Bicycle & Pedestrian Plan

for the Rockford Region

MPO | REGION 1 PLANNING COUNCIL

R1

Adopted Report

August 2023

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This document has been prepared by Region 1 Planning Council in collaboration with its member agencies, partnership organizations, and local stakeholders.

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The contents, views, policies, and conclusions expressed in this report are not necessarily those of the above agencies.

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Chapter 1

Introduction

Background & Purpose

About the Rockford Region

The purpose of the Bicycle and Pedestrian Plan (the Plan) is to promote a safe and efficient transportation network for all users through a balanced multi-modal system that minimizes costs and impacts to the taxpayer, society, and the environment. The Plan addresses the development of a region-wide system of on-street bicycle and pedestrian facilities to connect with shared use paths, existing and planned public transportation services in the Rockford Metropolitan Planning Area (MPA).

This Bicycle and Pedestrian Plan aligns with the Metropolitan Planning Organization's (MPO) 2050 Metropolitan Transportation Plan (MTP) for the Rockford Region. The MTP was developed to plan for an effective transportation system within the Rockford Region through a continuing, comprehensive, and cooperative (3-C) planning process.

About the MPO

By federal law, all urbanized areas over 50,000 persons are required to have an organization that plans and coordinates decisions regarding the area's surface transportation system, known as the MPO. The MPO is required to conduct a 3-C transportation planning process.

The five core functions of the MPO are to:

- Establish a fair and impartial setting for effective regional transportation decision making in the metropolitan area;
- Evaluate transportation alternatives, scaled to the size and complexity of the region;
- Maintain a long-range transportation plan, covering a 20-year planning horizon;
- Develop a four-year Transportation Improvement Program (TIP) and prioritize projects; and
- Involve the public.

There are three key documents produced by the MPO, including the Unified Work Program (UWP), the Transportation Improvement Program (TIP), and the Metropolitan Transportation Plan (MTP). The UWP is an annual statement of work identifying the transportation planning priorities and activities to be carried out by the MPO within a metropolitan planning area (MPA). Updated annually, it includes a description of the planning work and resulting products, who will perform the work, time frames for completing the work, cost of the work, and source(s) of funding. The TIP is an annual program of projects covering a period of years that is developed and formally adopted by an MPO and is required for projects to be eligible for federal funding under 23 U.S.C and 49 U.S.C Chapter 53, as well as state funding through the Illinois Department of Transportation (IDOT). The MTP is the official multimodal transportation plan addressing no less than a 20-year planning horizon that the MPO develops, adopts, and updates through the metropolitan transportation planning process. The MTP is updated every five years.

Due to the size of the Rockford urbanized area, the Rockford MPO has an additional designation, known as a Transportation Management Area (TMA). A TMA is an urbanized area with a population of over 200,000 individuals, as defined by the U.S. Census Bureau. MPOs with this designation have additional roles and responsibilities to the core functions identified above, including the development of a Congestion Management Process (CMP) and project selection for the sub-allocation of Surface Transportation Block Grant (STBG) funds, including the Transportation Alternative (TA) Set-Aside program, as well as Carbon Reduction Strategy funds.

In the Rockford Region, the MPO transportation planning function is housed within Region 1 Planning Council (R1). R1 is a special-purpose, regional government agency designated to coordinate intergovernmental collaboration. This regional model provides an efficient means to promoting a well-informed, comprehensive dialogue that holistically addresses regional issues by fulfilling the needs of government entities for long-range planning, securing funding, and analyzing and providing data in support of

regional projects and initiatives. Essential to fulfilling its purpose as a planning commission, R1 is a designated MPO, economic development district (EDD), countywide geographic information system (GIS), and land bank authority (LBA).

Structure

The MPO is empowered by a cooperative agreement developed and mutually adopted by the cities of Belvidere, Loves Park, and Rockford; the Counties of Boone and Winnebago, the Village of Machesney Park; Rockford Mass Transit District (RMTD); and the State of Illinois, acting through the Illinois Department of Transportation (IDOT).

The activities of the MPO are directed by a Policy Committee that consists of the top elected officials from the above entities plus the Deputy Director from IDOT Region 2 and the Chairman of the RMTD Board of Trustees. The Policy Committee receives technical recommendations and assistance from a 20-member Technical Committee comprised of planners and/or engineers from the above entities along with other local entities, such as the Chicago-Rockford International Airport, and the Four Rivers Sanitation District.

Much of the day-to-day operations and technical work of the MPO is accomplished by a professional staff under the management of the MPO Director, in close coordination with R1's Executive Director.

The planning process and activities are funded by annual planning grants from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), with 20 percent matching funds from IDOT through the State Planning Fund (SPF) and through local contributions from local government agencies.

Study Area

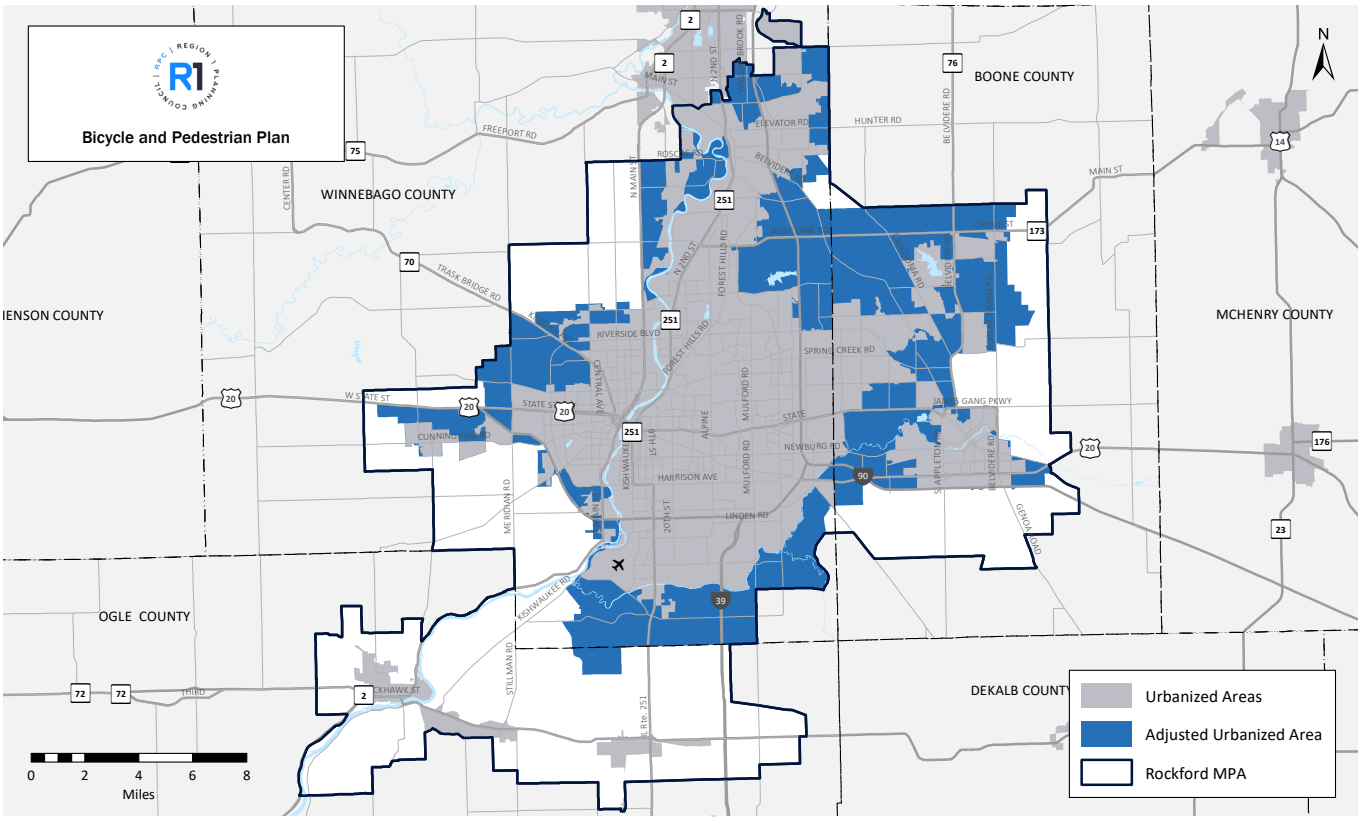
The planning jurisdiction of the MPO is known as the Metropolitan Planning Area (MPA). The MPA boundary is based upon the Urbanized Area (UZA), as determined by the U.S. Census Bureau, the adjusted Urbanized Area, as determined by the MPO and its partner agencies, plus any other contiguous area anticipated to be urbanized in the next twenty years.

The MPA boundary is developed in partnership with local jurisdictions, local stakeholders, the state, and the MPO Policy Committee. The last updates to the MPA boundary occurred after the 2010 Decennial Census, at which point the northeastern portion of Ogle County was included.

Map 1-1 depicts the MPA boundary for the MPO planning area, along with the U.S. Census defined Urbanized Area.

As shown in Map 1-1, the Rockford MPA is smaller than the boundaries of Boone, Ogle, and Winnebago Counties and covers approximately 440 square miles. However, to a limited extent, the MPO coordinates transportation planning and improvement activities throughout those counties. This occurs voluntarily via communication and cooperation of Boone, Ogle, and Winnebago County officials serving on the MPO Policy and Technical Committees.

Map 1-1: Rockford Metropolitan Planning Area



Source: Region 1 Planning Council

Local Context

The Rockford Metropolitan Planning Area (MPA) is located in north-central Illinois in the scenic Rock River Valley. The region is at the confluence of four major river systems in northern Illinois, including the Kishwaukee River, Pecatonica River, Sugar River, and Rock River, the largest and most central.

The MPA is located near the Illinois-Wisconsin Stateline and is approximately 70 miles northwest of downtown Chicago, 60 miles southeast of Madison, and 80 miles southwest of Milwaukee. The City of Rockford forms the primary urban core of the region. Rockford is the third-largest city in Illinois, encompassing approximately 64 square miles.

The region was originally founded as an agricultural area, but quickly became a major transportation hub due to its location between Chicago and the Mississippi River. The region still remains a hub for highways, rails, and air travel. The region is served by Interstates 90 and 39, U.S. Route 20, and Illinois Routes 2, 70, 72, 76, 173, and 251. The Chicago Rockford International Airport (RFD) is located in the City of Rockford.

The Cities of Rockford and Loves Park, as well as the Villages of Machesney Park and Roscoe, have experienced a large land expansion east through the second half of the 20th century. Beyond their downtown areas along the Rock River, commercial and industrial development follows the major arterial corridors to the east, towards Interstate 90, surrounded by low-density, single-family residential zoning. Similarly, the City of Belvidere has experienced a large expansion south of their downtown, along the Kishwaukee River, towards Interstate 90 and U.S. Route 20. The street network outside of the downtown areas is disconnected making bicycling more circuitous.

Geography and Climate

Weather is often cited as a significant barrier to walking and bicycling. Due to its location in the Midwest, the region experiences four clearly defined seasons. Generally, the region experiences hot, humid summers, with highs in the low to mid 80s, and cold winters with highs in the low 30s. The region does experience some extreme temperatures during the winter months, with wind chills down to -20° F. While extreme hot and cold temperatures may deter some people, some cities with the highest rates of walking and biking in the country are in areas with temperature extremes, such as Boston and Washington D.C. The Rockford area averages 37 inches of rain annually, with higher monthly precipitation averages in May and June (See Figure 1-1) and averages an annual snowfall of 37 inches.

