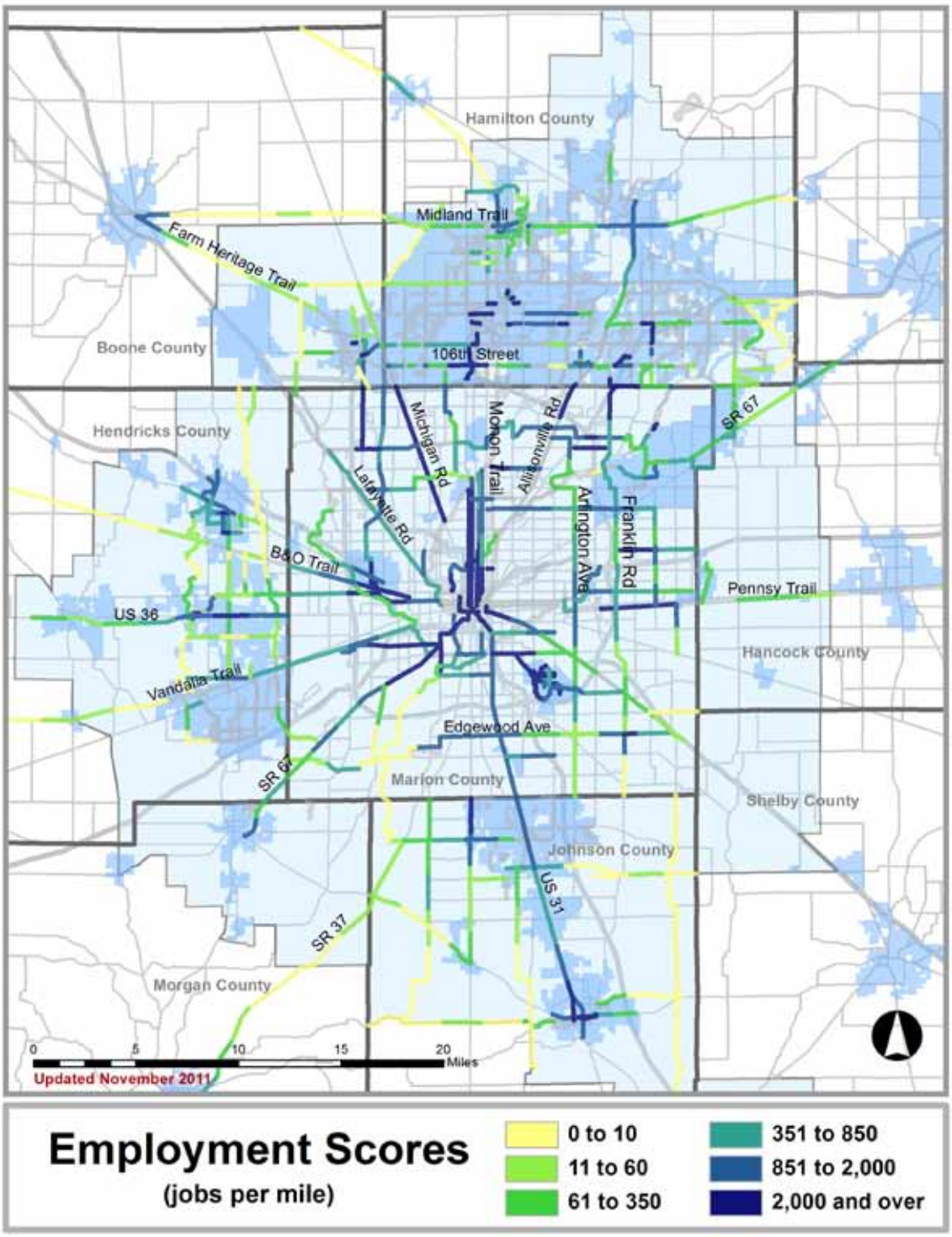


Map 11.2 Project Scoring: Population



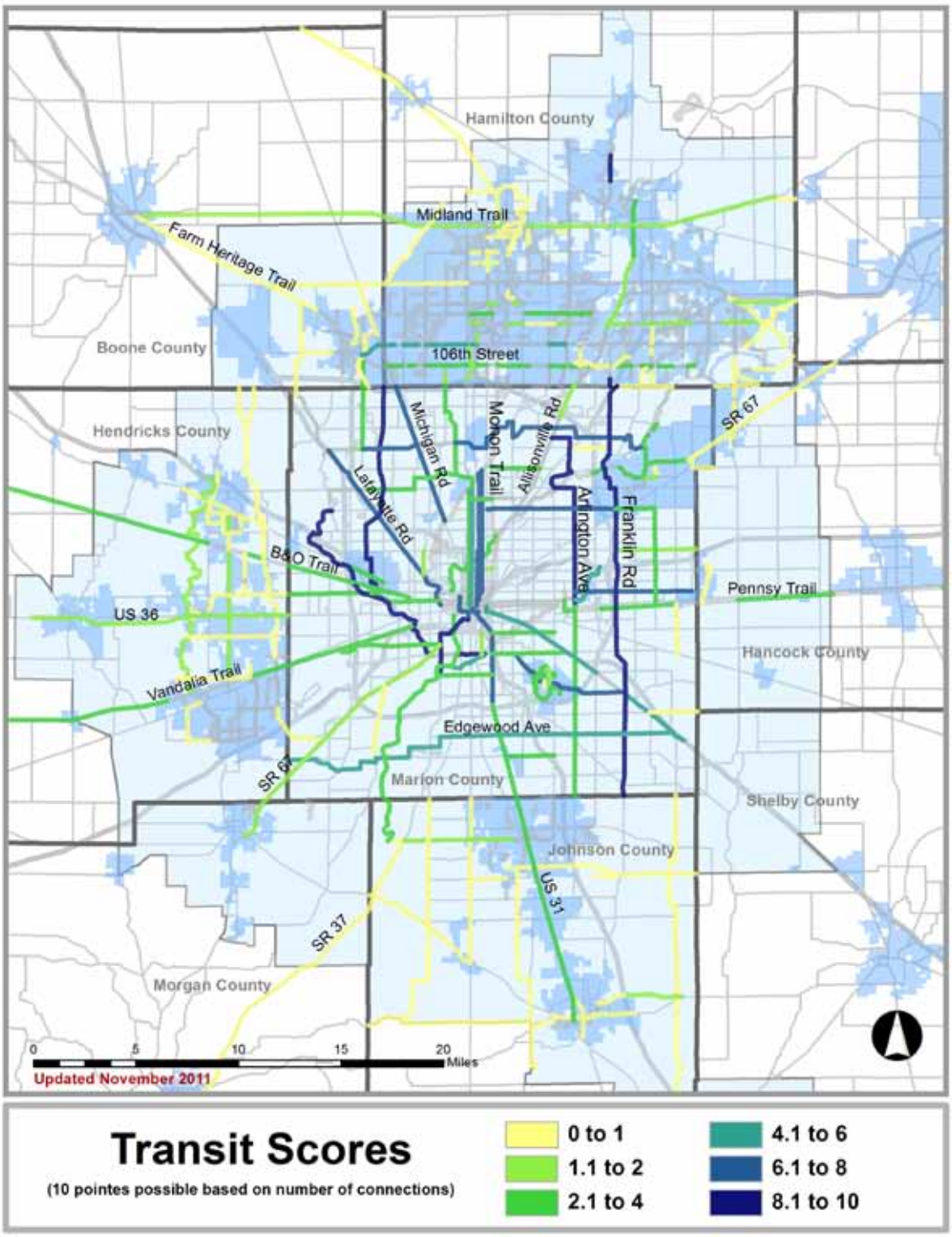
The analysis uses 2009 American Community Survey data obtained through the "On The Map" website of the U.S. Census Bureau. Population per mile was calculated by dividing the number of residents within a half-mile of each bikeways segment by the length of the segment. The average was 784 persons per mile and the highest raw score was 8530 persons per mile.

Map 11.3 Project Scoring: Employment



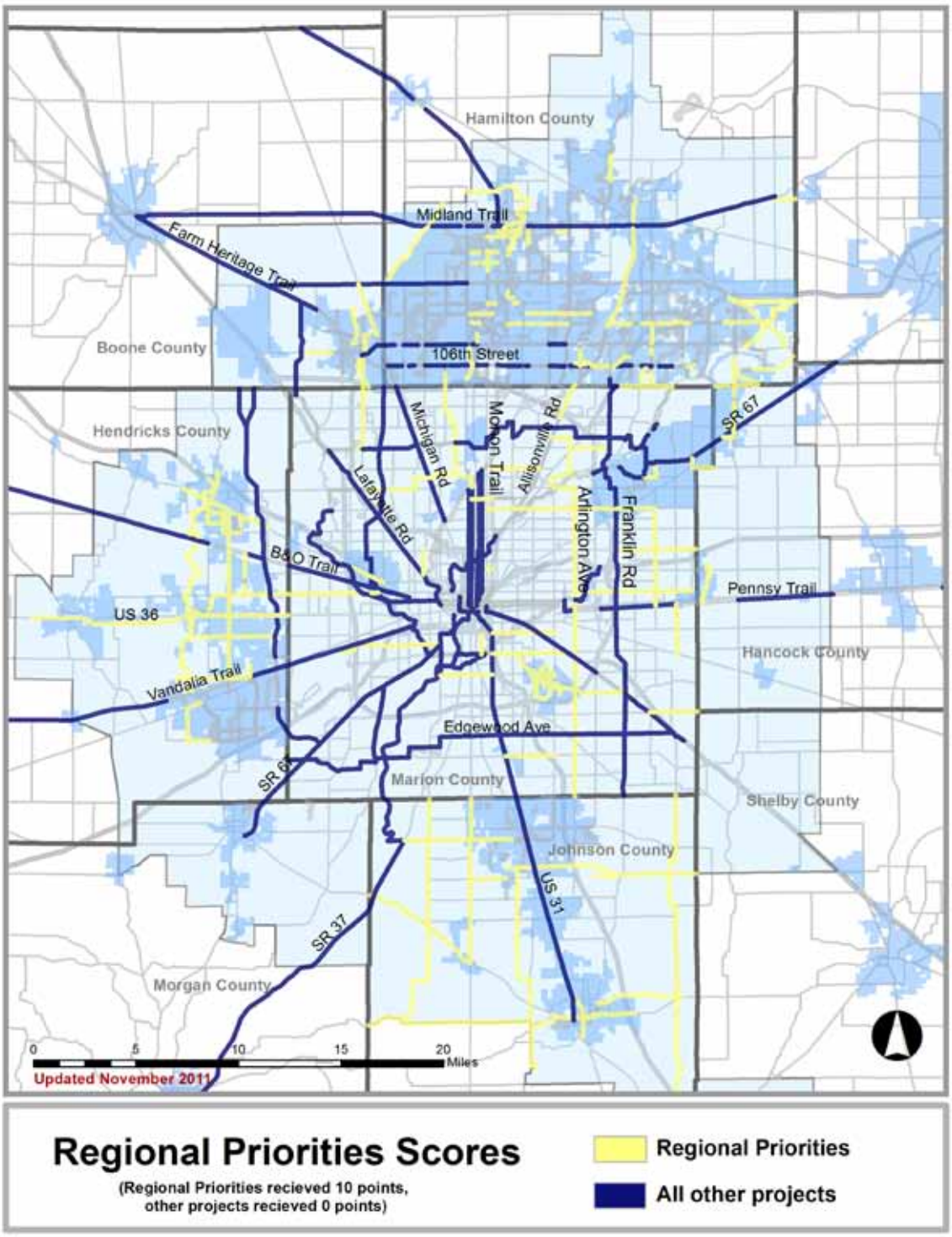
The analysis uses 2009 American Community Survey data obtained through the "On The Map" website of the U.S. Census Bureau. This is the total number of people employed at jobs located within a half-mile of the bikeways segment. The total employment number was divided by the segment length to get the number of jobs per mile. The average was 2,035 jobs per mile, and the highest raw score was 198,577 jobs per mile.

