

TRANSPORTATION

At this point of the *Greenway & Blueways 2020 Plan*, two major elements – Conservation and Recreation – have been analyzed. This next chapter on Transportation focuses on how to tie these together to create a cohesive, non-motorized network in Northwest Indiana.

For the purposes of this plan, the discussion will center upon the safe movement of pedestrians and bicyclists, primarily on our regional roadways. The *Ped & Pedal Plans* went to great lengths to outline best practices and strategies towards these ends. The *G&B 2020 Plan* will also touch on these practices as well, but more so as a guide than a detailed overview. To this end there will be references to documents for additional study and application.

An Abundance of Reason\$

Making the case for improving non-motorized connections in our region falls into three major categories – motorized vehicles, health, and economic benefits.

Addicted to Roads

There exists no better argument for improving our quality of life than the reduction of our near-obsessive reliance on the automobile (cars, trucks, vans, etc.). In 2009, over 83% of all person trips were taken by an automobile, compared to 10% by walking, and only 4% by bike¹. This represents a gross imbalance of transportation choices, and as a country we are paying dearly.

Accounting for all costs, from fuel to insurance to depreciation, the average car owner in the U.S. pays \$12,544 a year for a car that puts in a mere 14-hour workweek. Drive an SUV? Tack on another \$1,908.14². Now factor in the safety risks where the traffic death toll in 2015 exceeded 3,000 a month, where car crashes are the leading cause of death for Americans between the ages of 1 and 39³.

Worse yet are the air pollution risks where it has been estimated that 53,000 Americans die prematurely every year, losing 10 years of life on average compared to their lifespans in the absence of tailpipe emissions⁴. Combine this with traffic deaths, and health care costs relating to our automobile dependency are truly significant.

¹ National Household Travel Survey, U.S. Department of Transportation, Federal Highway Administration, 2009

² The Absurd Primacy of the Automobile in American Life, The Atlantic, Edward Humes, April, 2016

³ Ibid

⁴ Study: Air pollution causes 200,000 early deaths each year in the U.S., Massachusetts Institute of Technology, Jennifer Chu, August, 2013

Beyond our own personal costs are the enormous expenses on the public at large. The American Society for Civil Engineers has estimated that an annual expenditure of \$191 billion will be needed to keep up our roads and bridges, up by over half of the \$91 billion that is being spent currently⁵. This is a clear indication of how overbuilt our society has become for the accommodation of automobiles.

Obesity and US

NIRPC's 2005 *Ped & Pedal Plan* mentioned that, "America is growing...fat." Unfortunately obesity rates have only increased, and continue to threaten our collective quality of life. Between 2011 and 2014 it has been estimated that 36% of the U.S. adult population is now considered obese⁶, which is up from 31% as first reported in the 2005 plan.

Along with our growing waistlines are our shrinking pocketbooks. The estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008 U.S. dollars; the medical costs for people who are obese were \$1,429 higher than those of normal weight⁷. This is also up from a reported cost of \$117 billion in 2000.

A major culprit remains physical inactivity (along with poor nutrition as well). The typical adult requires at least 150 minutes of moderate aerobic activity or 75 minutes of vigorous aerobic activity a week, or a combination of moderate and vigorous activity⁸. However, it is estimated that only 21% of the adult population meets these standards⁹.

The key to increasing one's physical activity is providing a safe and accessible environment for one to walk and bike around in. The benefits of regular activity are enormous - from a healthier heart, to weight control, to reducing cancer risk and even improving one's mood. For a detailed list of these benefits, please visit www.cdc.gov/physicalactivity/data/facts.htm.