Population Characteristics

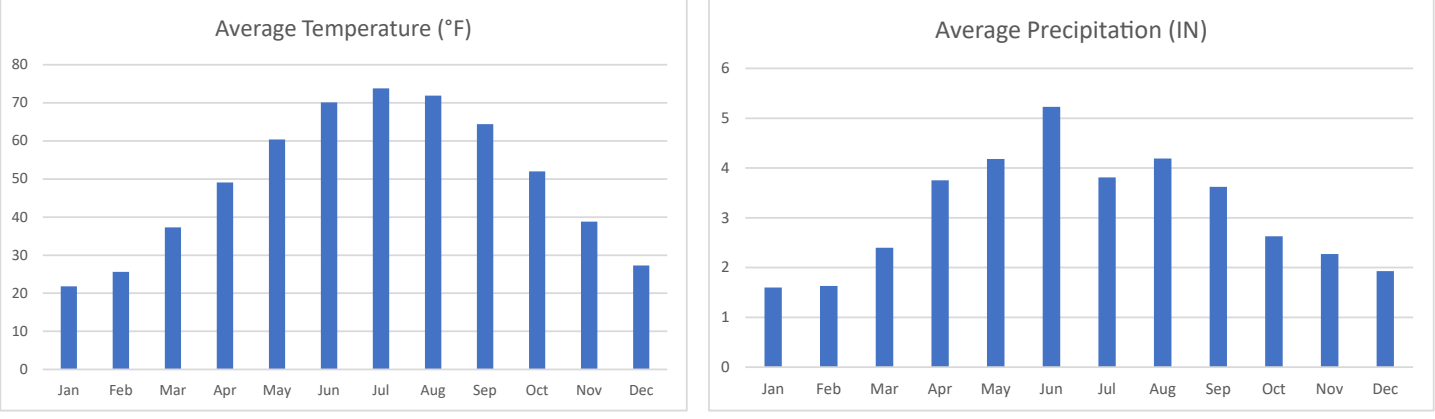
Understanding the growth and composition of the demographics that make up the Rockford Region's population is an important factor in the development of this Plan. The following section provides an overview of the historic trends in population change in the region, as well as an analysis of the characteristics of the residents' composition.

Population growth has historically varied across the Rockford Region. Growth in the region slowed to less than two percent during the economic recession of the 1980s. Following the recession, Ogle and Winnebago Counties both returned to a more moderate growth rate – slightly exceeding the average growth rate for Illinois but still lagging behind the National average. During the same time, Boone County experienced a rapid population increase; between 1970 and 2010, the County's population more than doubled.

The Rockford Region has seen a decrease in population over the last decade. According to the 2020 ACS 5-Year Estimates, the three-county region has declined to a total of just 336,928 people from the 396,687 people seen in 2015.

The median age of residents in the Rockford Metropolitan Statistical Area (MSA) is currently 39.7 years old, which is slightly higher than the state and national median age of 39 and 38.8 respectively. Children under the age of 18 comprise 17.4 percent of the population, while those over the age of 65 comprise 24.4 percent of the population. The remaining 58.2 percent fall

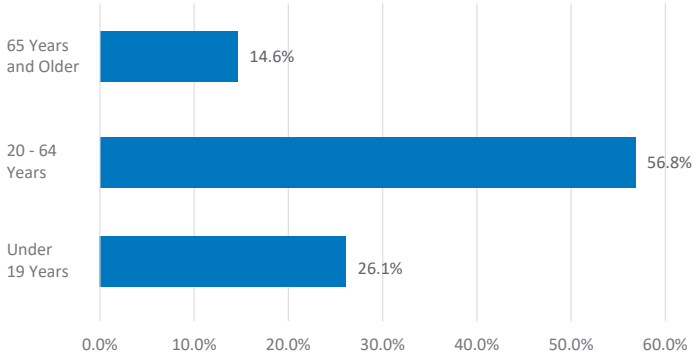
Figure 1-1: Average Monthly Temperatures & Precipitation



Source: National Oceanic and Atmospheric Administration. National Climatic Data Center. Monthly Climate Normals, 1991- 2020

between the working ages of 18 to 65 years old. Figure 1-2 shows the age distribution of residents in the Rockford MSA.

Figure 1-2: Age Distribution in the Rockford MSA

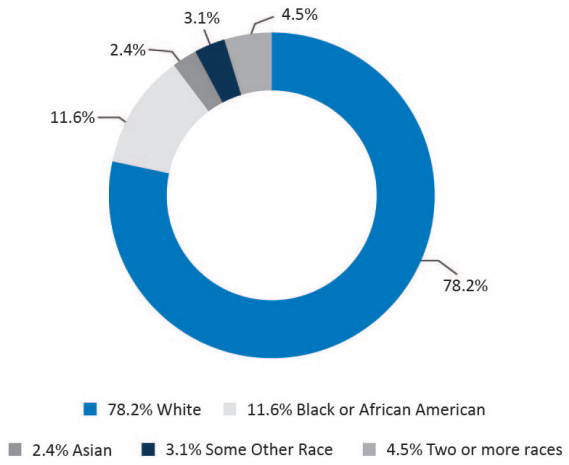


Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

The majority of residents (78.2) in the Rockford MSA are white, followed by 11.6 percent Black or African American, 4.6 percent "Other", 4.5 percent "Two or More Races", and 2.4 percent Asian. Hispanic, which is considered an ethnicity and not reported in race totals, represents the largest minority in the MSA at 14.5 percent.

Winnebago County has the highest percentage of African Americans (13.3 percent), while Boone County has the highest percentage of Hispanics at 22.2 percent.

Figure 1-3: Demographic Composition in the Rockford MSA



Source: U.S. Census Bureau, 2016 -2020 American Community Survey 5-Year Estimates

Metropolitan Statistical Area

The county or counties (or equivalent entities) associated with at least one urbanized area with a population of at least 50,000, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties.

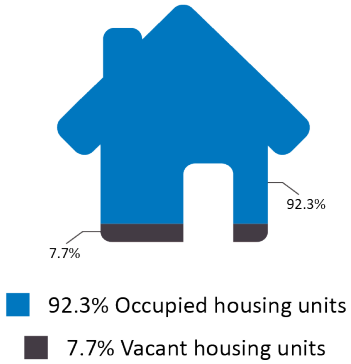
Source: U.S. Census Bureau

Housing Characteristics

In the region, the number of households steadily grew between 2010 and 2020. Winnebago County experienced the greatest rate of household growth during this time and remains the population center for the region.

In 2020, the vacancy rate for the region was 7.7 percent, which decreased from the high 9.2 percent in 2015. This is below than the vacancy rate the state at 9.1 percent and the national average of 11.6 percent.

Figure 1-4: Occupancy Rates in the Rockford MSA



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Years Estimates

Following the national trend of diminishing household sizes over time, in 1970 the three-county area averaged 3.2 persons per household, whereas by 2015 it fell to an average of 2.6 persons per household and continued to decline to 2.5 persons per household in 2020. According to the 2020 estimates, Boone County has the largest average household size of 2.82 people, while both Ogle and Winnebago Counties have an average household size of 2.4 people.

Boone County has a high percentage of owner-occupied housing units at 82.4 percent, compared to only 65.5 percent owner-occupied in Winnebago County. Ogle County falls between the two with 71.9 percent of the housing units being owner-occupied. All three counties are less than the statewide average of 90.9 percent and the national average of 88.4 percent of owner-occupied units.

Table 1-1: Housing Characteristics by County

	Boone	Ogle	Winnebago
Households	20,079	22,687	125,703
Vacancy Rate	1,280	1,720	9,935
Owner Occupied	18,799	20,967	115,768
Structure built before 1939	3,158	4,702	18,858
Structure built after 2010	459	298	1,786

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

Income Characteristics

Per capita personal income (PCPI) is a measure of income per person. The PCPI for 2020 in the Rockford MSA is $30,331 which is an increase from the 2015 PCPI of $25,350. At the county level, Winnebago has the lowest PCPI at $29,894, while Boone County had the highest at $32,659. At the state level, PCPI for 2020 was $37,306, which is higher than the national PCPI of $35,384. Since PCPI represents a mean, it does not accurately represent the income distribution of the region.

Median household income is a common measure for the economic wellbeing of an area. The 2020 median household income for the MSA is $56,899; Boone County has the highest median household income of $63,864, while Winnebago is the furthest behind at $55,310. For comparison, the 2020 median household income for Illinois was $68,428 and $64,994 for the nation. The region lags behind both the state and nation, however offers a relatively lower cost of living.

The MSA has high rates of poverty. In 2020, almost 10.8 percent of families and 14.6 percent of individuals living in the MSA are below the poverty level. Winnebago County experiences the highest level of people living below poverty at 15.8 percent. However, that has decreased from 18 percent in 2010. Compared to the statewide poverty rate of 12 percent of individuals living below poverty, Boone and Ogle Counties have lower rates of 8.2 percent and 9.6 percent, respectively.

Table 1-2: Income Characteristics by County

	Boone	Ogle	Winnebago
Per Capita Income	$32,659	$31,974	$29,894
Median Household Income	$70,396	$63,643	$55,310
Persons Below Poverty	8.2%	9.6%	15.8%
Families Below Poverty	5%	6.1%	11.9%

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

Education

In 2020, there was an estimated 80,225 people above the age of three years old enrolled in school within the Rockford MSA. Of those students enrolled, 72.9 percent were enrolled in Kindergarten to 12th grade (K-12) program. At the county level, all three counties have a proximately, the same percent of K-12 students enrolled in public school with Boone County at 72.8 percent, Ogle County at 73.9 percent and Winnebago County at 72.9 percent. The three-county region had 16.8 percent enrolled in undergraduate college. Boone County has the highest college enrollment rate at 17.6 percent, while Ogle County was only at 15.4 percent of the population enrolled in undergraduate college.

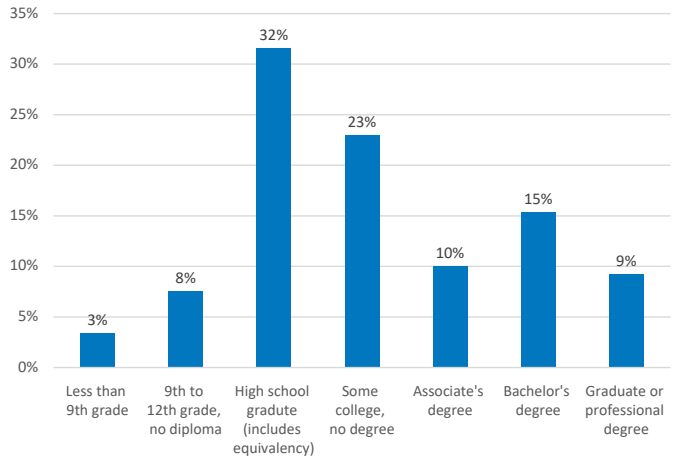
Table 1-3: Education Characteristics by County

Boone	
K-12 Enrollment	10,248
College Enrollement, Undergraduate	2,353
Graduate of Professional School	456
Ogle	
K-12 Enrollement	8,939
College Enrollement	1,947
Bachelors Degree or Higher	510
Winnebago	
K-12 Enrollement	49,031
College Enrollement	10,372
Bachelors Degree or Higher	2,585

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates Detailed Tables

Within the region, 87.6 percent of the population over the age of 25 has obtained a high school degree or higher, with a statewide average of 89.7 percent in 2020. Beyond high school, 24.1 percent of the population over the age of 25 have received some college as their highest educational attainment, 9.3 percent obtained an Associate Degree, 14.8 received a Bachelor Degree, and 8.4 percent received a graduate degree of higher. Winnebago County has the highest percent of the population with some college at 24.5 percent, with all Boone County (14.6 percent), Ogle County (14.2 percent), and Winnebago County (14.8 percent) having approximately the same percent of the population with a Bachelor's Degree.

Figure 1-5: Educational Attainment in the Rockford MSA



Source: U.S. Census Bureau, 20116-2020 American Community Survey 5-Year Estimates

One of the region's assets is the quality of higher education within commuting distance. The City of Rockford is home to Rockford University, a private four-year college, as well as the University of Illinois' College of Medicine at Rockford. There is also Rock Valley Community College and several technical colleges within the region. The region is also within commuting distances of several four-year colleges and universities, such as Beloit College, Northern Illinois University, and University of Wisconsin-Whitewater.