Map 11.4 Project Scoring: Transit



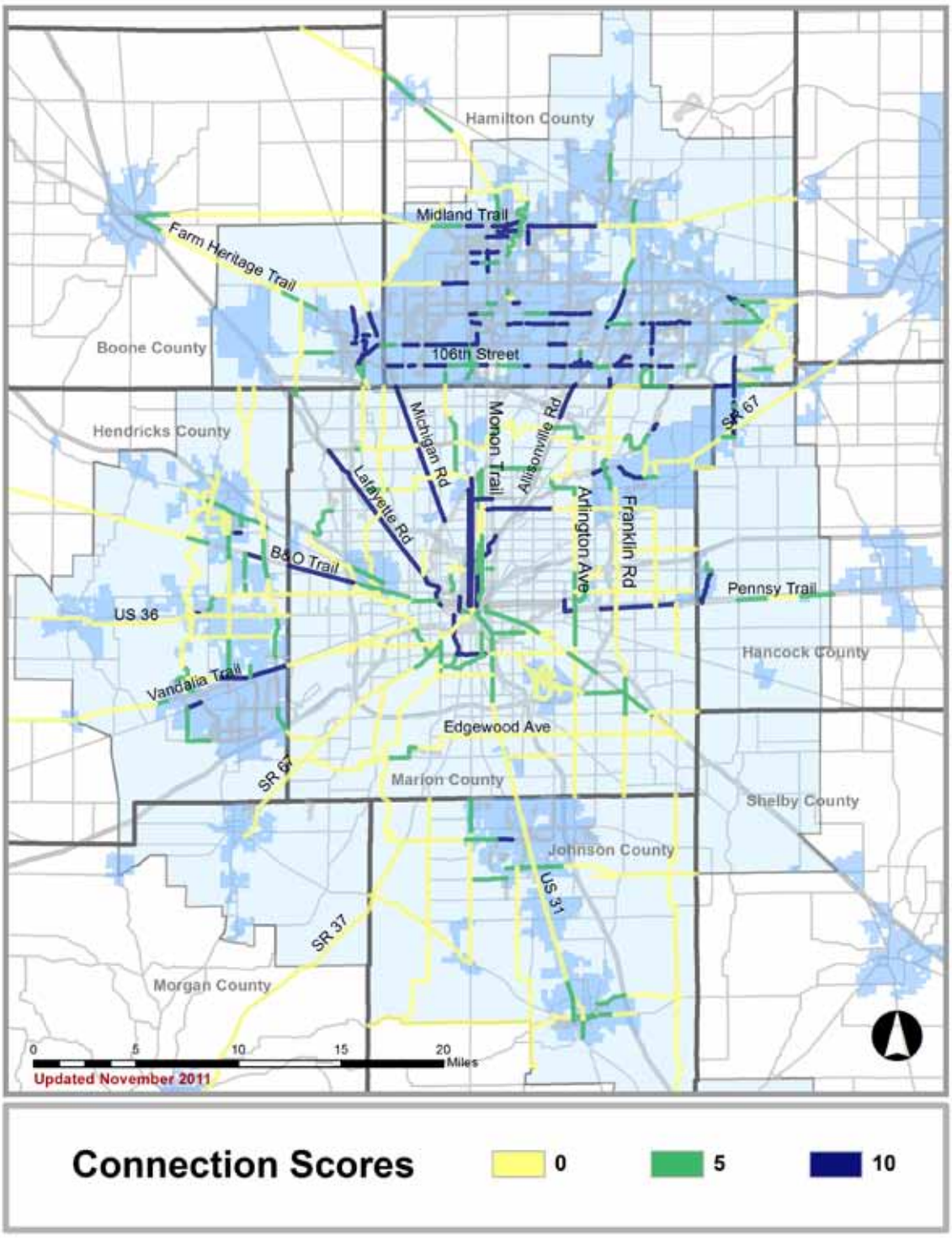
Since transit corridors are generally fixed along a certain route, the bikeways system is a key component of providing access to public transit in our region by allowing more people to safely get to transit stops. This scoring criteria is a reflection of the total number of transit lines (existing and proposed) to which a bikeways corridor would provide a connection. The average was connection to 3 transit lines, and the highest raw score was 13.

Map 11.5 Project Scoring: Regional Priorities



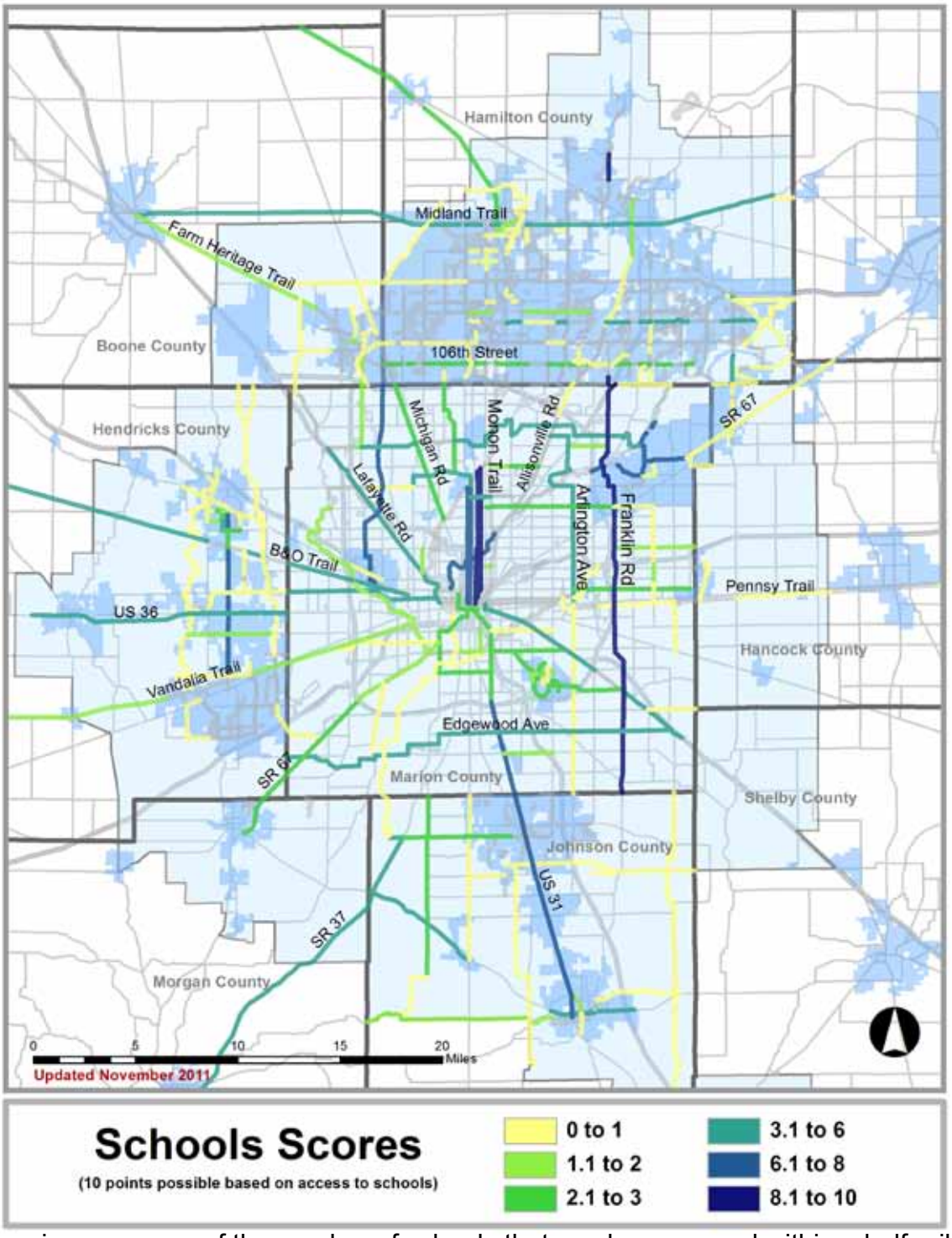
The priority level of each bikeway was assigned by the steering committee as discussed in Chapter 6. Those bikeways that were given a regional priority were selected to recieve an additional ten points during project scoring.