⁵ 2013 Report Card for America's Infrastructure, American Society of Civil Engineers, (online), 2013

⁶ CDC National Center for Health Statistics, Prevalence of Obesity Among Adults and Youth: United States, 2011–2014, November 2015

⁷ Eric A. Finkelstein, Justin G. Trogdon, Joel W. Cohen and William Dietz, Estimates Annual Medical Spending Attributable To Obesity: Payer-And Service-Specific, Health Affairs, (online) July 2009

⁸ Mayo Clinic, Health & Lifestyle Fitness, (online) August 2016

⁹ Centers for Disease Control and Prevention, Facts about Physical Activity, (online) May 2014

It's the Economy...

Advancing a non-motorized network can provide a community with a windfall of economic benefits. There are an abundance of resources that strongly back up the growing acceptance that people desire to live and work where they can readily ride and walk. As an example, a 2011 report found that bicycling and walking projects create 11-14 jobs per \$1 million spent, compared to just 7 jobs created per \$1 million spent on highway projects¹⁰.

In addition, the location of pedestrian and bicycle infrastructure can improve neighboring property values. A number of communities that constructed “Complete Streets” projects (see page T-9) were studied and showed marked increases in values, from 80% in Orlando, FL to 111% in Dubuque, IA¹¹. Locations near multi-use trails have also demonstrated a solid relationship to increased home values¹².

On a larger scale, the concept of “bicycle tourism” is rapidly becoming a popular option. Spurred on by the development of the United States Bicycle Route (USBR) system, cross-country bicycling has become far more accessible with many sites catering to these two-wheeled tourists. In NW Indiana there are two USBR’s – 35 running north and south through central LaPorte County, and 36 running from Michigan over into downtown Chicago. Both routes offer tremendous economic benefits for the communities they pass through. For more information on taking advantage of bicycle tourists, please visit www.adventurecycling.org/bicycle-tourism.

Thinking “Network”

Providing the proper infrastructure for the safe and accessible movement of pedestrians and bicyclists is paramount for any sound network to thrive. A local municipality must plan comprehensively for the broad solutions available to make their community walk and bike friendly. Thus, the concept of a *network* must take hold at all levels of government for a culture of non-motorized activity to emerge.

Thankfully we live today in a golden age of non-motorized facility development. Starting with the rails-to-trails movement in the 1980’s, and now blossoming nationwide, an abundance of resources and design solutions exist to help any community, at any size, achieve a measure of success in their planning and development efforts. In short, there are no excuses.

¹⁰ Political Economy Research Institute, Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts, Heidi Garrett-Peltier, June 2011

¹¹ Smart Growth America, Safer Streets, Stronger Economies – Complete Streets project outcomes from across the country, March 2015

¹² Headwaters Economics, Measuring Trail Benefits: Property Values, Spring 2016

Where off-road trails represent the “non-motorized superhighways” of our region, developing a network from these systems must be equal in importance to the hierarchy of our road network. Where interstates cannot deliver you to every destination, so trails can’t be the end-all to a non-motorized network.

This section will take the time to unpack and touch upon the myriad of policies and practices that can be employed rapidly here in NW Indiana. Up first however, is an overview of the safety hazards at play today in the NIRPC three-county region.

Negotiating the minefields

Exploring the NW Indiana by foot or by bicycle can be a harrowing experience. Apart from the robust regional trail network, a tiny fraction of streets have been improved to aid in the safe movement of non-motorized traffic. Due to this fact, most people who do access our trails end up driving to a nearby trailhead - justifiably fearful of walking or biking due to a lack of infrastructure.

However, trails are by far not the only issue at hand. Many destinations exist where safe routes need to be in place to give people additional access options other than the automobile. For far too many years our development patterns have catered exclusively to the motorized vehicle, and thus to the extreme detriment of all other modes of transport.

The dangers of negotiating our region roadways simply curtail any sane individual from walking or biking – no matter how close the destination. Narrow and/or damaged roads, congested intersections, and incomplete, broken or non-existent sidewalks are far too commonplace. It’s no wonder our nation’s levels for bicycling and walking to work or shopping are so low.