Table 1-4: Colleges within Commuting Distance

Four Year Institutions		
Institution	**Distance**	**Enrollment***
Beloit College Beloit, Wisconsin	16 Miles	1,011
Blackhawk Technical College Janesville, Wisconsin	23 Miles	8,741
Judson University Elgin, Illinois	44 Miles	934
Northern Illinois University DeKalb, Illinois	28 Miles	16,234
Rockford University Rockford, Illinois	Within MPA	1,250
St. Anthony College of Nursing Rockford, Illinois	Within MPA	189
Upper Iowa University Rockford, Illinois	Within MPA	142
University of Wisconsin - Whitewater Whitewater, Wisconsin	43 Miles	10,494
Community Colleges		
Institution	**Distance**	**Enrollment***
Highland Community College Freeport, Illinois	30 Miles	2,700
Kishwaukee College Malta, Illinois	26 Miles	2,626
Rock Valley College Rockford, Illinois	Within MPA	2,494
Other Institutions		
Institution	**Distance**	**Enrollment***
Rockford Career College Rockford, Illinois	Within MPA	408
Rasmussen College Rockford, Illinois	Within MPA	1,729
University of Illinois- Rockford Health Sciences Campus Rockford, Illinois	Within MPA	230
*2022-2023 enrollment numbers from each college's website		

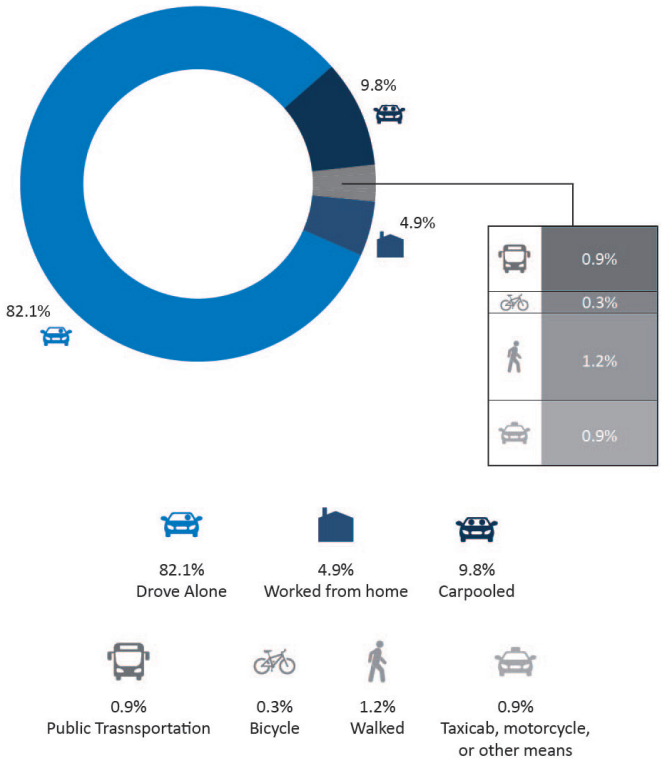
Commuting Characteristics

Within the Rockford Region, the vast majority of residents get to work by a personal vehicle; with 82.1 percent of workers age 16 and over in the MSA drive alone to work, while the other 9.8 percent carpool. Alternative transportation choices, including public transportation, walking, or biking combined are used as the primary mode of transportation to work by three percent of the MSA population. The remaining 4.9 percent of the population work from home in 2020.

While only a small portion use alternative transportation choices, 2.4 percent of the MSA population is composed of zero car households. This discrepancy indicates either a portion of the zero car households carpool with others, work remotely, or are unable to work.

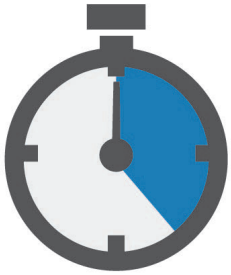
The average commute time to work in the MSA is 23.8 minutes; the average commute time was higher for Boone County at 28 minutes. For comparison, 11.8 percent of Boone County workers have a commute of greater than 60 minutes, whereas Ogle and Winnebago County had 6.4 percent and 7.4 percent commuting longer than 60 minutes.

Figure 1-6: Means of Transportation to Work in the Rockford Area



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

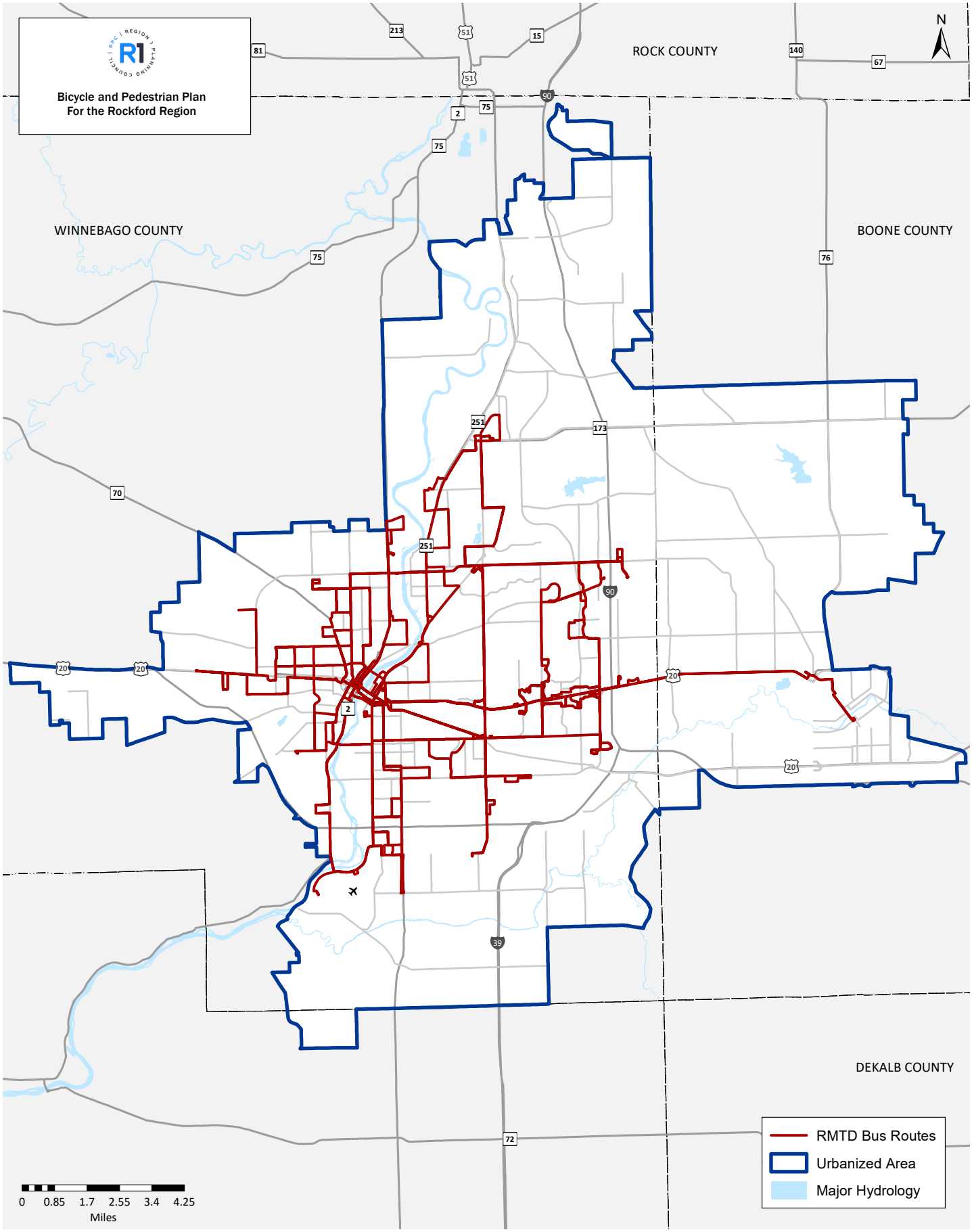
Figure 1-7: Mean Travel Time to Work



23.8 Minutes
Mean travel time to work

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

Map 1-2: Rockford Mass Transit District's Fixed Route System



Source: Region 1 Planning Council

Public Transportation

The Rockford MPA is served by the Rockford Mass Transit District (RMTD) as well as several demand-response transit services. Rockford Mass Transit District has provided fixed-route transit services for the Rockford Urbanized Area for the past fifty years. The bulk of RMTD's service area is within the City of Rockford, as well as services to the Cities of Belvidere and Loves Park and the Village of Machesney Park. Rockford Mass Transit District provides various routes at a relatively low price at $1.50 for a full one-way fare, $3 for an all-day pass, and $55 for a monthly pass. Most routes operate between 4:15 a.m. to 6:15 p.m. with night service from 6:15 p.m. to 12:15 a.m. They also offers a Paratransit service within Rockford during the same hours as the fixed-route service, with the exception of Loves Park and Machesney Park, where the service runs until 10 p.m.

Boone County Public Transportation (BCPT), operated by the Boone County Council on Aging (BCCA), offers demand-response public transportation to all residents of Boone County and provides approximately 30,000 rides annually. The BCCA also provides origin-destination Paratransit services within three-quarters of a mile of RMTD fixed routes. In addition, BCCA provides connection service to RMTD bus service Monday through Friday to accommodate individuals who need to address business within the City of Rockford. Transfers between RMTD and BCPT are available at any RMTD bus stop in Boone County as long as the ride is scheduled with BCCA, however interjurisdictional transfer fees do apply.

Additionally, Stateline Mass Transit District (SMTD) contracts with RMTD to provide demand-response service to all patrons residing in Rockton, Roscoe, South Beloit, and unincorporated areas of Rockton Township. Stateline Mass Transit District riders have access to both the RMTD fixed-route and paratransit services through a transfer point located at the Machesney Park Target, located along IL-173. They also provide transfers to the Beloit Transit System across the Wisconsin state line, as long as the trip begins or ends within SMTD's service area.

Regional Employers

The Rockford Region continues to expand and diversify its economic development and employment opportunities. The major industry clusters in the Rockford Region include advanced manufacturing, transportation logistics and distribution, and healthcare. The major employers in the region are listed in Table 1-5 and are primarily made up of healthcare, manufacturing, distribution centers, governmental, and transportation sectors.

Table 1-5: Top Employers within the Rockford Region

Company	Industry	Number of Employees
Rockford Public Schools	Education	4,075
UW Health (formerly SwedishAmerican Health System)	Healthcare	3,780
Mercyhealth	Healthcare	3,000
OSF Healthcare	Healthcare	2,200
Collins Aerospace	Aerospace Manufacturing	2,000
Woodward	Aerospace Manufacturing	2,000
UPS	Logistics & Distribution	2,000
Amazon	Logistics & Distribution	1,535
Wal-Mart Stores	Retail	1,470
Stellantis (Formerly Fiat Chrysler Automobiles)	Manufacturing	1,459
Winnebago County	Government	1,429
Harlem Consolidated Schools	Education	1,147
Lowe's	Distribution Center, Retail	1,110
City of Rockford	Government	1,102
Belvidere Community Unit Schools	Education	950
Magna	Manufacturing	816
General Mills/Green Giant	Food Processing	650
Syncreon	Manufacturing	600
Taylor Company	Manufacturing	500
Bergstrom, Inc.	Manufacturing	450
TH Foods	Food Processing	400
Rockford Tool Craft	Manufacturing	358
Siffron	Manufacturing	340
Accuride Wheel End Solutions	Manufacturing	320
GE Aviation	Aerospace Manufacturing	300
Mondelez International	Food Processing	280
DFA (formerly Deans Foods)	Food Processing	180

Source: Rockford Area Economic Development Council, 2022

Bicycle and Pedestrian Planning History

Bicycle and pedestrian system planning was initiated with the Regional Bikeway and Pedestrian Plan adopted by the Rockford Area Transportation Study (RATS)[1] on June 27, 1984. The Rockford

1 Prior to the formation of Region 1 Planning Council in 2018, the MPO for the Rockford MPA was called the Rockford Metropolitan Agency for Planning (RMAP), and even further back the Rockford Area Transportation Study (RATS). In some instances, within this document, RMAP or RATS may used when referring to the MPO.