Map 11.6 project Scoring: Connection



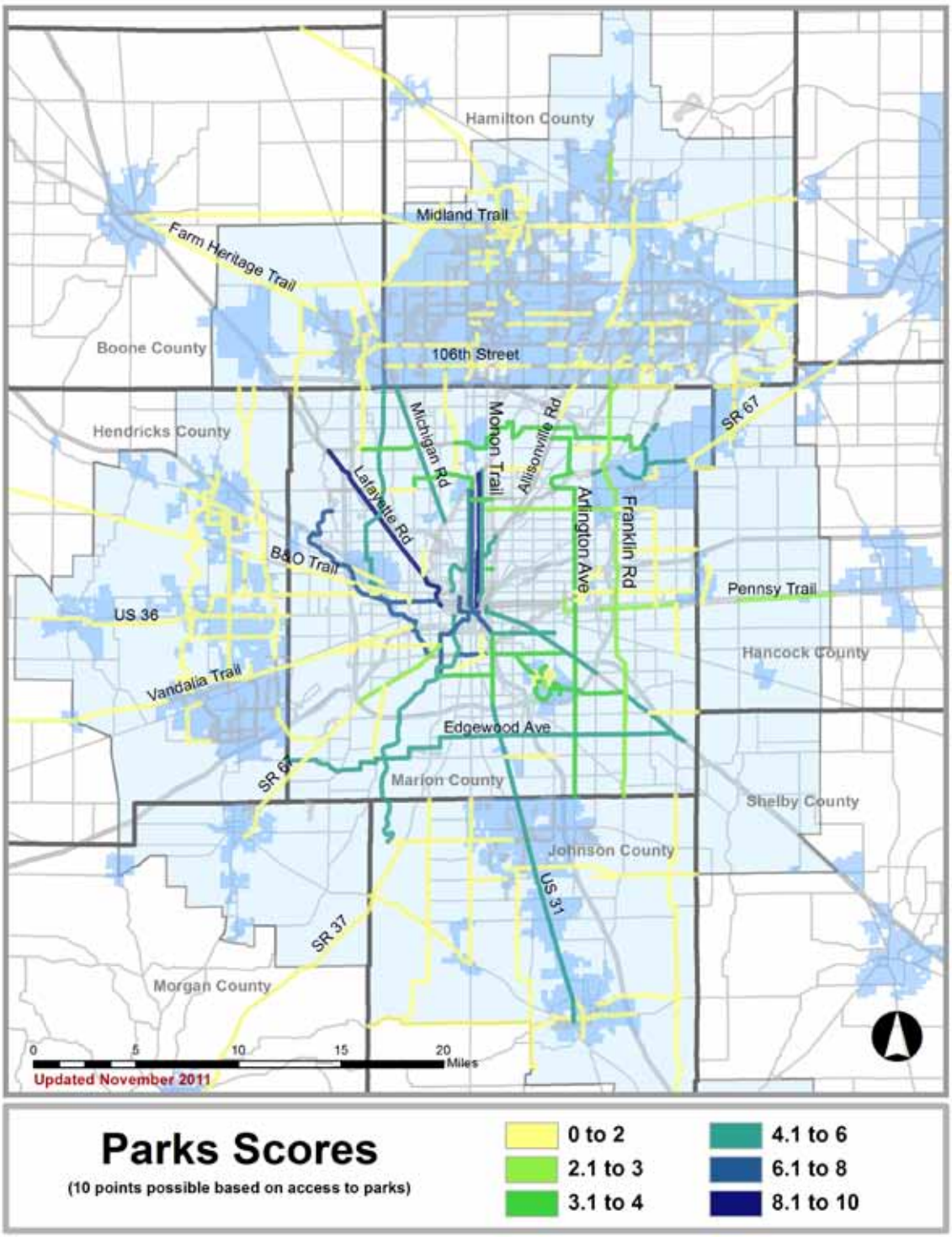
The Connections score evaluated expanded access to the existing bikeways system, which benefits both new and existing cyclists. If a proposed segment does not connect to an existing facility, it received 2 points. If it connects to an existing facility at one end, then it received 4 points, and if it filled a gap between two existing facilities then it received a score of 10 points.

Map 11.7 Project Scoring: Schools Scores



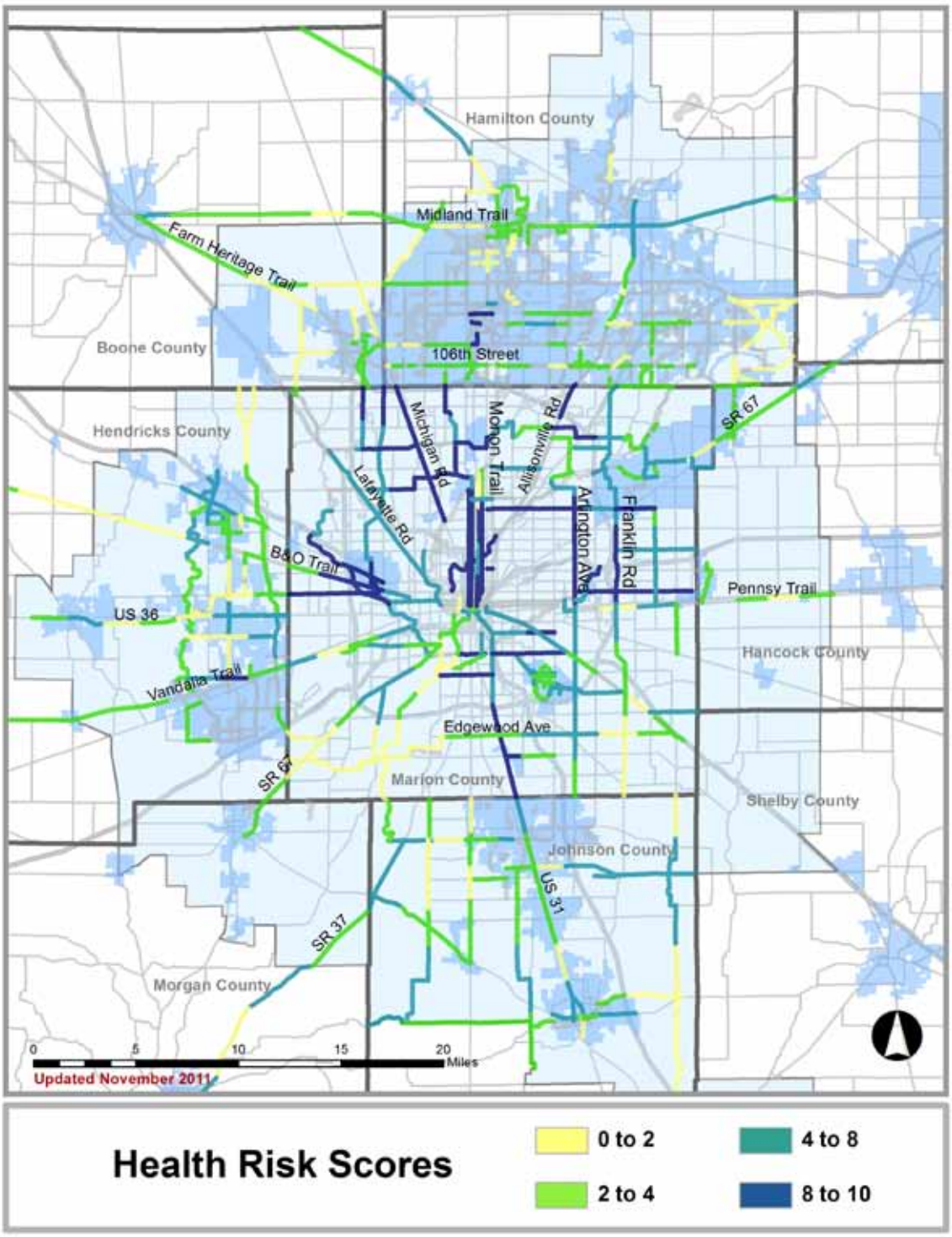
This score is a measure of the number of schools that can be accessed within a half-mile of each bikeways corridor. These routes provide safe bicycle trips for children to get to a school and can be beneficial in alleviating congestion at schools during busy pick-up and drop-off times. Elementary, junior high and high schools along with combined schools, were all included in this count. The average was 4.9 and the highest raw score was 21.

Map 11.8 Project Scoring: Parks



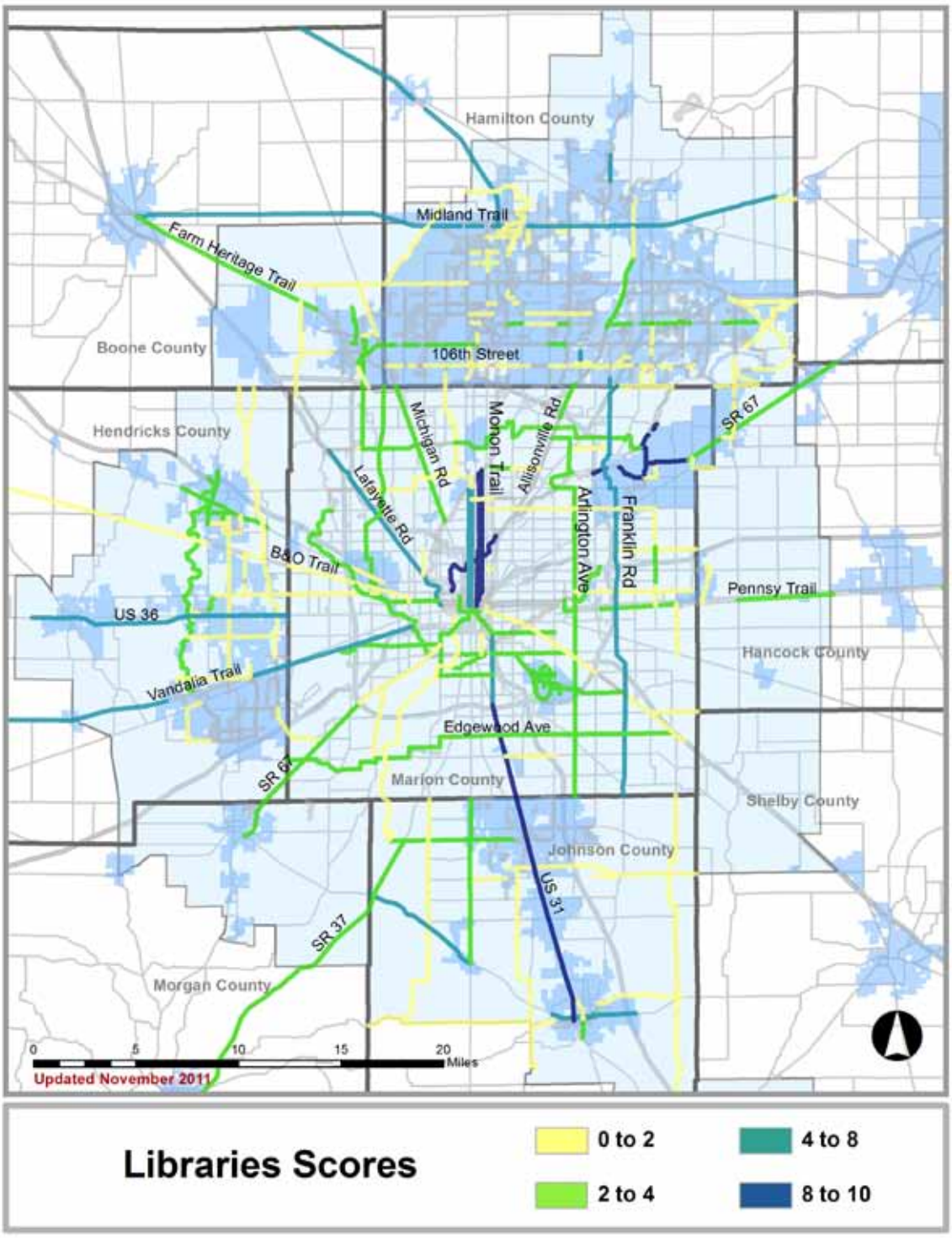
Access to public parks is another scoring criteria for bikeways. Parks provide a number of recreational opportunities and programs for youth. The average was 1.8 and the highest raw score was 12.