To gain an appreciation of the dangers inherent in today’s roadway network, the following figures offer a stark observation. Figure T-1 outlines the number of bicycle and pedestrian crashes that have occurred in NW Indiana between 2010 and 2016.

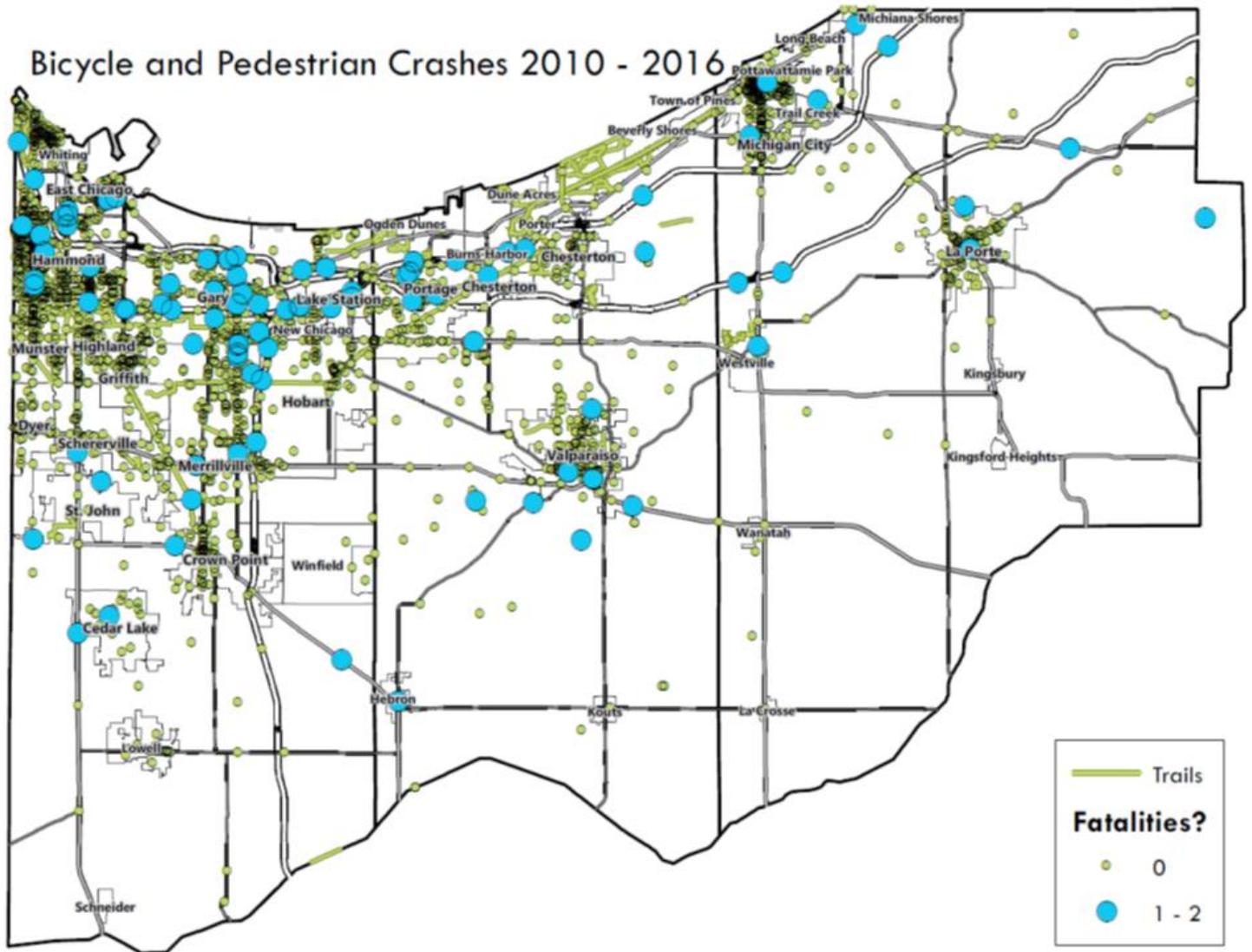


Figure T-1: Bicycle and Pedestrian Crashes Plus Fatalities 2010-2106

It must be noted that while any injury or death from non-motorized travel is tragic, there is a tendency to discard this data as “weak” due to the numbers involved. However, people in general don’t have a death wish, and thus will not even attempt to walk or bike on a vast number of our regional roadways. Much like trail proximity, improved infrastructure will yield more non-motorized users.