Park District, the Winnebago County Forest Preserve District, City of Rockford, City of Loves Park, Village of Machesney Park, Village of Cherry Valley and Winnebago County also adopted this plan.

On January 20, 2005, the MPO conducted a workshop to encourage public involvement in the bicycle system planning process. This group represented a cross section of bicycle stakeholders from throughout the Rockford MPA. The attendees were requested to review the existing plan, propose new bikeway facilities, or recommend changes to bikeway policy. After open discussion, the attendees ranked the planned bikeway system along with new proposed facilities and policies.

The Bicycle and Pedestrian Plan (2008) built off of the momentum of the 2005 Bicycle & Pedestrian Workshop and contained an area-wide analysis of bicycle and pedestrian facilities and appeared as an appendix in the previous Long-Range Transportation Plans, namely the 2035 and 2040 LRTPs.

In 2010, the Rockford MPO, and its partners, was one of forty-five communities nationwide to secure a grant from the HUD-DOT-EPA Partnership for Sustainable Communities. From 2010-2013, the MPO was able to utilize these funds to collect data, generate regional indicators, form committees that furthered regional collaboration among various stakeholders and develop the area's first Regional Plan for Sustainable Development (RPSD).

More recently, the Rockford Region was awarded a $16.4 million RAISE grant for the Downtown Complete Street Revitalization Project in 2021. The project will reduce the number of lanes along Chestnut/Walnut Street in order to reduce vehicle crashes and allow for implementation of a bi-directional bike path and other pedestrian improvements.

In early 2021, R1 completed its fourth iteration of the Boone and Winnebago Counties Greenways Map. The Greenways Plan and Map is used to promote a regional greenway network that protects natural and cultural resources; provides alternative forms of transportation and recreational benefits; enhances environmental and scenic qualities; and stimulates economic development. The current Greenways Plan and Map also provides existing shared use paths and potential shared use paths in Winnebago and Boone Counties.

Study Process

The update to the 2023 Bicycle and Pedestrian Plan for the Rockford Region began in June 2022, and was divided into five phases: Project Development; Problem Statements & Opportunities; Data Collection & Analysis, Range of Recommendations; Preferred Implementation Priorities; Project Wrap-Up. Public participation occurred throughout the entire planning process.

Phase 0. Project Development

The initial project development involved identifying the project justification, scope, final deliverable, budget, timeframe, public engagement and the project team.

Phase 1. Problem Statements & Opportunities

Based upon the identified project justification, scope, and final deliverable, the problem statement for the region that limits bicycle and pedestrian movement was identified. A series of opportunities were identified in order to address the problem statement and improve bicycle and pedestrian movement across the region.

Phase 2. Data Collection & Analysis

The initial data collection phase involved the gathering of data from Geographic Information Systems (GIS), Travel Demand Model (TDM), U.S. Census Bureau, and Illinois Department of Transportation (IDOT) portals. Geographic Information Systems (GIS) data was gathered from internal MPO databases, local municipalities and Winnebago County Geographic Information System (WinGIS). Various demographic data was collected from the United States Census Bureau. For consistency of the demographic data presented in this document, the 2020 American Community Survey (ACS) 5 – year Estimates were used. Additional historic data was collected from the U.S. Decennial Censuses. Other data sources have been maintained or updated as necessary.

Additionally, the development of the Plan is dependent on the evaluation of the existing conditions in terms of infrastructure, demand, and other factors. The analysis of existing conditions began with a review of the local context of the region, such as population characteristics, as well as a review of existing plans and policies within the region. An analysis of the physical infrastructure in the bicycle and pedestrian networks were examined to determine opportunities and constraints. These opportunities and constraints were developed based on the bicycle demand analysis and pedestrian suitability index.

Phase 3. Range of Recommendations

In order to ensure the goals and objectives for the region are met, recommendations made in the Plan include policies and programs that address engineering, education, encouragement, enforcement and evaluation, as well as the Safe Systems Approach. The recommendations were developed in an effort that would allow the MPO and local municipalities to achieve the goals of the plan.

Phase 4. Preferred Implementation Priorities

Based upon the range of recommendations, a series of implementation priorities was established. The information collected in the previous phases was compiled in order to create a clear guide for the MPO, local implementation agencies and organizations to achieve the vision and goals of the plan.

Phase 5. Project Wrap-Up

The final phase of the plan development involved drafting the final Bicycle and Pedestrian Plan for the Rockford Region. After the formal comment period, the document was presented to the MPO Technical and Policy Committees for recommendation and adoption, respectively.

Public Engagement

Round 1

The first round of engagement included the collection of public and partner surveys as a means of understanding the opinions of the community as well as gauge the priorities and needs from a municipal standpoint. Additional efforts will be made through comment boxes at local bicycle shops and hosting pop-up events at various city events and bicycle events to provide additional opportunities for feedback on community priorities that could be included in the plan.

Round 2

Once recommendations are developed, additional surveys were sent out to the public in order to received feedback. Once again, the MPO had a presence at city events and bicycle events to provide additional opportunities for individuals to voice their opinion on the proposed recommendations. Round 2 also included presentations and discussions with the working group, Livable Communities Forum, and the MPO Technical Committee.

Round 3

The final round of public engagement was through the release of the draft plan for a 30-day public comment period in order to ensure all information is accurately reflected for the region and allow the community to provide any feedback.

Organization of Report

Chapter 1: Introduction

The first chapter of the plan sets the stage of the document by explaining the purpose and intent of the Bicycle and Pedestrian Plan. Additionally, it describes the role of the Region 1 Planning Council (R1) Metropolitan Planning Organization (MPO) and the region it serves. This chapter also contains information detailing the key factors necessary in understanding the Rockford region including an overview of bicycle and pedestrian planning history in the region.

Chapter 2: Bicycle and Pedestrian Planning

The goal of this section is to provide readers with a better understanding of why planning for bicyclists and pedestrians is important. This section explains the benefits that active transportation can bring to a city, the challenges with bicycle and pedestrian infrastructure as well as outlining various planning approaches.

Chapter 3: Elements and Considerations

The third chapter of the Bicycle and Pedestrian Plan provides descriptions of the elements or infrastructure of both bicycle and pedestrian facilities, including the Americans with Disabilities Act (ADA) accessibility, complete streets, mobility hubs, and other elements such as the rise of electric bikes or scooters. Additionally, this section indicates considerations for implementing the infrastructure elements and explains concepts, such as the first and last mile, maintenance, demand, and equity considerations involved in planning for bicyclists and pedestrians.

Chapter 4: Existing Conditions

Chapter Four highlights the infrastructure that is currently found throughout the region as well as explaining the data and analysis that was completed in order to gain a comprehensive understanding of the region's existing conditions.

Chapter 5: Vision, Goals and Objectives

This section of the document presents the vision for the Bicycle and Pedestrian Plan and introduces the goals and objectives needed to reach it.

Chapter 6: Policies and Implementation

The plan concludes with the regional policies that will further planning initiatives and infrastructure for bicyclists and pedestrians throughout the region. The section outlines the role the MPO will play in its implementation and includes the future and current activities for monitoring the region's transportation system as well as potential activities that can be undertaken. Finally, this chapter provides the activities that will be taken to track the effectiveness of the plan and the identified goals.

Chapter 2

Bicycle & Pedestrian Planning

Why It Matters

Planning for pedestrian and bicycle infrastructure networks is an important part of comprehensive, continuing, and cooperative (3-C) transportation planning process undertaken in the Rockford Region. For multiple population segments, these networks may be their only means of transportation. However, roads have traditionally been designed to accommodate primarily motorized vehicles and substantial traffic volumes traveling at high rates of speed in order to efficiently move people. Therefore, it has become common to see multi-lane roadways cutting through cities across the United States. This design can be improved by focusing on alternative modes of transportation in order to minimize uncomfortable and challenging conditions for users who are not protect by a vehicle.

Over the past few years, the outbreak of COVID-19 has impacted daily life and reshaped regions across the country. Statewide shut downs and stay at home orders drastically decreased the number of motorized vehicles on the roadways, while the number of people turning to walking and bicycling has increased as a means of safely getting out of the house. In fact, the Illinois Stay at Home order stated that walking, hiking, running, or biking was an essential activity and was permitted in public parks and outdoor recreation areas as long as social distance could be maintained[i]. However, as COVID-19 restrictions have eased, the use of single occupancy vehicles (SOV) have recovered at a faster rate than other modes, such as public transportation. Many people perceive personal vehicles to be a safer option than that of public transportation because people assume it puts them at a higher risk of being infected[ii]. The alternative to widespread motorization is to promote walking and biking, which produces greater social and economic benefits as well as reducing pollution.

The disruption to the old "normal" way of life that COVID-19 created has changed people's overall perception of walking and bicycling, leading many cities to rethink the role of active transportation. Amid the challenges that the pandemic presented, it has given cities a chance to see what pedestrian and bicycle friendly communities look like and provide a chance to transform short term responses into long term change.

Benefits

Bicycle and pedestrian infrastructure has provided communities an alternative mode of transportation for years. Bicycling and walking provides multiple benefits including economic vitality, environmental improvements, and improved health and quality of life.

Economic

Bicycle and pedestrian infrastructure, such as sidewalks, bike lanes, and shared use trails, can not only improve transportation options and provide recreational opportunities, but they also provide economic benefits. Often times, business owners believe that removing parking in order to create improved bicycle and pedestrian facilities means fewer customers and a loss in sales. However, studies around the world have shown that improved active transportation facilities generally do not negatively impact local businesses but create more jobs and improve property values.

A study from the Institute of Transportation Studies at the University of California reviewed 23 studies from across the United States and Canada.[iii] The review determined that the creation of, or improvement to, active transportation facilities generally has a positive or neutral economic impact on retail and food service businesses regardless if vehicle parking or travel lanes are removed in order to make room for the active transportation facilities. In addition, cycling and walking promotes frequent interactions between patrons and businesses. While cyclists and pedestrians buy less per visit due to a limited amount of goods they can carry, they tend to make more stops to these businesses which adds up over time. It is easier for cyclists and pedestrians to make impulse stops to a restaurant or local store in passing over a car driving by at 35 miles per hour (MPH) and needing to find parking.

Furthermore, access to bicycle and pedestrian facilities has shown to improve overall property value of residential homes across the United States because walkable and bikeable places are often more desirable places to live. A report by Advocacy Advance in partnership with the League of American Bicyclists and the Alliance for Biking and Walking determined that various states such as Vermont, Indiana, and Delaware show houses in walkable neighborhoods have higher property values than similar houses in car-dependent areas.[iv] Ultimately, places with access to good active transportation facilities perform better economically than areas that are solely focused on vehicular travel.

Environmental

Active modes of transportation have a neutral effect on the environment around them. They do not emit greenhouse gases or other chemical compounds, nor do they require vast amounts of space and materials to be functional. In contrast to alternative transportation, motor vehicle travel has many significant negative impacts on both a community's environment and the planet as a whole.

The most significant difference between alternative transportation and the use of a vehicle is related to emissions from fuel. Walking, cycling, and other forms of alternative transportation, such as public transit and e-scooters, require no nonrenewable energy source. Driving a motor vehicle, such as a car or truck, requires the use of fossil fuels, specifically gasoline and diesel fuel.

Motor vehicles emit a significant portion of the world's total CO_2, which is the most common greenhouse gas released from vehicles[v]. CO_2 is one of the main causes of global warming because once emitted, CO_2 becomes trapped at low levels of the atmosphere, keeping the Earth from cooling at night[vi]. In 2020, transportation accounted for 27 percent of the United States' total greenhouse gas emissions, an estimated 1.6 billion tons of CO_2 equivalent, which is more than any other economic sector[vii]. Burning one gallon of gasoline emits 8,887 grams of CO_2 while burning one gallon of diesel emits 10,180 grams of CO_2[viii]. The average American passenger vehicle emits around 4.6 metric tons of CO_2 per year[ix]. Walking and cycling emit none.