Map 11.9 Project Scoring: Health Risk



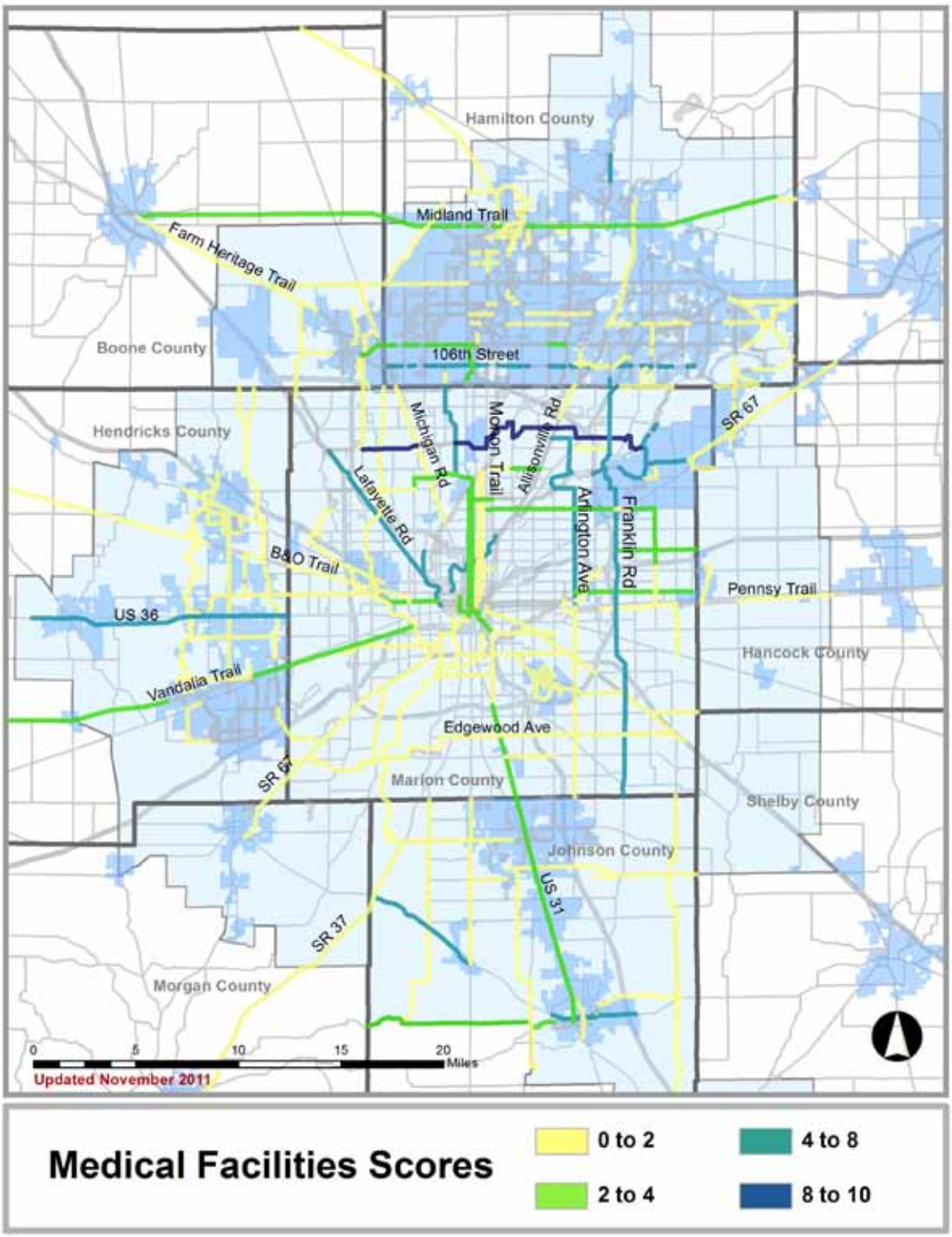
Census data was used to determine the percentage of persons over the age of 65, living in poverty and minority within the region. These groups have typically been found to be more likely to need medical care due to inactivity. The scores in each area were combined to create four levels of health risk based on those factors. Bikeways segments could receive a score of one to six based on the health risk of the population served.

Map 11.10 Project Scoring: Libraries



Access to public libraries was also considered important. This score related to the number of public librairies that could be accessed within a half-mile distance of a given bikeway corridor. The average was 0.75, and the highest raw score was 3.

Map 11.11 Proejct Scoring: Medical Facilities



Access to non-emergency medical facilities was also considered. This criterium was also based on a half-mile distance from a bikeway corridor. The facilities considered include hospitals but primarily consist of medical offices (dental, general practice, etc.). The average was 1.2, and the highest raw score was 8.

CHAPTER 12 | POLICY RECOMMENDATIONS

12.1 POLICY RECOMMENDATIONS

RECOMMENDED LOCAL POLICIES & PRACTICES IN SUPPORT OF THE REGIONAL BIKEWAYS PLAN

The following is a list of recommended local policies and practices in support of the Regional Bikeways Plan, recommended by the Steering Committee. The recommendations being made are relevant to the MPO and other Local and County jurisdictions within Central Indiana. Some of these recommendations may have already been implimented by some of those groups.

Formally adopt a goal to increase bicycling and improve safety
When a jurisdiction publishes a goal to increase bicycling and decrease crashes, they are making a public commitment to progress for which success can be easily measured.

Adopt a bicycle master plan
Bicycle master plans set a community's vision for the future and their road map for achieving their goals.

Establish a bike advisory committee
In many jurisdications, bicycle advisory committees assist with the planning, development, and implementation of bicycling programs and facilities. Groups typically meet monthly or quarterly and make recommendations to city staff and planners about facilities, programs, and issues relating to bicycling in their community.

Adopt a Complete Streets policy
A complete street provides safe access for pedestrians, bicyclists, children, the elderly, disabled people, transit users and motorists. Complete streets policies require that all streets are designed and built to provide safe access for all potential users.

Establish dedicated funding levels for bikeways projects
Counties and local jurisdictions are encouraged to set funding targets are goals set by for how much money, or what percent of transportation spending, will be allocated to bicycling. A dedicated funding target helps assure that the goals established by the city for bikeways get met.

Hire dedicated staff for bicycle programs
Hire dedicated staff to oversee bicycle programs. Like other transportation efforts, implementation of a bike plan can be very complex and can include planning, engineering, grants writing and more.

Require bike parking
Lack of safe places to park a bicycle is a barrier to increasing bicycling. Many cities have taken steps to overcome this barrier by requiring businesses and new developments, parking garages and public events to include bicycle parking.

Adopt Consistent Design Guidelines
Safety of both cyclists and motor vehicle operators will benefit from the application of consistent design throughout the region. For this reason, the National Association of City and Town Officials (NACTO) Urban Bikeways Design Guide 2011 Edition is recommended as the standard for design of bike lanes, cycle tracks and other on-street bicycle treatments. The guide can be found at http://nacto.org/cities-for-cycling/design-guide/. This guide is a toolbox and additional coordination will need to be done through interaction of the various implementing agencies in each jurisdiction to ensure consistency. For example, while they are proposed in the NACTO Urban Bikeways Design Guides, bike boxes are not used by the City of Indianapolis as a method of aiding left turns at stop lights. Cyclist needing to turn left are instructed to safely and cautiously enter the vehicle lane for turning.

Reduce car parking
Having policies that set a maximum number of car parking spaces for new buildings can lead to more dense development and land-use practices that can encourage safer and more bicycle-friendly environments.

Enforce bicycle and motor vehicle laws
Enforcement generally includes both having laws protecting bicyclists and the enforcement of these laws. Whether it's ticketing speeding motorists or reminding bicyclists to stop at traffic lights, enforcement is critical to ensuring that safety rules keep road users safe.

Ensure bike-transit integration
Examples of such integration include having bicycle racks on buses, providing bicycle parking spaces at transit stations, bicycle access on rail, and connecting bike facilities with transit.