Creating the Network

In Northwest Indiana, as well as many other parts of the United States, incremental work needs to be done towards making our communities walk and bicycle friendly. We didn’t get to this state of affairs overnight, and it will take a concerted effort going forward to focus on network-wide solutions to counter our lack of non-motorized transportation options.

Solutions abound however, and have been employed in several communities in the three-county NIRPC region. The following highlights the steps necessary to create a community that values walking and bicycling as a legitimate form of transportation.

Network Planning

At the core of every walk and bike friendly community is a plan that supports its development and progress. Every municipality, at the local and county level, should undertake a serious planning effort to inventory and remedy non-motorized network options. This involves piecing together all major infrastructure elements such as trails, bike lanes, sidewalks, shared routes, and intersection treatments.

Network Elements

When creating a plan, a number of critical non-motorized infrastructure elements need to be addressed and mapped accordingly. These include the following:

- *Bicycle Routes*: These can be broken down into three classes of use:
 - **Class I: Trails & Cycle Tracks**
Provides a completely separated option for the exclusive use of bicycles and pedestrians with cross-flow traffic minimized. The trails are marked and landscaped. Fencing encourages use of designated access points.

Special caution must be afforded to the use of wide (8' plus) sidepaths along roadways. These can be counter-productive due to numerous driveways crossing along the route, creating a hazard for path users due to the lack of visibility from the driver. Only consider these options for bicyclists if long distances occur between driveways.

A cycle track is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. This is a helpful design treatment on busier roadways.



Cycle Track in Vancouver, BC. Photo by Hawaiian Bicycle League

➤ **Class II: Bike Lanes**

Provides a striped lane for one-way bike travel on a street or highway. Bike lanes are marked with signs and pavement striping, and sometimes even filled in with green or blue paint to further identify them from vehicular traffic. A one-to-two foot buffer strip can also be employed along the lane to increase the safety of users.

➤ **Class III: Shared Routes**

Provides for shared use with pedestrian or motor vehicle traffic. Bike routes are marked with signs, with optional sharrows. Sharrows are painted arrow symbols on the roadway signaling where bicyclists should ride. Wide shoulders (about four feet with no rumble strips) are another design option which should be explored. Currently over 600 miles of these routes exist in Porter and LaPorte Counties, mainly on rural roadways.

- *Pedestrian Routes:* The most important infrastructure element for pedestrians is the venerable sidewalk. No other facility is as critical to the safe passage of foot traffic as a sidewalk represents. Thus, their sound planning and maintenance are vital.

Unfortunately, sidewalks can be a blessing and curse in a community. A blessing where they adequately connect residents to nearby destinations, or a curse where they are incomplete, broken, or just plain missing.

Every proper non-motorized plan must take stock of the existing sidewalk inventory, cataloguing their completeness and condition, and a comprehensive plan to maintain them and construct critical gaps. This is especially important around schools.

- *Intersections:* Inevitably all non-motorized traffic will encounter conflict with motorized vehicles. These areas of conflict are primarily at intersections where sidewalks and bike lanes require designs for safe crossing. The typical solutions are clearly marked “zebra” crosswalks, with pedestrian countdown signals at traffic lights. At all intersections curb ramps should be installed with truncated domes for those in wheelchairs or visually impaired. Another enhancement also includes audible signals and bike boxes.
- *Mid-Block Crossings:* Apart for the obvious conflicts at intersections, increased attention to crossings “mid-block,” or a distance away from a stop sign or traffic lights, must be considered. In fact, it has been reported that mid-block locations account for 70% of pedestrian fatalities¹³. The prime reason for these accidents is distance to safe crossings at established intersections. Without a nearby crossing (150 feet or so), a pedestrian will most likely jaywalk into traffic.