Other greenhouse gases emitted by motor vehicles include Methane, Nitrous Oxide, and hydrofluorocarbons[x]. While these gases are emitted at a lower volume compared to CO_2 they have a higher global warming potential than CO_2[xi]. Riding a bicycle or walking to one's destination does not emit methane or any other greenhouses gases.

Many studies show that active transportation can cause significant reductions in greenhouse gas emissions because riding a bicycle or walking to one's destination does not emit greenhouse gases. One study from the Environmental and Energy Study Institute (EESI) states that riding a bicycle saves 150 grams of CO_2 per kilometer compared to driving a car[xii]. Another study shows that replacing a car with a bicycle each time you travel to work will save approximately 3,000 pounds of greenhouse gas emission per person per year[xiii]. Some studies suggest that the presence of bicycle and pedestrian infrastructure reduces emissions. For example, three years after the installation of new bicycle and pedestrian infrastructure in Plymouth and New Hastings, New Zealand, the two cities both saw carbon emissions decrease by over one percent[xiv]. Short trips with vehicles starting and stopping repeatedly produce the greatest amounts of emissions, and these trips have the ability to be replaced by active transportation modes since they are the easiest to accomplish through active transportation[xv]. There are other negative environmental effects presented by motor vehicles that active transportation can help to mitigate.

Noise pollution is another negative effect that results from motor vehicle transportation. Most noise in urban areas comes from vehicles, and it has many negative effects on the surrounding environment[xvi]. Noise from vehicles at early and late hours of the day can disturb people who are attempting to rest in their homes and can make being in outdoor spaces unpleasant. Animals are also affected by noise pollution. Animals use sound to navigate, find food, attract mates, and avoid predators; and noise pollution from vehicles can disrupt their natural processes[xvii]. Spaces for bicyclists and pedestrians will see lower noise levels, as these modes of transportation barely produce any sound.

Another major environmental benefit associated with bicycles and other forms of active transportation is the surface they travel on. Cycle tracks and sidewalks are just a few meters wide, requiring much less pavement than travel lanes for motor vehicles. One negative that results from having miles of pavement is the increased risk of flooding. For each percentage point increase in roads, parking lots, or other impervious surfaces within a community, the number of annual floods increases by 3.3%[xviii]. Investing in bicycle and pedestrian facilities will reduce the need to build more roads in the future.

By decreasing the need for more roads, deforestation can also be avoided by investing in active transportation facilities. Greenways are shared use paths through undeveloped areas that provide both recreational and transportation uses to the communities around them. Greenways help to protect green spaces biodiversity, while still integrating it into the transportation network.

Other negative environmental effects from vehicles occur before the vehicles even hit the road. The construction of both roads and motor vehicles uses large amounts of oil and fossil fuel-emitting machines and vehicles. Additionally, metal must be mined in order to build both electric vehicles and Internal Combustion Engine (ICE) vehicles, which often resulting in deforestation and the contamination of groundwater. Electric vehicles are often seen as the single solution to curbing the transportation sectors contribution to climate change since they do not rely on gasoline or oil, but electric vehicles require six times the mineral inputs as compared to an ICE vehicle since they need exotic and expensive materials[xix]. To create gasoline, the oil must be drilled, transported to the refinery, refined, and then transported to service stations. Every step of this process emits greenhouse gases. Bicycle and pedestrian infrastructure are not immune to some of these concerns, but the scale of their environmental externalities is much less than that of motor vehicles.

Ultimately, active transportation provides an environmental benefit to cities across the world in the reduction of greenhouse gases and use of nonrenewable energy sources. Active transportation is virtually carbon neutral and its expansion will

likely combat the negative impacts of climate change in addition to less noise pollution, less deforestation, and less impervious surfaces.

Health

Communities across the country are embracing initiatives focused on increasing bicycling and walking due to the impacts they can have on the health of the community. Participating in active transportation by changing mode of travel from driving to biking or walking brings numerous personal health benefits. Increased activity can help decrease mortality rates, lower risk of heart disease, stroke, diabetes, support healthy lungs, and improve overall asleep quality.[xx]

In addition to the health benefits that increased physical activity will have on people, active transportation users are exposed to less air pollution than that of drivers especially along busy routes. Studies have shown that people in cars spend longer in toxic and polluted air when compared to bicyclists along the same route[xxi]. During congestion, cyclists can skip past traffic in a bicycle lane and can experience increased air quality along separated shared use paths to provide more distance between the emissions. However, pedestrians who travel along the same congested route are exposed to increase levels of pollutants due to the increased time it takes to travel through these areas on foot . The same study found that if pedestrians took an alternative route to avoid busy streets their particle exposure fell by 75 percent. Ultimately, active transportation users experience cleaner air within urbanized areas over traditional vehicle users but the difference is dependent on the mode and route pedestrians or cyclists choose to utilize.

Quality of Life

A robust and connected bicycle and pedestrian network maximizes opportunity for equity, community spaces, and for people to engage with their surroundings. When bicycle and pedestrian routes take people to places they need and want to go, people have the choice of leaving their car behind. With the ability to choose transportation modes outside of a car comes numerous benefits not just for cyclists and pedestrians, but also for drivers. Each time someone makes a choice to walk or bike instead of drive, they are one less car on the road. This change makes driving less congested and therefore, more pleasant for the drivers on the road.[xxii] This symbiotic relationship between safer streets and pleasant driving is illustrated in the following Jane Jacobs quote: "Cities have the capability of providing something for everybody, only because, and only when, they are created for everybody."[xxiii] When streets are designed for everyone, they are better for everyone. The people choosing not to drive experience their own range of benefits as well, including chance encounters with friends, neighbors, or businesses that they would not experience in a faster vehicle.

These chance encounters are not only small, pleasant surprises that have no greater effect on people's lives, but opportunities for true connection that combat an increasing issue of loneliness in the United States. This feeling of loneliness was exacerbated by the COVID-19 pandemic, with stay-at-home orders, remote work, and the closing of many public spaces.[xxiv] That feeling of loneliness was even worse for children[xxv], the elderly[xxvi], and the disabled.[xxvii] In other words, those people who have the least access to public spaces due to their inability or decreased ability to operate a motor vehicle experienced a disproportionate and unequitable consequence of the COVID-19 pandemic due to the design of streets in the U.S. Cities have a responsibility to consider who they leave out and how that affects those people, when they design primarily, or exclusively, for cars.[xxviii] A city designed with everyone (including those that do not and/or cannot drive) in mind, leads to a better quality of life for everyone in it.

Beside loneliness, cycling as transport is generally good for one's satisfaction with life, while having a negative association with psychological distress.[xxix] These findings support the need to improve cycling as a transportation option, which increases opportunities for users to feel a higher satisfaction with life while decreasing the association with psychological distress that comes from unsafe street design. Another way in which improved cycling and walking facilities can have a positive effect is by reducing conflicts or "road rage" between drivers and non-drivers. A connected network of dedicated biking and walking infrastructure with mixed-use zoning will allow for people to make choices outside of their cars and get to where they need to go with minimal conflicts.

Places, such as the Netherlands, with cycling and pedestrian networks that give people true mobility options outside of cars, consistently rank higher in quality of life measures. UNICEF's 2013 study measuring overall well-being of children in the world's 29 richest countries, ranked the Netherlands as number one, while the United States ranked 26th. Upon elaborating on this ranking, the Dutch children's ability to roam freely without parent supervision (due to the nearly nonexistent risk of being killed by a driver) was a significant contributing factor.[xxx] It is imperative that the Rockford Region moves quickly towards street designs and land use that allows other road users the dignity and freedom of movement.

Challenges

While bicycle and pedestrian planning can provide a community with multiple benefits, it can also create some challenges. The way that North American cities have been developed has not been an ideal place for bicyclists and pedestrians. These active transportation users face limited space on either side of the roadway, increased distances between locations due to land use patterns, and varied and differing needs for urban and rural areas.

Limited Right of Way and Space Constraints

In the past, roadways were built in order to be safe, efficient, and comfortable for motor vehicles. To achieve this, highway designers worked from the centerline of the road outwards[xxxi]. Often times, this led to the right of way limits being reached before bicycle and pedestrian facilities could be incorporated into the design[xxxii]. Building roads from the outside in (i.e. starting with a buffered bicycle lane and then including vehicle lanes), ensures that bicyclists and pedestrians are accounted for. Unfortunately, this was not how most roads in North America were built.

Additionally, many people feel that bicycle and pedestrian facilities inconvenience drivers, and are thus opposed to retrofitting existing roads built exclusively for cars.

Many North Americans cities, including Rockford, have roads that are closely surrounded by private property and simply cannot be widened. Buildings line the streets, or are separated from the road by large parking lots. Single family homes are built as densely as the setback requirements allow. All of these land owners have the ability to make it difficult for shared paths, sidewalks, and bike lanes to obtain the right of way.

Some portions of Rockford Region simply lack the space to give bicyclists and pedestrians any kind of right of way. For example, East State Street, west of Fairview Avenue, is closely guarded by single family housing units on each side. The disconnected sidewalk provides a small buffer between the roadway due to the proximity of the private property on either side. The only way to add quality active transportation infrastructure to this stretch of road would be to remove a vehicle travel lane.

Figure 2-1: Picture of East State Street west of Fairview Avenue

Source: Region 1 Planning Council

Even in places with sprawl there can be constraints on the space needed to give alternative transportation modes the proper right of way. This almost paradoxical challenge can force bicycle and pedestrian infrastructure to lack connectivity or even fail to be implemented at all.

Land Use Patterns

Land use can be defined as the human use of land[xxxiii], as it represents the economic and cultural activities that occur on a specific piece of land.[xxxiv] Zoning codes are written to determine what kind of development can occur on a piece of land. In the United States, most land is assigned one use. This practice is called Euclidian zoning and is one of the main contributors to urban sprawl[xxxv]. By contrast, mixed use zoning has been linked to increased rates of travel by alternative transportation[xxxvi].

Urban sprawl is characterized by low-density, single-family homes, with intermittent corridors leading to residential areas and large amounts of commercial development. There tends to be large physical distances between the places people call home and the places they take trips to, creating car dependency.

Sprawl makes pedestrian transport uncomfortable, and at times impossible. If the only place a person can live is several miles away from grocery stores and employment centers, they are unlikely to choose to walk or roll to these places. Walkable cities have dense development, well-lit walkways, safe pedestrian crossings, and network connectivity. Communities with sprawl lack the incentives provided by pedestrian-oriented cities and replace them with dead ends in cul-de-sacs, gaps in the sidewalk network, and inadequate pedestrian crossings across major arterial roads.

Cities with sprawl will likely be home to wide highways and roads, that have high numbers of vehicles on the road and vehicle congestion, creating unsafe conditions for bicyclists who also have a right to use the roads[xxxvii]. Sprawl creates safety concerns which disincentivizes the use of bicycles, which causes most people to drive a car rather than risk being injured or killed by a driver[xxxviii].

The Rockford Region could be described as a part of the "rust belt", and was once a bustling hub of industry. Many of the remaining factories in operation are located near downtown Rockford, resulting in the area seeing high truck volumes. To accommodate the trucks, major arterial roads are required to have a width of 120 feet, which exceeds the necessary amount and encourages drivers to speed, increasing the risk to bicyclists and pedestrians.[xxxix]

While the region may not be perfectly suited to bicyclists and pedestrians at this time, there are steps that can be taken in the future to change this fact. Compact development is one way to do this. This means using the least amount of land for new development that is reasonably possible[xl]. Building communities with high density helps to make them walkable as well as better for other non-car transportation options. Infill development is another kind development that can help combat car dependency and increase people's desire to use active transportation modes. Infill development encourages the development of underused or vacant land in existing urban areas to increase density[xli]. Another kind of land use that benefits bicyclists and pedestrians is Transit-Oriented-Development (TOD). TOD can be described as the creation of compact, walkable, mixed-use communities that are built around top-tier train[xlii], bus or streetcar systems. The kind of development reduces car dependency by placing pedestrians' movement above all. The potential Metra stations in downtown Rockford and Belvidere and the continued improvement with RMTD transfer centers and bus routes could provide the region with an opportunity to pursue more TOD.