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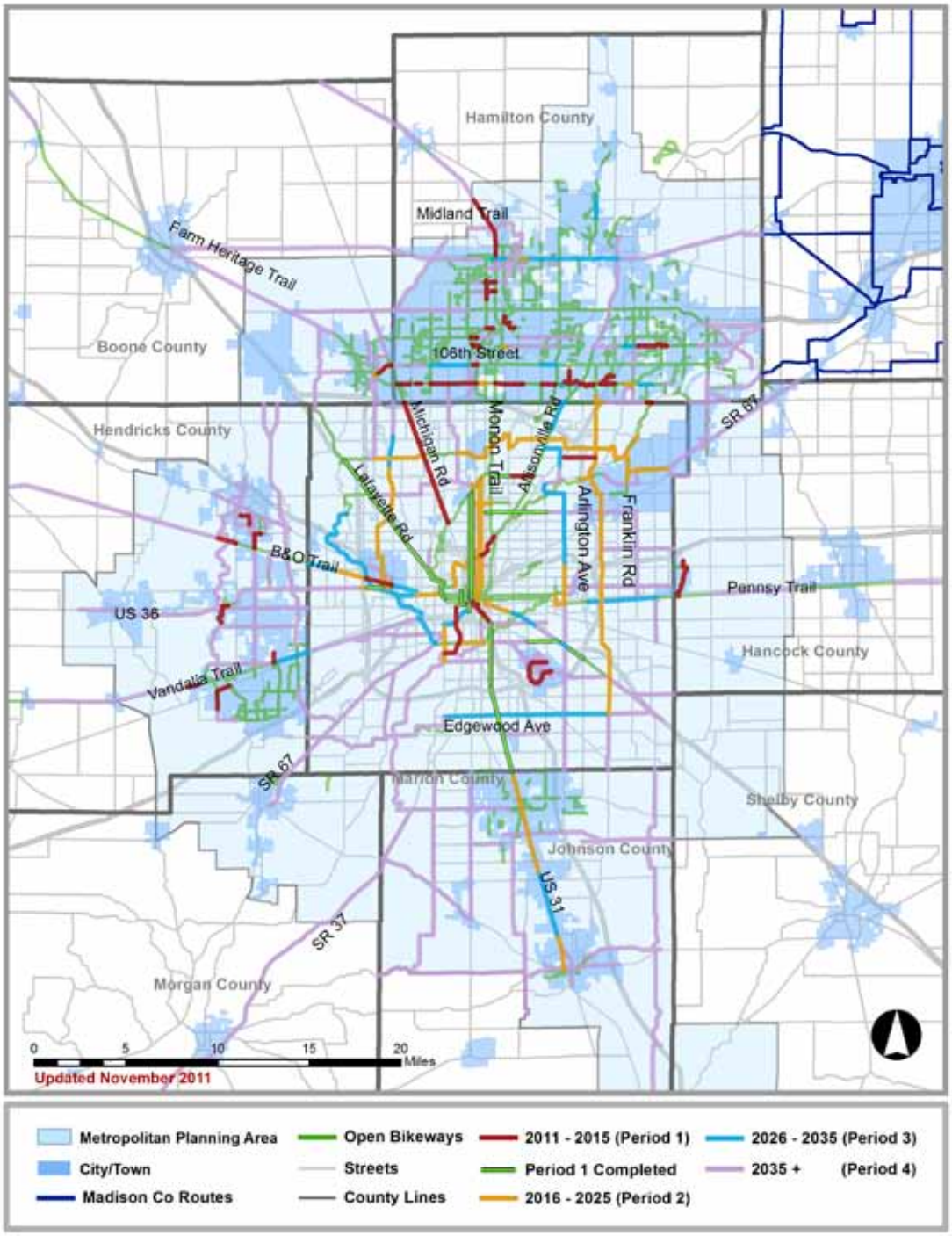
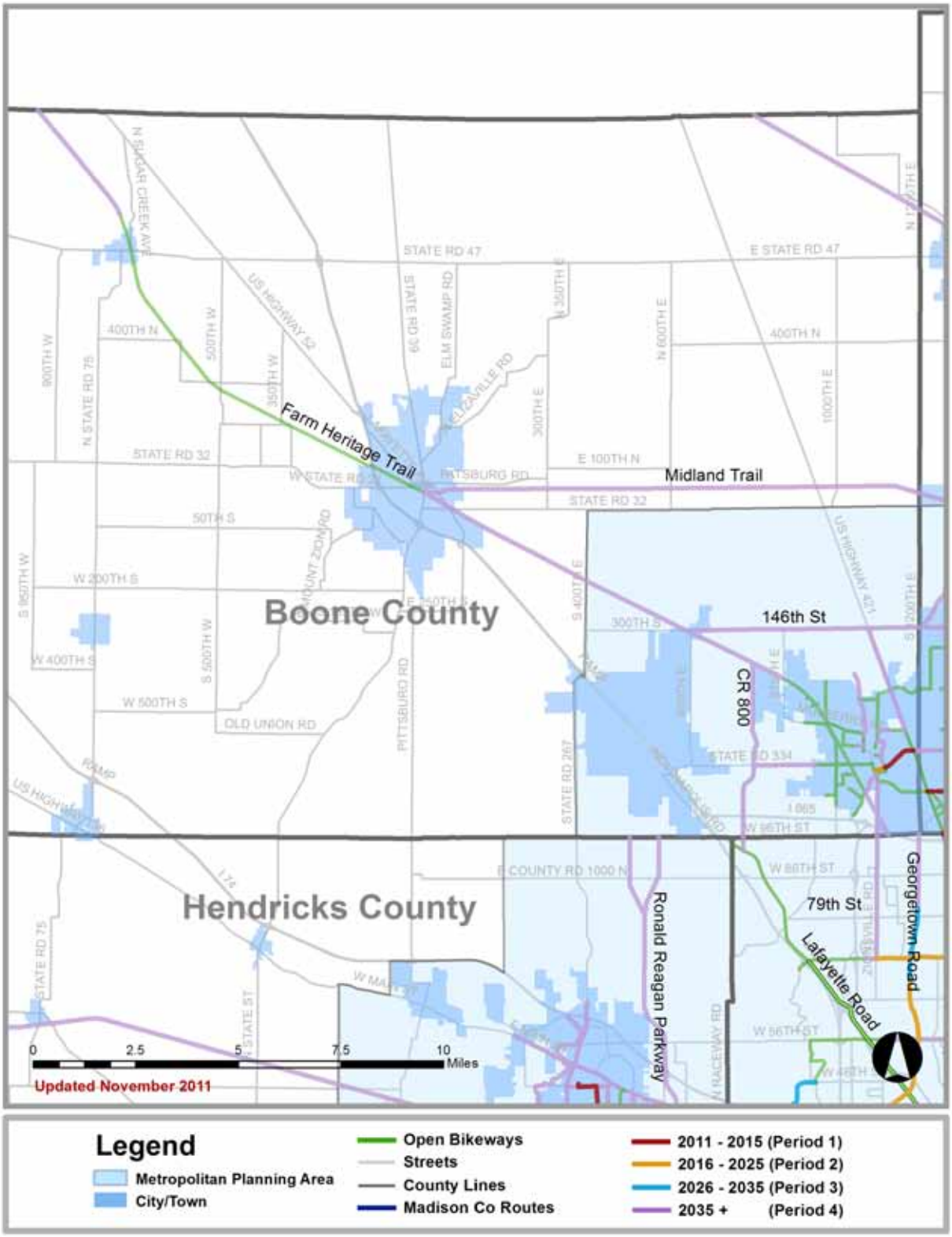
COUNTY MAPS

The maps contained in this Appendix A are more detailed sections of map 5.1 in Chapter 5. There is a map provided for each county containing part of the Metropolitan Planning Area.