Care then must be afforded in providing safe mid-block crossing treatments between intersections. A number of sound designs can be considered which include crosswalks, refuge islands, warning signs and even lighting. For heavily traveled roadways, a HAWK signal should be seriously considered.

- *Traffic Calming:* Beyond the design measures discussed, a wide range of other treatments exist to aid with controlling traffic movements and reducing vehicle speeds on streets. The primary goal to calming design is slowing traffic down. This can be achieved with narrower road lanes, road diets, speed tables, chicanes, traffic circles and related measures. An exhaustive resource on calming design can be found at the Institute of Traffic Engineers’ website at www.ite.org/traffic.
- *Bicycle Parking:* Provisions for secure and routine parking for bicycles remains an important feature in a comprehensive non-motorized network. Parking can come either through the installation of racks, or bike lockers, which house the entire bike. Design and placement of the parking is critical for success since many racks are either substandard, or not conveniently placed near a destination. For transit stations, lockers are highly recommended for added security. A free publication on the essentials to bike parking can be downloaded from <http://www.apbp.org/?page=publications>.

¹³ Medians and Pedestrian Crossing Islands in Urban and Suburban Areas, U.S. Department of Transportation Federal Highway Administration website, 2014

- *Wayfinding:* Getting around a community via streets safely for bicycling and walking are aided significantly by well-placed signage, or wayfinding. These signs can be as simple as identifying a bike route, to more elaborate designs which incorporate directions to nearby destinations. Wayfinding can also be painted onto the roadways for the identification of bike lanes, with more enhanced treatments such as green paint to help highlight these features. An overview of signage available for local road use can be found at www.trafficsign.us/bikesign.html.
- *Bicycle Sharing:* An increasingly popular option for those without bicycles is to “share,” or rent one for a short period of time, usually for utilitarian or commuting purposes. These bike share programs have popped up in just about every major metropolitan area in the world today. Much discussion has centered upon creating a similar program in NW Indiana, but costs (start-up plus ongoing maintenance) and lack of safe connections to destinations have been problematic. Opportunities for bike sharing may take place near the Indiana Dunes, and within the core communities.

Policy Development

Within the pages of a municipal pedestrian and bicycle network plan should be the consideration of a number of policies to advance their development. This section will focus on several which can provide an immediate impact to the non-motorized environment of any community.

Complete Streets

Policies advocating for the creation of Complete Streets, which emerged over a decade ago, has now grown rapidly throughout the United States. To date, over 730 agencies at the local, regional, and state levels have adopted Complete Streets policies, totaling over 950 policies nationwide. NIRPC was part of this wave with the adoption of our own policy and guidelines in 2010.

As for what Complete Streets are, Smart Growth America describes them as follows:

Complete Streets are streets for everyone. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

The comprehensive nature of Complete Streets remains critical for its success in creating road corridors that are comfortable for all users. How this looks is as varied as our roadways, and the communities they cross through. Some may need all modes accommodated including transit, some not nearly as developed as in rural areas.

So what remains the critical need are policies tailored to a particular municipality. For optimum success of a Complete Streets program, a policy should be adopted by the Common Council, either through resolution or ordinance, which establishes the incorporation of designs at the front-end of planning that provide maximum comfort for non-motorized users.

As of September 2016, three communities in the NIRPC region have adopted Complete Streets Policies – Lowell, LaPorte and LaCrosse. A number of others have draft policies in the works or are seriously moving forward with them. NIRPC also has adopted design guidelines from the Active Transportation Alliance in Chicago. These guidelines, as well as a host of other resources on creating policies at any level of community development, can be found and downloaded from <http://atpolicy.org/resources>.