Zoning codes can be a useful measure of a community's ability to support active transport, but they also play a large role in shaping what that active transportation network looks like. Due to Euclidean zoning practices and its industrial past, our region is home to large amounts of sprawl. Sprawl creates car dependency and disincentivizes active transportation. By taking advantage of existing codes and pursuing code reform land-use patterns that favor active transportation modes, such as TOD, a multi-modal transportation network can be created within out region.

Urban vs. Rural

The advantages that bicycling and walking bring to a city are often associated with urban centers and not rural areas. However, rates of bicycling and walking in most rural communities are not dramatically different from those of larger urban cities. Rural communities however, lack the infrastructure to support active transportation. Rural communities are located on state or county roadways which were built to favor high-speed motorized traffic and wide to accommodate farm equipment. This design results in walking and bicycling to be dangerous and uncomfortable in these areas.

Rural areas experience longer trip distances since communities are more spread out. Because of this, rural areas experience higher crash rates and greater health and income disparities. Rural communities are more spread out than more urban/ suburban areas, which forces residents to be reliant on a personal vehicle. With wider roads and a greater reliance on vehicles, rural areas experience higher crash rates than urban areas[xliii]. Furthermore, many rural residents may not be able to use vehicles as a reasonable mode of travel because personal vehicles can be expensive to purchase and maintain and rural households earn 32 percent less yearly income than households in urban areas[xliv].

Ultimately, rural communities need and should have safe access to active transportation infrastructure just as much as urban areas do. In coming years, active transportation can play a big role in making small town across the country more attractive for young families and business investment.

Bicycle & Pedestrian Planning

The 5 E's of Bicycle & Pedestrian Planning

This regional bicycle and pedestrian plan is intended to serve as a comprehensive planning tool for the Rockford Metropolitan Planning Organization (MPO) and local jurisdictions within the MPO's planning boundaries to develop a well-connected network of active transportation options and an increased standard for livable communities. The following section discusses the importance of the previous planning approach "Five E's" which are Engineering, Education, Encouragement, Enforcement and Evaluation. Each is essential in making great places for bicycling and walking.

Engineering

Engineering focuses on continuing the development of a well-connected active transportation network through physical infrastructure and amenities, as well as the policies that will serve as the impetus for increased infrastructure. Physical infrastructure is not limited to the development of shared use paths, sidewalks, and bicycle lanes. Physical infrastructure also includes the strategic placement of signage, wayfinding, and bike racks to enhance the connectivity and further encourage the use of bicycle ans pedestrian facilities to commercial centers and key locations.

Education

Building bike lanes, shared use paths, and other facilities is important, but a major component of an efficient network is the general public knowing how to drive alongside bicyclists and how to safely use facilities. Education is an important component of improving the overall safety of all roadway users by raising awareness of bicyclists and pedestrians on roads. Education programs are relatively low cost when compared to major trail projects or bike implementation plans. However, it can be labor intensive and must occur on a regular basis to have lasting effects.

Successful education programs utilize strong and lasting partnerships. Within the Rockford Region, many groups and organizations have the ability to be great partners for bicycling and pedestrian education and these groups already promote health, education and safety. Partnerships can range anywhere from sponsoring educational courses to assisting with running programs. Partners such as bilingual advocacy groups can also act as intermediaries who regularly interact with targeted groups which may not otherwise have their voices heard. Potential partners include government organizations, county health departments, schools, police and fire departments, local businesses and bicycle and pedestrian advocacy groups.

Education programs should be available in an array of forums and curriculums tailored to specific audiences. Education programs can include general public and target campaigns, general skills practices and instruction, and specific training programs for targeted user groups such as children adolescents, commuters, seniors, and transportation officials and decision makers.

Encouragement

Encouragement plays a large role in the creation of a bicycle and pedestrian friendly community when partnered with education and enforcement programs. Encouragement programs increase bicycle and pedestrian trips by providing incentives, recognition, or services that make bicycling a more convenient transportation mode. This type of programming not only provides incentives for people to start walking or biking, it also increases visibility by creating comfort, confidence, and safety on the streets. Motivating people to choose biking and walking as a valid means of transportation through fun and interesting activities will help build support for more walkable and bikeable places in the Rockford Region.

Similar to education programs, encouragement programs work best when strong partnerships are utilized and can be used to help sponsor or promote an event. Local advocacy groups are a starting point for communities that realize there are things needed to be done to encourage bicycling and walking. The most successful bicycle friendly communities have strong and effective advocacy groups which host events, rides and activities.

There are a wide variety of programs that can be used to encourage people to walk or bike. Examples of programs found nationwide can be found in Technical Supplement.

Enforcement

Enforcement efforts identify the needed cooperation between the law enforcement community and bicycle community in order to ensure basic laws and regulations necessary to govern bicycling and the rules of the road are followed. Enforcement fosters mutual respect between all roadways users and improves safety. Enforcement strategies are most effective when targeting typical types of unsafe behaviors. Typical types of unsafe behaviors are summarized in Table 2-1. Unlike education and encouragement programs, enforcement programs are not likely to have a long-term effect when used alone. It is more effective in changing behaviors when enforcement strategies are combined with educational programs.

Most enforcement strategies will need to be undertaken by different law enforcement agencies and public officials throughout the region. The Winnebago County Sheriff's Office, Boone County Sheriff's Department, and Ogle County's Sheriff's Department are responsible for enforcement on unincorporated areas of their counties. While local police departments in the incorporated cities and villages are responsible for enforcement of roadways within their jurisdictions. Many of the bike paths within the urban core of the region are under the jurisdiction of the Rockford Park District Police.

While many enforcement strategies and programs are led by law enforcement, community members can improve safety behaviors in many ways. Incorporating citizens into enforcement strategies can help reduce the strain of limited law enforcement resources and decrease dangerous interactions for people of color with law enforcement.

Evaluation

The final category for making great places for bicyclists and pedestrians is through evaluation and planning. Evaluation refers to data collection and analysis. Evaluations and planning can aide in determining the effectiveness of bicycle and pedestrian related programs and help guide future actions.

Evaluation strategies are typically tied to specific plans or programs to measure performance and effectiveness. The best evaluation programs involve ongoing collection and analysis of data and research to document changes and results before and after implementation of a program. Successful evaluation programs also leverage existing data sources, such as data on public health and safety from the Federal and State governments.

Evaluation activities are not limited to strictly data collection on bicycle counts or health statistics. Evaluation strategies include evaluating potential funding sources and implementation opportunities through planning efforts. Reporting on progress and convening community stakeholder groups are also methods for monitoring efforts and for holding agencies accountable to the public.

Table 2-1: Typical Types of Unsafe Behaviors that can be Addressed by Enforcement

Unsafe Driver Behaviors
Speeding on residential streets and through school zones. (Speed is directly related to pedestrian crash frequency and severity.)
Failing to yield to pedestrians, especially in crosswalks. (The law requires drivers to stop for pedestrians in crosswalks. It is a law that is often ignored.)
Running red lights or stop signs.
Passing stopped vehicles (such as school buses).
Parking or stopping in crosswalks.
Talking, texting, or web browsing while driving.

Unsafe Bicyclist Behaviors	
Riding into traffic without looking left, right, and left again.	Failing to yield for pedestrians.
Riding against traffic instead of with the traffic flow.	Failing to cede the right-of-way to pedestrians on a sidewalk or in a crosswalk.
Turning left without looking and signaling.	Riding out from a driveway of between parked vehicles.
Failing to obey traffic signs and signals.	Failing to wear a bike helmet.

Unsafe Pedestrian Behaviors	
Failing to look left, right and left again before crossing the street.	Wearing dark clothes when there is poor lighting.
Crossing a street at an undesirable location.	Talking, texting or web browsing while walking.
Darting out between parked motor vehicles.	

Source: Hawaii Department of Transportation- Hawaii Pedestrian Toolbox

Safe Systems Approach

The Safe System Approach has recently been embraced by the transportation community as a way to address and mitigate the risks that the transportation system faces. The goal of the safe system approach is the prevent crashes from happening as well as minimize the harm caused to those involved when crashes do occur.[xlv]

The safe systems approach is a shift from the conventional approach because it focuses on both the mistakes made by humans and their vulnerability in order to design a system that protects everyone. Ongoing safety programs that are being pursued nationwide are working toward a future with zero roadway fatalities or serious injuries. In order to support this approach safety programs are focused on infrastructure, human behavior, responsible oversight of the vehicle and transportation injury as well as emergency response.

The main principles of the safe system approach include:

- ***Death and serious injuries are unacceptable:*** While no crashes are desirable the Safe System approach prioritizes eliminating crashes that result in deaths or serious injuries.
- ***Humans make mistakes:*** People inevitably make mistakes that lead to crashes, but the transportation system should be designed and operated in order to accommodate human mistakes in order to avoid deaths and serious injuries.
- ***Humans are vulnerable:*** Humans have limitations in what they can tolerate in a crash before death or serious injuries occur; therefore, it is crucial to design and operate a transportation system that is human-centric and accommodated those vulnerabilities.
- ***Responsibility is shared:*** All stakeholder (system users, managers and vehicle manufacturers etc.) have a responsibility to ensure that crashes do not lead to fatal or serious injuries.
- ***Safety is proactive:*** Proactive tools should be utilized to identify and mitigate risks in the transportation system, rather than reacting once crashes occur.
- ***Redundancy is crucial:*** All parts of the transportation system need to be strengthened so that if one part fails, the rest of the parts can still protect people.

Chapter 3

Elements and Considerations

Elements

This section provides information regarding the elements involved with bicycle and pedestrian planning. Expanding and improving bicycles and pedestrian infrastructure means ensuring that the transportation network not only allows those modes to be viable modes of travel but also safe and comfortable to use for everyone. The elements discussed in this section include facility types of both bicycle and pedestrian infrastructure, American with Disabilities Act (ADA), Complete Streets, and mobility hubs.

Facility Types

This section provides information regarding facility types for both bicycle and pedestrian infrastructure. Bicycle and pedestrian facilities are defined as "transportation facilities that are primarily intended to be utilized by pedestrians and bicycles, including sidewalks, multi-use paths, and trails, as well as the necessary infrastructure to support the construction of such facilities, such as drainage areas, wetland and floodplain mitigation areas, boardwalks, landscaping, bike racks, shelters and kiosks, benches, and signage."[xlvi] The definitions and facility descriptions in this section are intended to provide useful information about how the facilities discussed in this plan look and the difference between various types.

Bicycle Facilities

There are several forms of bicycle facilities which can be located within or outside of a roadway and provide space for cyclists to move throughout the area. These facilities vary in comfortably and perception of safety. Many considerations should be made when selecting a bicycle facility, also known as bikeways. These considerations include urban vs. rural setting, surrounding land use, motor vehicle speed and volumes, existing infrastructure, potential modal conflicts, such as intersections, driveways, and pedestrian crossings.

The following information will provide an overview of the different bicycle facilities for both on-street and off-street infrastructure including paved shoulders, shared lane markings, conventional bike lanes, buffered bike lane, protected bike lane, and intersection markings. The facilities will be described from least to most protected facilities.

Paved shoulders are areas along the edge of a roadway which typically provide temporary space for disabled motor vehicles and reduce roadway departures, particularly in rural settings. Wider paved shoulders can also be enhanced to serve bicyclists. Paved shoulders allow comfortable and safe space for bicyclists, especially in rural areas or roadways with moderate to high volumes and speeds of traffic. However, in order to be fully functional for bicyclists, it must be a minimum width of four feet excluding buffers or rumble strips.[xlvii] This facility has moderate stress which is more suitable for confident bicyclists.