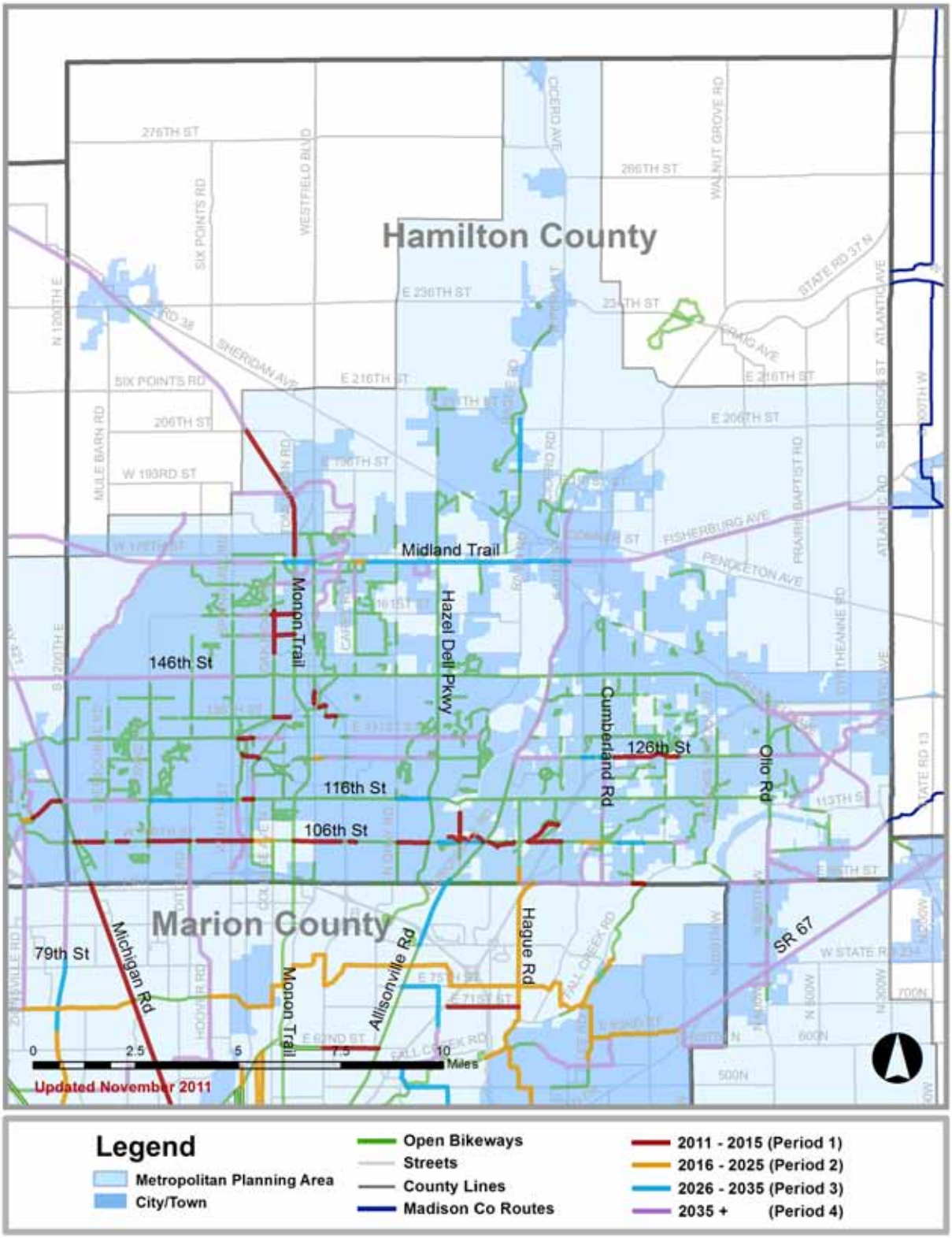


Map 5.1 Plan Recommendations

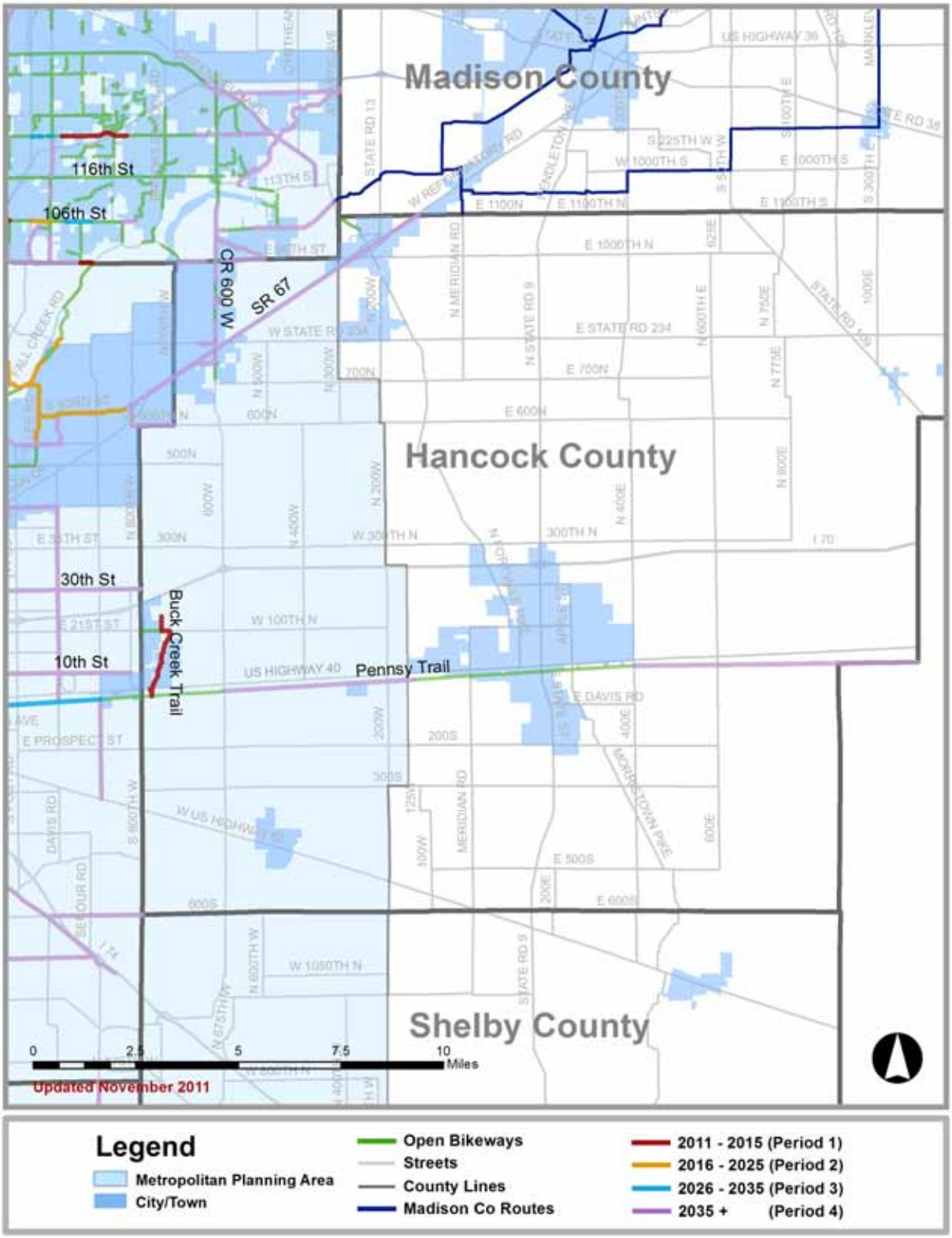
Boone County



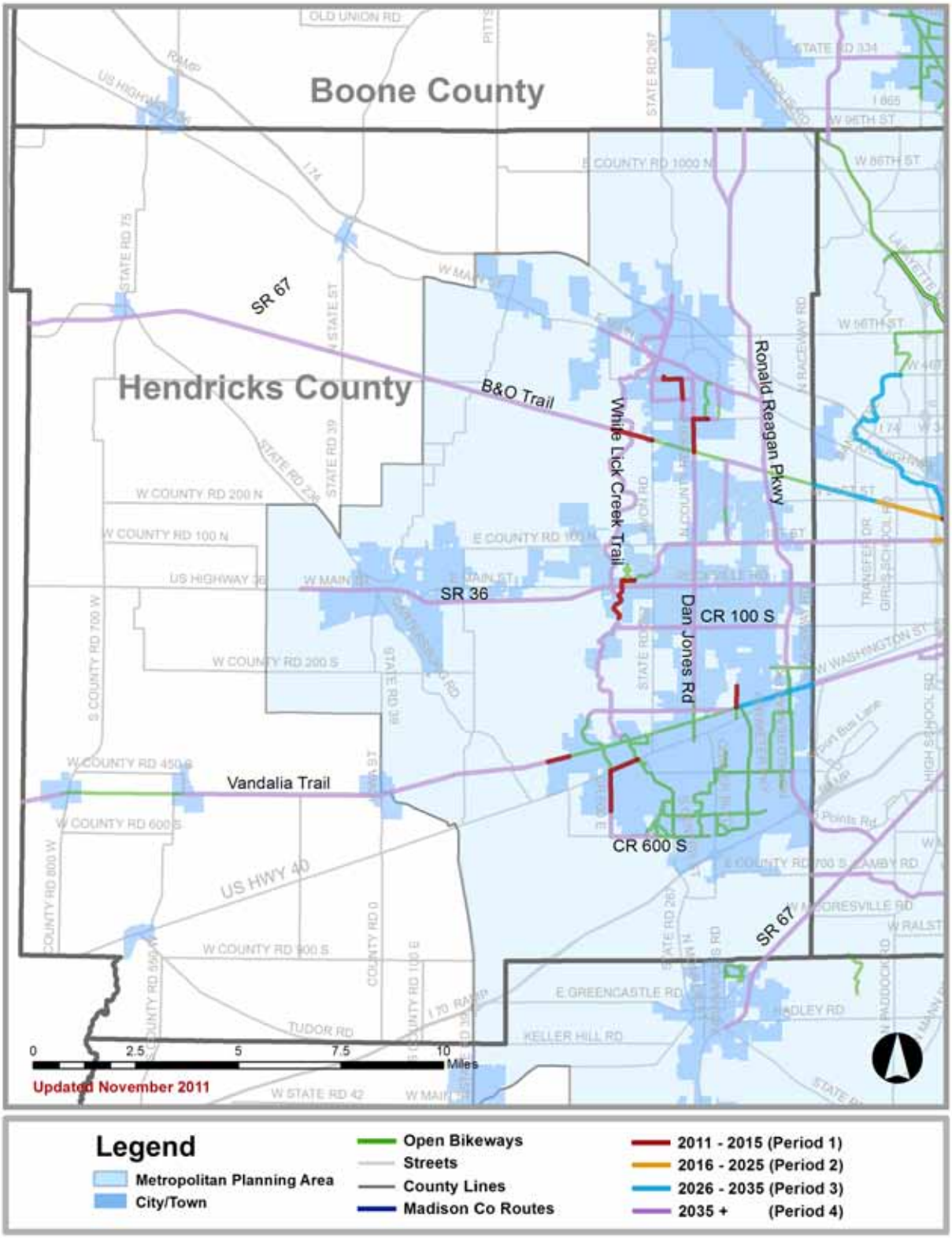
Hamilton County



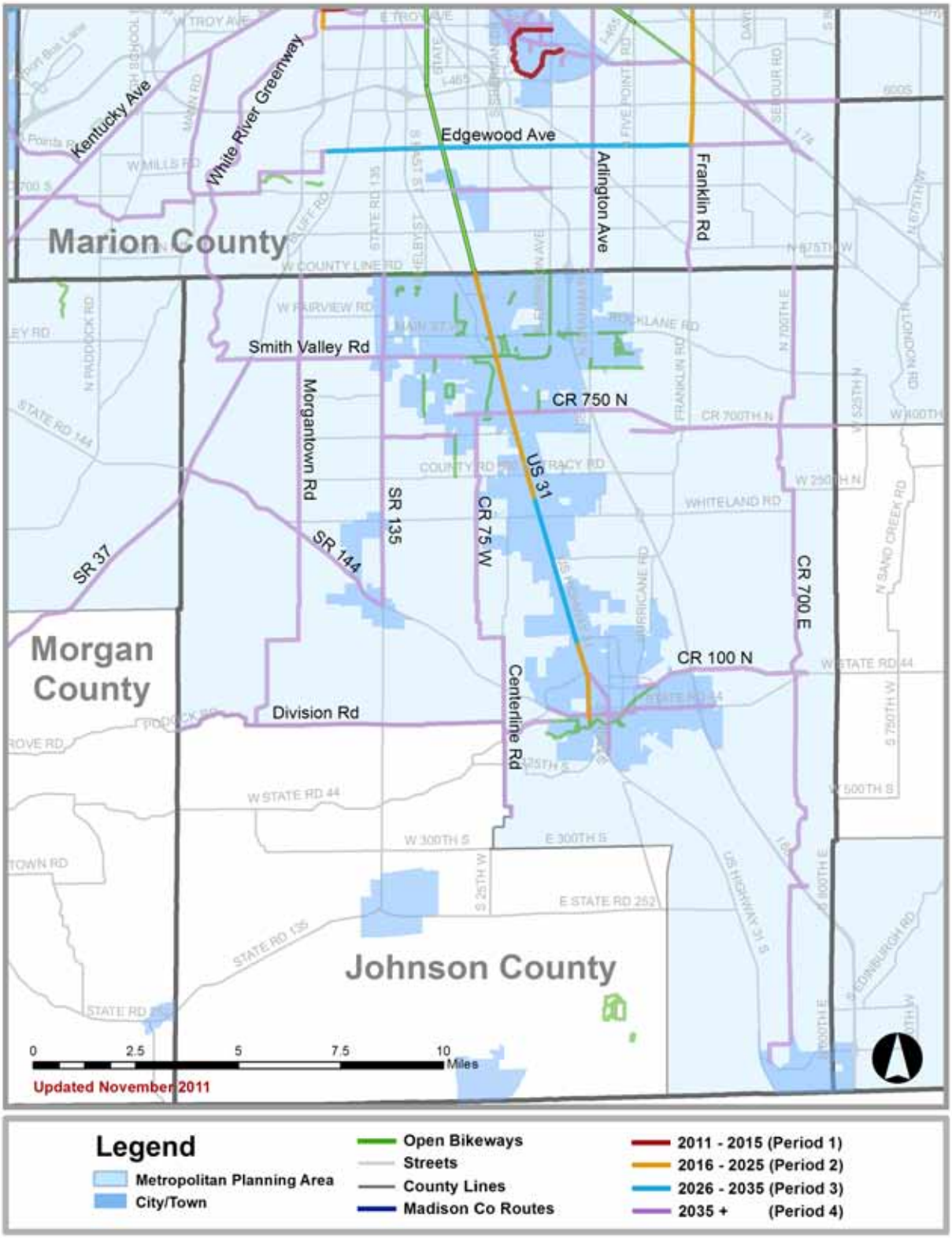
Hancock County



Hendricks County

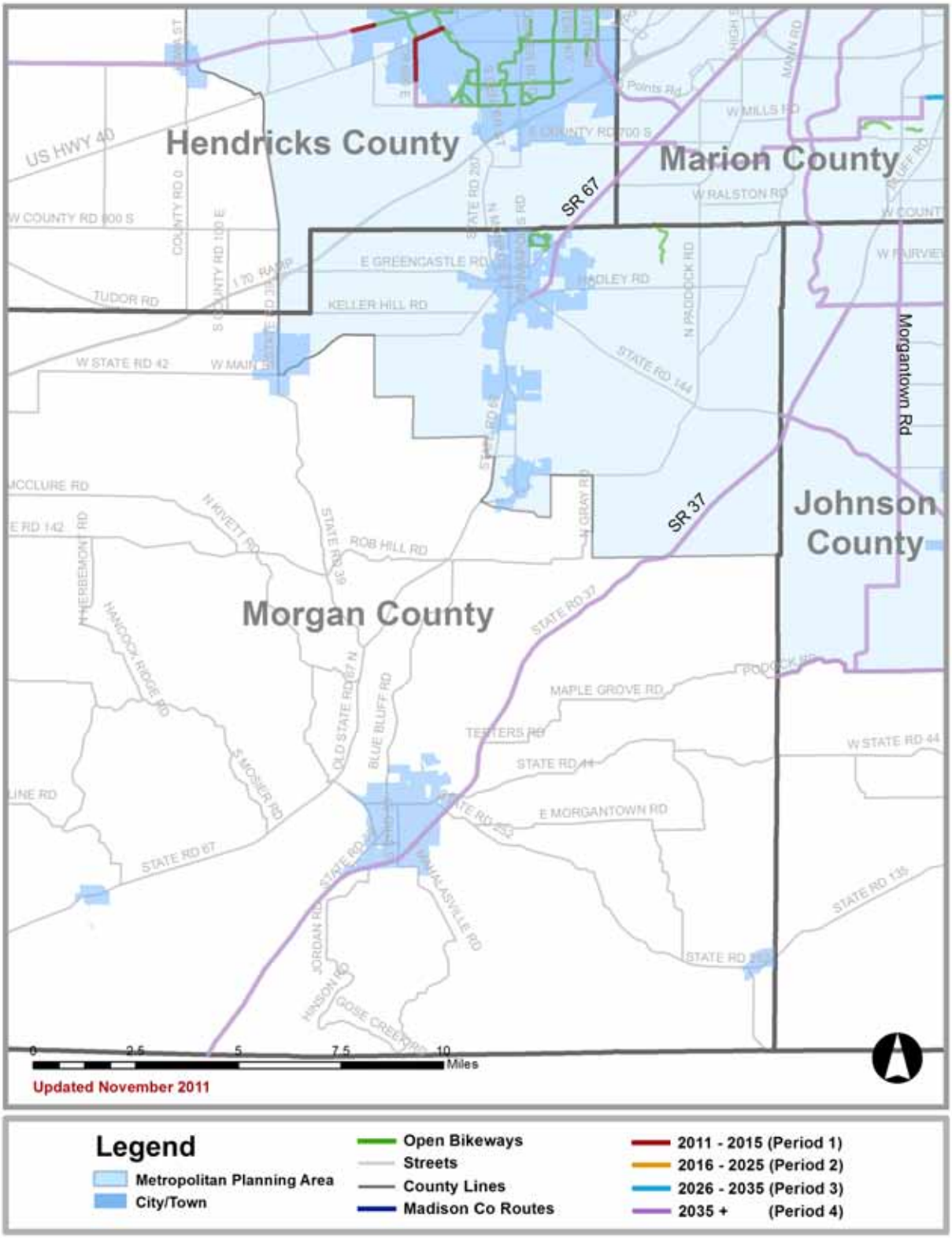


Johnson County

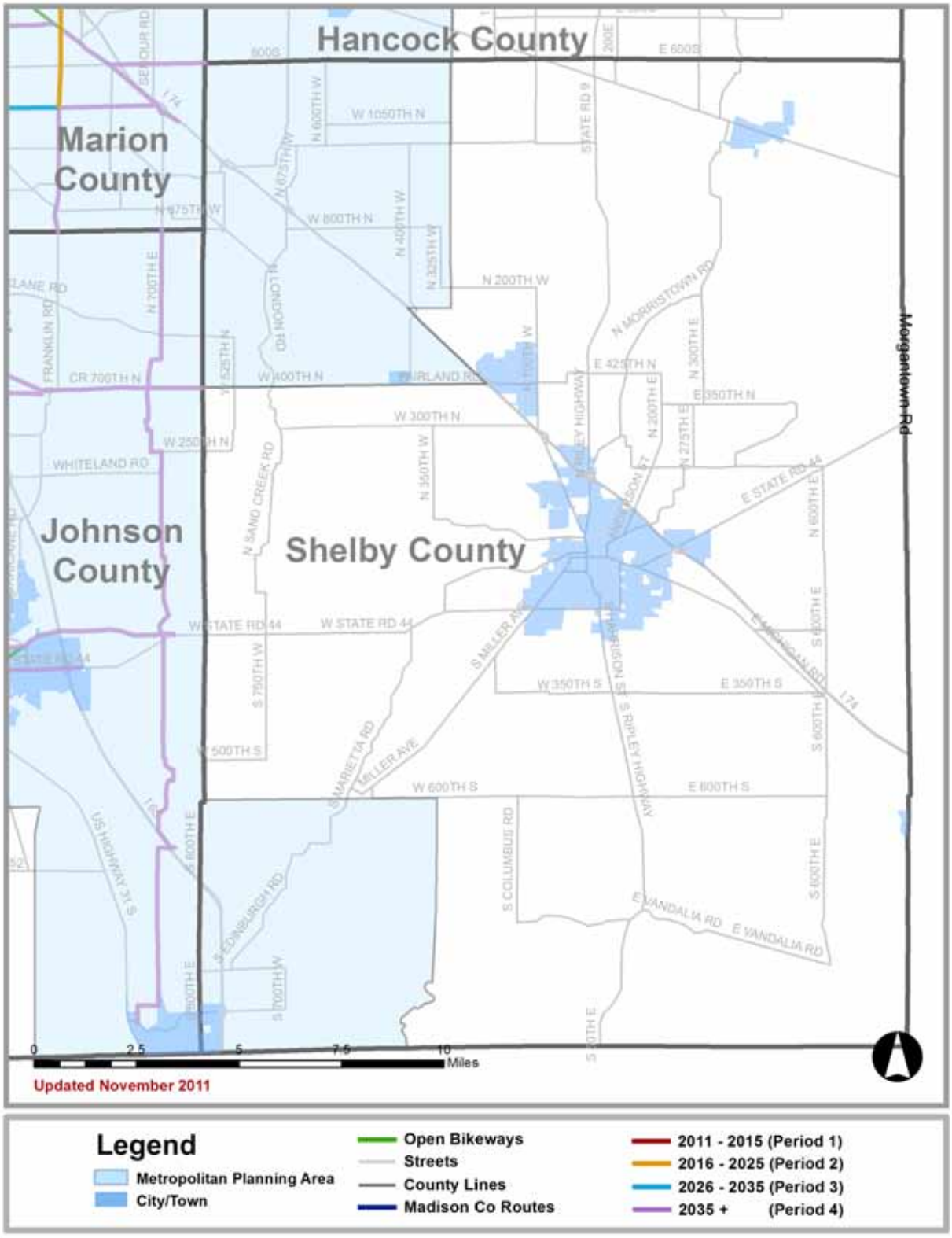


Marion County

Morgan County



Shelby County



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APPENDIX B | PLANNING DOCUMENTS

The following is a list of local planning documents that include bikeways. Each of the recommended bikeways routes from these plans were considered for inclusion in the Regional Vision plan shown on page 10.

Table B.1 Planning Documents

Organization/Municipality	Plan
MPO	Regional Pedestrian Plan
MPO	Indianapolis Regional Bicycle and Pedestrian System Plan
MPO	Central Indiana 2010 Campaign
City of Beech Grove	Beech Grove MultiModal Special Area Study
City of Carmel	C3 Plan 2009 (Carmel Clay Comprehensive Plan)
City of Carmel	Carmel Multimodal System Plan
City of Franklin	Bike and Pedestrian Schematic Master Plan
City of Greenwod	Greenwood Comprehensive Plan 2007-2027
City of Greenwod	Greenwood Trails and Greenways Master Plan 2010-2015
City of Greenwod	Greenwood Five year Parks and Recreation Master Plan
City of Indianapolis	Indy Bikeways Master Plan (DPW & SustainIndy)
City of Indianapolis	2002 Greenways Master Plan (IndyParks)
City of Lawrence	Pedestrian Study for the City of Lawrence