Safe Routes to School

With poor land use planning has come an overreliance on the automobile for accessing any destination, no matter how close. Nowhere is this more evident than the amount of elementary and middle school children being dropped off and picked up every day. So much so that 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobiles¹⁴. During the morning commute, driving to school represents up to 10-14 percent of traffic on the road¹⁵

Primary to the reason behind such small numbers are safety concerns regarding the built environment. Parents are naturally hesitant sending their children to school on roads with no sidewalks and along busy, and fast, vehicular corridors. The result has aided with the obesity crisis in the United States where physical inactivity remains a main culprit.

Aiding with safe routes for children to access their schools would help instill healthy lifelong habits. In addition, safer routes would help decrease the number of vehicular accidents, which is a leading cause for children between the ages of 5 to 14¹⁶.

¹⁴ Data from the 2001 National Household Travel Survey conducted by Federal Highway Administration were used as the source.

¹⁵ Healthy Communities 101, Safe Routes to School Partnership website.

¹⁶ Centers for Disease Control, Web-based Injury Statistics Query and Reporting System (online). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, August 2016.



Walking School Bus Event. Photo by Mitch Barloga.

Safe Routes to School programs represent a comprehensive approach to getting children to walk and bike more frequently. These programs include education, enforcement and infrastructure improvements around the school facility. A wide range of events and activities can be incorporated to promote programs such as walking school buses and bicycle rodeos.

For a Safe Routes to School program to take root and flourish, strong support from the school principal is a must. Further assistance can be sought from PTA's and other parent-based organizations. Contacting your local police department also represents a good start in beginning a dialogue.

For more information on establishing a Safe Routes to School program within a school district, please visit either www.saferoutesinfo.org or www.saferoutespartnership.org.

Walk & Bike Friendly Designations

A top goal for any municipal entity towards improving non-motorized connections would be to strive for national designations. Two popular programs involve the League of American Bicyclist's "Bicycle Friendly America" and "Walk Friendly Communities." Each of these

programs are aimed at encouraging governments at all levels to commit to policies and development strategies to improve non-motorized conditions.

- *Bike Friendly America*: Sponsored by the League of American Bicyclists, the Bike Friendly America program provides municipalities, states, business and universities an opportunity to improve conditions for cyclists. Applicants complete a scorecard which gauges their “friendliness,” with League staff ready to assist to help improve scores. Applicants are awarded either bronze, silver, gold or platinum level status based on their progress.

The most popular of these remains the Bicycle Friendly Community program with approximately 250 communities awarded a designation, out of over 600 who have applied. These applicants are judged on five major areas of accomplishment in engineering, education, encouragement, enforcement and evaluation. For more information on this program, please visit www.bikeleague.org/bfa.

- *Walk Friendly Communities*: As important as recognizing bicycle friendliness are those communities who have created safe and substantial walking environments. On this note the Walk Friendly Communities program has designated to date 77 communities at a variety of levels (including Honorable Mention) that have demonstrated a continuing commitment to walking conditions. Details of this program can be found at www.walkfriendly.org.

Data Analysis

Non-motorized network advances can only take place with the right plans and policies enacted at the municipal level. To this end it is critical to gauge current progress in these areas, and to establish a baseline for regional improvement.

In the latter part of 2015, NIRPC released a survey exclusive to all local and county entities asking them to provide feedback on a number of topics relating to bicycle and pedestrian transportation. The results of their feedback are presented in this section.

- *Does your community have, or soon will have, a Complete Streets Policy?* There were 31 responses, with 11 claiming to have a policy, with 20 not having one. However, only six respondents were able to answer when this policy was adopted, with two claiming it was passed in the 1980’s. This raises questions since Complete Streets as a movement did not take place until the early 2000’s, and to date there are only three specific

Complete Streets policies adopted in the three county NIRPC region. More collaboration will be necessary to define what an entity claims as a CS policy.