Figure 3-1: Paved Shoulders

Source: www.pedbikeimages.org- Bob Boyce

Shared lane markings also known as "sharrows", are pavement markings on a roadway used to indicate that both bicycles and motor vehicles frequently utilize the corridor. Similar to paved shoulders, shared lane markings are not a facility type and are not alternatives for bike lanes, cycle tracks, or other separation treatments where those facilities would otherwise be warranted and have the available space.[xlviii] Shared lane markings provide

benefits by alerting motor vehicles to the potential presence of bicyclists and requires no additional space to implement. Since these facilities share the lane with vehicles, they are not comfortable facilities for all bicyclists and are high stress facility.

Figure 3-2: Shared Lanes (Sharrows)

Source: Region 1 Planning Council

A conventional bicycle lane is a designated portion of the roadway for bicyclists, delineated through striping, signage, and/or pavement markings. Bicycle lanes are typically located along the right side of the roadway between the travel lane and either the curb, edge of the roadway, or parking lane. This facility provides bicyclists a level of comfort and confidence along busy streets by creating separation between bicyclists and motorists while providing a visual reminder that bicyclists have a right to the street.[xlix] This facility has little stress and is suitable for a majority of bicyclists but requires awareness.

Figure 3-3: Conventional Bicycle Lane

Source: Region 1 Planning Council

Buffered bicycle lanes are conventional bicycle lanes paired with buffer space to further separate the bicycle lane from motor vehicles and/or the parking lane. Buffered bicycle lanes appeal to a wider range of bicyclists, removes bicyclists out of the door zone of parked cars, and provides a greater safety zone for bicycling between a motor vehicle travel or parking lane.[l] This facility has little stress and is suitable for a majority of bicyclists but requires more supervision for children.

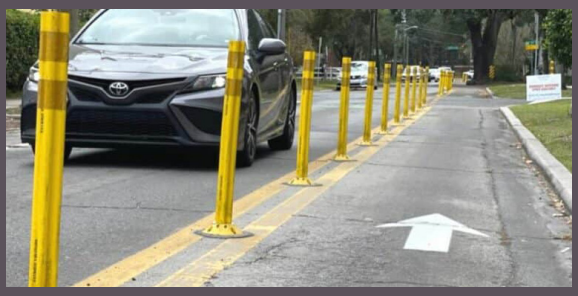
Figure 3-4: Buffered Lane

Source: Region 1 Planning Council

Separated bicycle lanes, also referred to as cycle tracks or protected bike lanes, are bicycle lanes physically separated from motor vehicles by a vertical delineation, such as a parking lane, bollards, landscaped buffers, or curbs. Separated bike lanes can be one way or bi-directional. To create further separation, these lanes can also be raised above street-level.[li] This facility is low stress and suitable for a majority of bicyclists.

Figure 3-5: Separated Lane

Source: Region 1 Planning Council



Bollards

Short, post used to divert traffic from an area or road.

Source: Oxford Dictionary
Photo: City of Gaineville, Florida

Additional Bicycle Elements

Intersections consist of multiple conflict points for cyclists and motorists which can cause cyclists to feel uneasy and on high alert. Several types of crossing markings can indicate the intended path and guide bicyclists through intersections as well as across driveways and ramps. These additional markings help to raise awareness to both bicyclists and motorists of potential conflict points, makes bicycle travel predictable through an intersection, and increases the visibility for bicyclists.[lii] This facility can cause moderate stress for bicyclists since it is not physically separating the bicyclists from motorists and can cause confusion for first time users.

Pedestrian Facilities

Pedestrian facilities refer to infrastructure exclusively used by pedestrians. These facilities are typically adjacent to the roadway or at intersections and provide continuous and reasonable direct routes for pedestrians to safely walk. This section briefly explains facilities that are located along a roadway including sidewalks, curb extensions, curb ramps, pedestrian refuge island, shared use paths, and underpasses. This section also describes other infrastructure treatments such as crosswalks and pedestrian signals.

Infrastructure Treatments

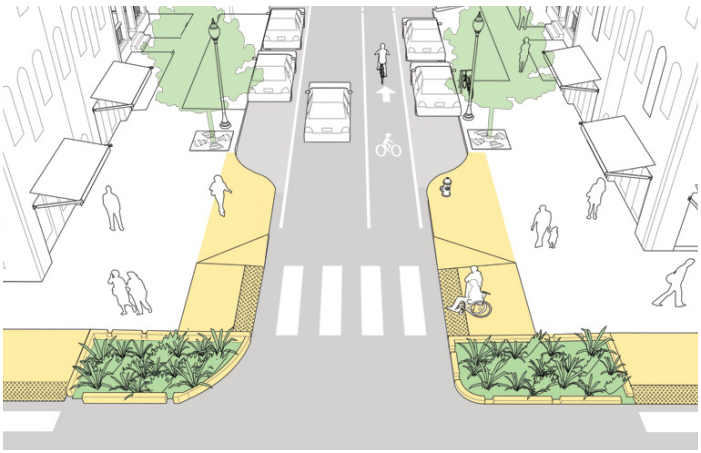
Sidewalks are paved paths along the side of the road providing pedestrians safe movement within a right-of-way. Four pedestrian zones, including frontage zone, the pedestrian through zone, street furniture/curb zone, and enhancement/buffer zone, define a sidewalk, as shown in Figure 3-6. The frontage zone is the area of the sidewalk directly adjacent to a property or serves as an extension of commercial buildings. For example, the frontage zone can be used for sidewalk cafes, entryways to the businesses, and advertisements. The pedestrian through zone is the primary pathway that runs parallel to the streets providing pedestrians adequate space to move. The street furniture/curb zone is between the curb and the pedestrian through zone. This zone is where amenities, such as street furniture, lighting, utility poles, trees and bicycle parking racks, can be provided. Finally, the enhancement/buffer zone is the area immediately next to the sidewalk that can incorporate parking, bike share stations, or bike lanes.[liii]

Figure 3-6: Pedestrian Zones

Source: National Association of City Transportation Officials (NACTO)

Curb extensions, also known as bulb-outs or neckdowns, extend sidewalks and associated curbs parallel to the parking lane, reducing the pedestrian crossing distance. Curb extensions can also improve visibility for motor vehicles and pedestrians. Curb extensions placed at intersections aid in preventing motor vehicles parking too close to a crosswalk of blocking a curb ramp and improving accessibility for users.[liv] As shown in Figure 3-7, curb extensions can be designed to incorporate other elements, such as bike racks, bike share stations or parklets, to provide additional pedestrian space and reducing sidewalk clutter by creating space for street furniture.

Figure 3-7: Example of Curb Extensions



Source: National Association of City Transportation Officials (NACTO)

Curb ramps are slopes cut through or build up to a curb, providing safe access from the sidewalk to the street or vice versa. Curb ramps especially assist individuals with mobility impairments[lv] and must meet Americans with Disabilities Act (ADA) standards. More information on ADA standards are included later in this chapter.

Pedestrian refuge islands are typically raised medians with the intention of aiding pedestrians crossing side or bust streets. Motor vehicles cannot drive over them, which allows pedestrians to cross half of the street at a time.[lvi]

Figure 3-8: Example of a Pedestrian Refuge Island

Source: Region 1 Planning Council

Shared use paths are a multi-use trail or other path physically separated from motorized vehicular traffic by an open space or barrier. These facilities may be within a roadway right-of-way or within an independent right-of-way. Shared use paths may be used by pedestrians, bicyclists, skaters, and other non-motorized users. Shared use paths should be thought of as off-road transportation routes that extend or complement the existing roadway network and should not be used to substitute on-street bicycle facilities and sidewalks.[lvii]

Pedestrian underpasses allow grade separation between pedestrian and motorized traffic. Underpasses often provide connections to off-road trails and paths that cross major barriers and are most commonly used along a shared use path.[lviii]

Figure 3-9: Example of a Pedestrian Underpass

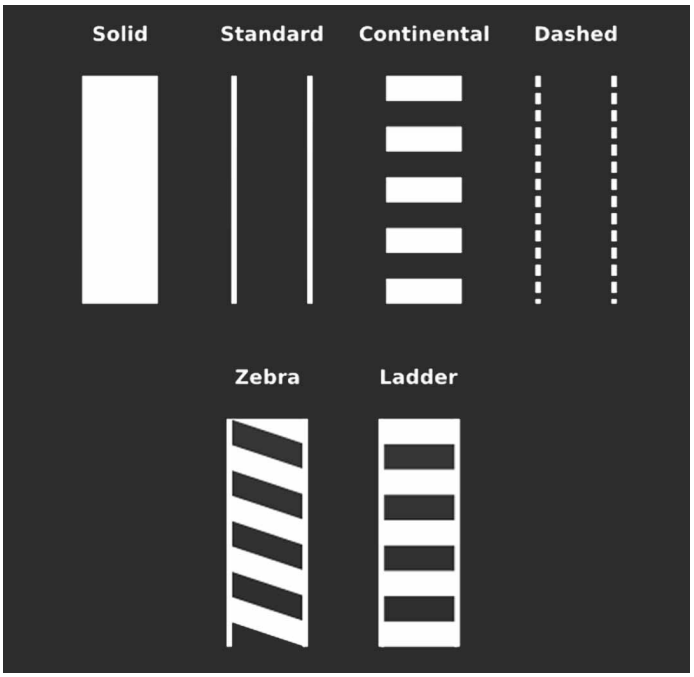
Source: Region 1 Planning Council

Additional Pedestrian Elements

In addition to infrastructure treatments, several other pedestrian elements are located at intersections in order to help guide pedestrians safely across roadways as well as improve their visibility to motorists.

At all intersections, it is implied and legal for a pedestrian to cross the street, whether or not the crosswalk is marked, unless it is specifically prohibited. Marked crosswalks indicate optimal or preferred locations for pedestrians to cross. Marked crosswalks serve two functions: provide guidance to pedestrians crossing roadways at intersections and serve to alert motorists of a pedestrian crossing point, such as a mid-block or school crossing. A variety of pavement marking patterns are used. The type of marking chosen is based on the local transportation engineer and cost considerations. Typical patterns, as shown in Figure 3-10, include transverse lines, ladder, continental, and diagonal (zebra) markings. Transverse lines are considered the standard crosswalk marking pattern, while ladder and continental markings are considered high visibility crosswalks and are reserved for uncontrolled intersections or midblock crossings.[lix]

Figure 3-10: Crosswalk Marking Patterns



Source: SF Better Streets

Pedestrian signals establish a period of time safe for pedestrians to cross the road. Signals provide guidance to pedestrians regarding the permitted signal interval or prohibit crossing when conflicting traffic may impact their safety. Pedestrian signals utilize illuminated symbols to identify the “Walk” and “Don’t Walk” phases. A steady symbol of a walking person indicates the “Walk” phase for pedestrians and an ‘Upraised Hand” indicates the “Don’t Walk”. There are two “Don’t Walk” phases associated with the “Upraised Hand” symbol. The flashing “Upraised Hand” symbol is used to indicate when pedestrians should not start to cross the road. The steady “Upraised Hand” symbol means that pedestrians are not permitted to enter the roadway. Countdown pedestrian indicators are required for all newly installed traffic signals. The countdown indicator must be designed to begin counting down at the beginning of the flashing “Don’t Walk” interval and can be on a fixed-time or push-button operation. [lx]

ADA Accessibility

Transportation networks should be accessible and useable by all people regardless of age or ability. Agencies cannot discriminate against persons with a disability when building or reconstructing public facilities, including sidewalks, buildings, and street crossings. The Americans with Disabilities Act (ADA) provides standards for accessible design along with the Title II and Title III regulations which define what is required for a building or facility to be physically accessible to people with disabilities. Additionally, the United States Access Board provides guidelines in order to ensure that streets and sidewalks along the public right-of-way are accessible with consideration given to slope of the sidewalk, curb ramps, crosswalks, transit stops, and the inclusion of accessible pedestrian signals (APS). Accessible pedestrian signals are push buttons at an intersection that communicates when a pedestrian can cross the street in a non-visual manor, such as through audible tones, speech messages, and vibrating surfaces.[lxi]

Complete Streets

Complete streets is a transportation policy and design approach that requires streets to be planned, designed, and maintained to enable safe, convenient and comfortable travel. At the core of the complete streets philosophy is the idea that pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a street.