City of Noblesville	Noblesville Alternative Transportation Plan
City of Westfield	2010 Revised Alternate Transportation Plan
City of Westfield	Westfield Thoroughfare Plan Addendum
Boone County	Boone County Comprehensive Plan
Hamilton County	2007 Hamilton County Thoroughfare Plan Update
Hancock County	Hancock County Trails Plan
Hendricks County	2006 Hendricks County Comprehensive Plan
Johnson County	Johnson County Comprehensive Plan UPDATE
Morgan County	Greenway Master Plan
Shelby County	Shelby County Comp Plan- transportation chapter
Town of Avon	Avon White Lick Creek Trail - Route Feasibility Study
Town of Avon	Avon Bicycle and Pedestrian Master Plan
Town of Brownsburg	Hornaday Trail Project
Town of Brownsburg	Brownsburg Greenways Master Plan 2008
Town of Cumberland	Park Trail Map
Town of Danville	Thoroughfare Plan Update 2010
Town of Fishers	Bicycle and Pedestrian Trails Map
Town of McCordsville	Town of McCordsville Connectivity Plan
Town of Zionsville	Zionsville Master Plan
Binford Redevelopment and Growth, Inc.	INSTEPP Plan
Sustainable Design Assesment Team	Indianapolis Smart Growth Redevelopment District Plan

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APPENDIX C | PUBLIC COMMENT PERIOD

Appendix C contains a summary chart of the public comments recieved about the Central Indiana Regional Bikeways Plan. The chart also contains the written response to each comment. The comment period was from August 24th to September 23rd, 2011.