- *What is your current program for repairing and/or installing sidewalks?* There were 30 responses, and 19 of these claimed complete municipal responsibility to repair and replace sidewalks. Six entities have programs where they share costs with property owner where the sidewalk is located – such as 50/50 programs for cost sharing. Five entities don't have sidewalks, or no public funds to improve them.
- *Does your community have a bicycle and pedestrian facilities plan?* There were 32 responses with 21 not having a specific plan, and 11 claiming to have adopted one. Of those 11 who have plans, the oldest dates from 2006, with the newest to be adopted in December of 2016. The average age of these plans is roughly five years. One respondent claimed their bicycle and pedestrian plan is addressed in their Park Master Plan and City Comprehensive Plan, which for the purposes of this document are not eligible.
- *Does your law enforcement have a program for bicycle safety?* There were 30 responses to this question, 11 claiming to have a program, and 19 having no program in place. Of those claiming to have a program, 10 of these involved direct educational programs with schools and children, usually held once or twice a year. One respondent claimed bicycle patrols, which is not applicable for the question asked.
- *Does your community work with a citizens bicycle and pedestrian advocacy group?* There were 32 respondents, with a vast majority of 24 claiming no collaboration. Eight entities do claim to work with a local group, and more outreach is needed to connect with other communities to mobilize citizen support.
- *Does your community have a bicycle parking ordinance?* There were 30 responses, with a vast majority of 25 having no ordinance in place. Five entities do claim such an ordinance, which are critical to helping encourage more ridership to various destinations. An example of a model ordinance can be seen in Appendix X.
- *Does your community host any major bicycling events or rides?* There were 30 responses with 11 of these claiming to host such events. These include three night rides (Valparaiso, Hammond & Munster, and LaPorte), and a number of special rides that are family orientated. One ride involves an extensive bicycle route up to 55 miles, with smaller routes included.

Advanced Performance Measures

In 2016, the U.S. Federal Highway Administration (FHWA) released an excellent document outlining best practices for advanced non-motorized data collection. Their *Guidebook for Developing Pedestrian and Bicycle Performance Measures* represents an exhaustive collection of data collection practices that help gauge progress in non-motorized transportation facility development. A number of these practices should be explored for further research by NIRPC staff and include these primary considerations:

- *Access to Community Destinations:* The proximity of pedestrian, bicycle, and transit infrastructure and services to origins and destinations (e.g. shopping, recreation, entertainment, etc.)
- *Adherence to Traffic Laws:* A measurement of how well pedestrians, bicyclists, and motorists obey current traffic laws
- *Average Trip Length:* The average distance or time traveled between an origin and a destination in a given geographical area.
- *Connectivity Index:* Connectivity is a representation of the number and directness of travel routes and options available to a user, while a connectivity index represents a number of specific measures user to assess walking and biking connectivity in a specific area
- *Facility Maintenance:* A measurement of the physical condition and state of repair for pedestrian and bicycle facilities
- *Mode Split:* The proportion of total commute trips by transportation mode
- *Person Throughput:* A mode neutral estimate of the person through-capacity of a given corridor. The fundamental unit of measure is a person. In other words, it measures the number of people using a corridor, regardless of the mode of transportation
- *Route Directness:* A measurement of the most direct routes for walking and biking between two designated locations. Ideally, walking and biking routes should be as short and direct as possible without sacrificing user comfort
- *Volume:* The measured (i.e., counted) number of pedestrians and bicyclists in a specified area for a designated period of time

Each of these performance measures mentioned would take additional staff and/or financial resources to accomplish successfully at NIRPC. Their mention serves as a goal as NIRPC grows in its capacity. However, a number of performance measures have been assimilated into the Implementation chapter which follows next.