Table C.1 Public Comments

Comment 1
Jeremy: I just reviewed the "new" regional bikeways plan. Very impressive! I like the way you've sprinkled in the various quotes from famous and lesser known personalities. The color photos from around the region and the use of colored bar graphs adds variety and makes the whole plan more interesting and easier to read. Nice summary of the regional bikeways survey results. I don't have a lot of corrections yet, but I did notice on page 11, where you've listed central Indiana bicycling events that the B&O Trail Ride is listed as taking place in July. In the seven years that I've been participating in that ride it has always taken place the first Saturday in June, which is also National Trails Day. In two of the three Mayor's Rides (2010 and 2011) the two events have conflicted and probably pulled participants from each other. I like the idea of listing local events though. I also noticed on page 50 that you've listed the US DOT as having primary responsibility for the National Scenic Byway Program. As the former Indiana Byway Program Manager, I can tell you that INDOT has the primary responsibility for administering the program in our state, though the funds are federal. Generally, the program will fund any improvements that will enhance pedestrian and/or bicycle access to or safety along or across the byway or any relevant resources within the byway corridor. I think the fourth chapter should be entitled "The Present Bicycling Network". You really don't discuss the condition, as in physical state of repair, of the current bikeways. Unfortunately, the general lack of plans and cycling facilities planned south of Washington Street (and US 40 outside of I-465) is readily apparent in the maps and project lists. I'm also concerned that the scoring priority map on page 55 will continue to fuel claims that Marion County continues to get the majority of all transportation funding in the region. Let me know if you have any questions.
Response 1
Thank you Michael. I'll keep these comments on file. We can easily address the first few items you brought up. The project scoring is probably the main issue left to deal with for this plan. It's mostly a matter of not having found the proper solution yet to deal with the way the project scoring reflects benefits; generally in terms of serving the most people or allowing them access to more important destinations. Marion County scores very high in those regards. We are very open to making changes to the system if we can find another specific and measureable means of determining the benefits of putting a bikeway in one location over another. We hope that the comment period may bring something to light that could address the issue.

Table C.1 (Continued)

Comment 2
Dear Mr. Moore -As a bicycle commuter 10 months a year, I am ambivalent toward the efforts to make the city more bike/ped/bus friendly. While I dream of a city teeming with bikes and other forms of alternative transportation, I cannot stomach a plan which includes lanes such as the one on N. Illinois. It makes for good copy, but it is simply dangerous. Not only are cars flying by at ridiculous speeds, but one has to watch for exiting drivers who open their door without looking. The only project that has been worthwhile thus far is the Cultural Trail. The rest is simply a waste of taxpayer money, and as an avid commuter, of no help to me. It is only with serious changes that we will once again have everyone safely riding their bikes. I am waiting, patiently, for the day that someone has the fortitude to emulate what European cities have done. Are you the one? With hope in my heart
Response 2
Good morning. Thank you for sending me your comments about the bikeways plan. I see you are supportive overall of efforts to make cycling safe and encourage more people to get out on their bikes but have concerns over the design of bikeways in Indianapolis. Feedback like this is very helpful in letting us know what is working and what isn't with the bike lanes. These first few bike lanes projects in the City have taught us quite a few things about how the design influences use. We will do our best to try and make the lanes safe and convenient.
Comment 3
"I am not certain whoever wrote the Regional Bikeways Plan has actually ridden a bicycle in Indianapolis because no where is it mentioned that many of the existing and planned bike lanes decrease bicyclist safety. So, I would like whoever wrote the plan to accompany me on a bicycle ride sometime, so I can show them how dangerous some of the bike lanes are. As a certified instructor for the League of American bicyclists I teach my students to ignore bicycle lanes and ride, instead, in the safest manner possible. If it is safe to ride in the lane, then I encourage my students to do so. If it is not safe, such as when bike lane is placed next to parked cars, then I encourage my students to ride a safe distance away from the cars, which is usually outside of the bike lane and in the motor vehicle lane.Other hazards of bicycle lanes include:1. debris that collects in the lane because motor vehicles are not allowed in the bike lane. 2. pedestrians that use bike lanes because no sidewalk is provided. 3. the sudden disappearance of bicycle lanes at intersections. 4. motorists disobeying the 3-foot passing law even though they are in the motor vehicle lane while the bicyclist is in the bike lane.Bike lanes can be made safe, but as they are currently constructed, many of Indianapolis bike lanes are not safe. Again, I urge the author of the Bikeways Plan to ride with me sometime to view first hand the safety issues created by bike lanes in Indianapolis."

Table C.1 (Continued)

Response 3
Good morning. Thank you for your comments on the plan. The Bikeways Plan is actually series of routes where it is recommended that bikeways be made for safety and convenience of the cycling public. Because of its broad regional view, it has not made specific recommendations on actual design of those facilities. Specific design details are being handled by each of the jurisdictions that build them. However, there is a recommendation from the steering committee in Chapter 12 that promotes use of the NACTO Urban Bikeways Design Guide. This guide was not available when the first bike lanes in Marion County were designed and it is riders like you that are helping point out how those designs could be improved. I would be willing to take a ride with you sometime. I think the experience would be quite helpful. Please let me know when the best times for you would be to try this. Thank you.
Comment 4
First and foremost, let me express my appreciation and congratulations for such robust community engagement in this planning process! Between the public survey and presentations, large steering committee participation, and all of the 1:1 meetings and discussions you had, you truly involved the public and key stakeholders in a meaningful way. It will make successful implementation that much easier. Nice work! • I appreciate your inclusion of the 'crash rate' topic in the section on the safety goal. As we discussed at the steering committee meeting where this came up, using rate data (rather than just incidence data) helps to demonstrate the disproportionate risk that bicyclists and pedestrians face and elevates the importance of building a multimodal network to enhance safety for all users. You referenced that the MPO would work to further develop methodology and data, but I believe much of what you need should already be available through the Indiana Criminal Justice Institute (keeping in mind the other data limitations you referenced). I am certain there are several Health by Design partners who would gladly work with you to expand upon this specific issue, looking more closely at existing data and gaps, determining a system for monitoring and evaluation, and integrating it into broader traffic safety goals and strategies. • I would like to encourage the use of one or more additional methods for tracking bike facilities (beyond just length in miles) as plan implementation unfolds. Like with the example of incidence vs. rate above, I would argue that the use of total lane miles doesn't necessarily provide enough context to show how we're really doing in expanding the network. One option I've seen is to use a ratio of bike facility miles to total network miles; no doubt there are other good options as well. • It would be helpful to have a column for the type of funding (secured or anticipated) for the projects listed in the tables in Chapter 5. • Finally, in Chapter 12, it might be helpful to have a few additional opening sentences explaining further how local policies and practices support the plan and why they are so important to the overall success of the regional network.

Table C.1 (Continued)

Response 4
Good morning. Thank you for your comments on the bikeways plan. The bicycle crash rate is an important measure for us going forward and we will work to develop it. I'll work with some of those partners you mentioned to try and speed things up. We are open to other methods of tracking facilities. Ultimately, I think a good map shows progress the best. It could be quite useful to show a few of the other measures as well to tell more of the story. In the example you gave (ratio of bike facility miles to total network miles) is the "Total network" the total network of proposed bikeways or are we comparing it to the roadways network? At first glance it sounds like a % complete measurement. There is not room in the printed version of the bikeways plan for additional columns to the chart you mentioned. We do have the information and can work on making it available in an appendix or as a separate document for you. The introduction to Chapter 12 can be updated as you described. Thank you!
Comment 5
We appreciate your meeting with us today to discuss INSTEPP's request, as part of the Public Comment period, the incorporation into the Central Indiana Regional Bikeway Plan the addition, or extension of the"red" line indicating a proposed path (bikeway, etc) along 71st. The change would be to show a proposed path from Allisonville at the west terminus extending east to (either Graham Road, or) Binford Boulevard on the east terminus, which would align with the INSTEPP's past and current efforts to see full multi-modal connectivity along 71st Street through the BRAG boundaries (Allisonville to Hague). This piece was identified early on in the GINI process and in final reports as one of four primary segments whereby sidewalks or bikepaths were desired for improved safety and connectivity.
Response 5
Good morning. I appreciate being able to talk with you about the 71st Street proposal. I will work with the steering committee members involved to see if this change can be affected. Thank you!

Comment 6
Urban Indy blog post ffrom August 24th submitted as a public comment. http://www.urbanindy.com/2011/08/24/central-indiana-regional-bikeways-plan-up-for-review/
Response 6
Good morning. Thank you for submitting the comments on the Regional Bikeways Plan. The public comments are included in an appendix in the plan and a link to the blog from August 24th is included rather than the text from the blog. Your analysis of the plan is very accurate and helps out by getting people to think critically about the information presented. The Shelby Street cycle track is unique and I understand your enthusiasm for it. The other special projects are worth mentioning as well so I will give some thought to how they could be included and whether this is the appropriate place for it. For the most part, the plan steers clear of dictating design of bikeways to the local jurisdictions while giving consideration to bikeway corridors (regardless of facility type) as part of the bikeways network. Costs and facility type were considered after project scoring just to keep the financial part of the program in check. The $6 million mentioned in your post about pedestrian infrastructure is primarily used for maintenance of existing sidewalks. A few of the smaller communities have match funds where if private entities provide a certain percent of the funds then the local government will build the sidewalk. The only correction I have for the post is ”The planning horizon extends to 2035 and that period is sub-divided into 4 (should be 3 periods, period four is beyond 2035) periods in which projects are to be built.” The plan is not going up for adoption at the next IRTC policy meeting. It will likely be up for adoption in the first quarter of 2012 and may include another public comment period if significant changes are made. Thanks for getting the word out!

Central Indiana
Regional Bikeways Plan

prepared by

The Indianapolis Metropolitan
Planning Organization