There is no single formula or approach to creating complete streets. Each complete street is unique and responds to the context of the surrounding area. Elements that may be found on a complete street include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent crossing opportunities, median islands, accessible pedestrian signals, curb extensions, and more. A complete street in a rural area looks different from a complete street in a highly urban area, but both are designed to balance safety and convenience for everyone using the road.

The most common types of Complete Streets policies are:

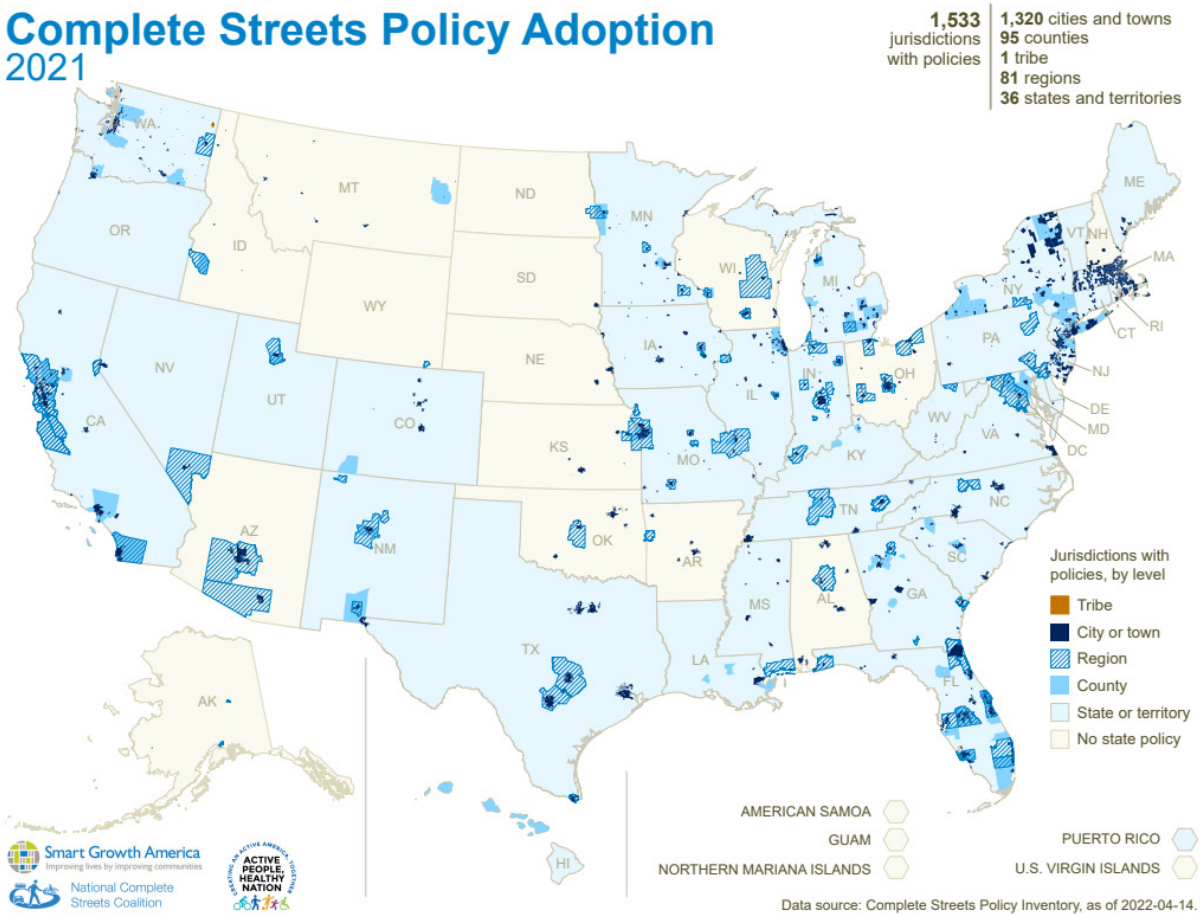
- **Resolution of Support:** Resolutions are non-binding official statements of support for complete streets. Resolutions do not require action and a critical first step in furthering Complete Streets initiatives. This type of policy can be enacted at the municipal, county, regional, or state level.
- **Ordinance:** Ordinances are legally binding and enforceable by law. Ordinances may be passed by all implementing agencies, including municipalities and counties.
- **Design Guidelines:** Design guidelines incorporate complete streets principles is the most effective means for ensuring complete streets becomes widely implemented. Updates of this nature may be a lengthy process.

In 2002, the National Complete Streets Coalition was formed in order to promote low cost retrofit options for existing roadways and to ensure that all new roadways are designed to provide safe access for all users. According to Smart Growth America, over 1,600 Complete Streets Policies have been passed in the United States, including adoption by 35 state governments including the Commonwealth of Puerto Rico, and the District of Columbia.[lxii]

Figure 3-11: Example of a Complete Street

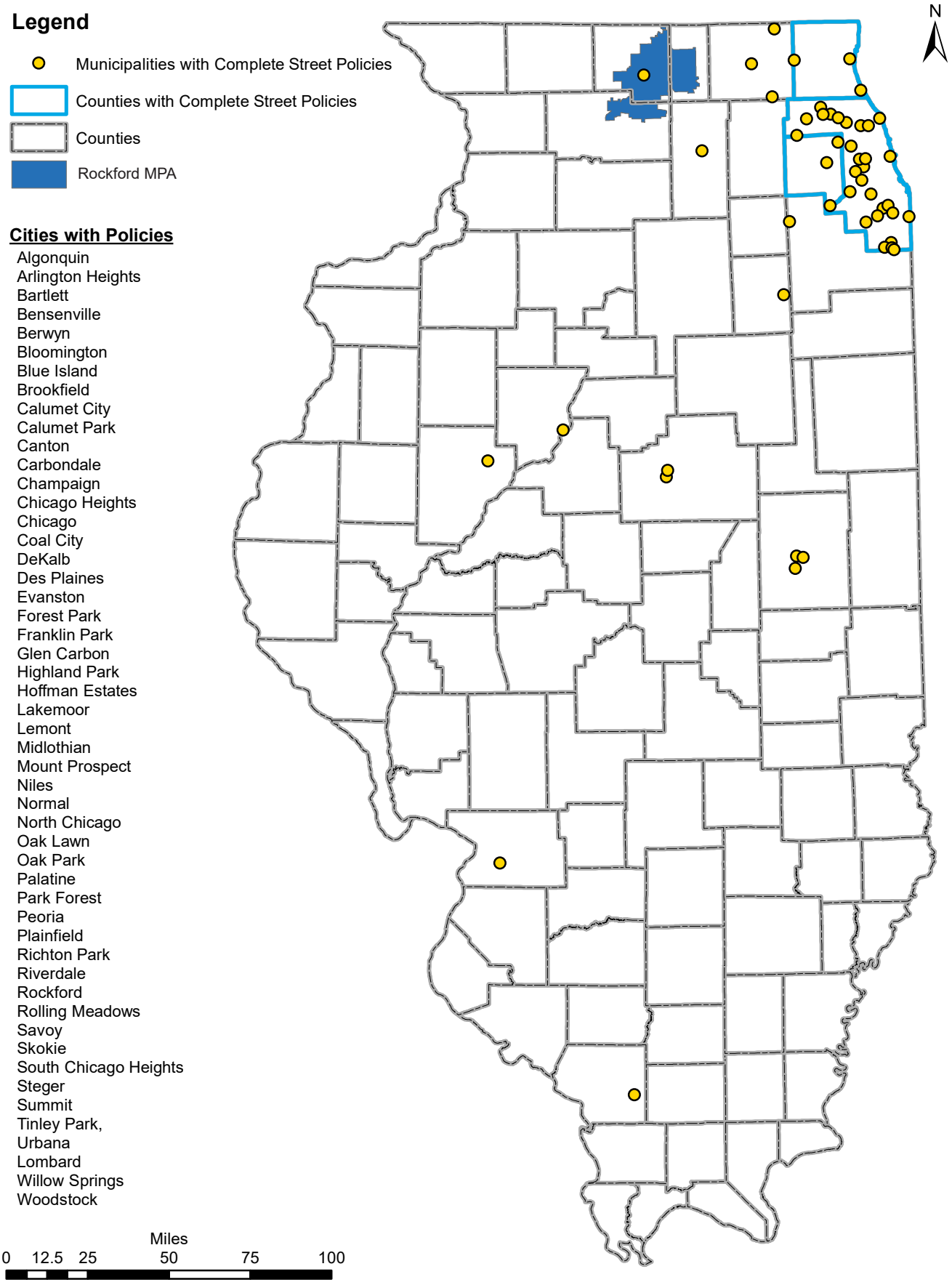
Source: Complete Streets NC

Map 3-1: Adopted Complete Streets Policies Nation wide



Source: Smart Growth America

Map 3-2: Adopted Complete Streets Policies in Illinois



Cities with Policies

Algonquin
Arlington Heights
Bartlett
Bensenville
Berwyn
Bloomington
Blue Island
Brookfield
Calumet City
Calumet Park
Canton
Carbondale
Champaign
Chicago Heights
Chicago
Coal City
DeKalb
Des Plaines
Evanston
Forest Park
Franklin Park
Glen Carbon
Highland Park
Hoffman Estates
Lakemoor
Lemont
Midlothian
Mount Prospect
Niles
Normal
North Chicago
Oak Lawn
Oak Park
Palatine
Park Forest
Peoria
Plainfield
Richton Park
Riverdale
Rockford
Rolling Meadows
Savoy
Skokie
South Chicago Heights
Steger
Summit
Tinley Park,
Urbana
Lombard
Willow Springs
Woodstock

Source: Region 1 Planning Council

In 2007, the Illinois General Assembly passed the "Illinois Complete Streets Law" (Illinois Public Act 095-0665). The law reads that "Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities, including the incorporation of such ways into State plans and programs." This law provides the framework for Illinois municipalities, counties and metropolitan areas to establish new policies and standards to incorporate transportation facilities for all types of users into their planning, programming and implementation documents. This law ensures that pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street.

Bicycle and pedestrian facilities as well as other considerations, such as public transportation facilities have been integrated into Illinois Department of Transportation (IDOT) projects including N. Main (IL 2), S. Main (IL 2), E. State and W. State since the adoption of the Illinois "Complete Streets Law". As of April 2022, approximately 57 Illinois municipalities and other entities have adopted Complete Streets policies.[lxiii]

In 2010, IDOT's Bureau of Design and Environment revised its design manual to incorporate complete streets standards and treatments. Local municipalities may work in consultation with IDOT to develop local design guidelines that integrate Complete Streets treatments into local project development.

The State of Illinois and the City of Rockford have had existing Complete Street Policies for several years. As required under the Infrastructure Investment and Jobs Act (IIJA), MPOs are now required to have Regional Complete Streets Policies, as well as establish a Complete Streets Design Standard.[lxiv]

Mobility Hubs

Cities now have more ways to get around than ever before – with the additions of bike and scooter sharing, carshare, and ride-hailing options. The benefits from expanding choices can truly be recognized when integrated into a coherent network of efficient transportation options that allows people to travel by using the mode of transportation is most convenient for them on a particular trip.

Mobility hubs offer access to different modes of travel in order to avoid the use of a personal vehicle or in conjunction with their personal vehicle. Mobility hubs provide places where people can connect to various modes of transportation and offer a safe, comfortable, convenient and accessible space while transferring from one mode to another. These hubs can be located where transit services already exist or in locations where transportation is needed the most.

Mobility hubs range in size and amenities they provide, such as sheltered waiting areas with seating, lighting for both functional and decorative purposes, signage with real-time arrival and departure schedules, fare payment kiosks, and visual wayfinding that directs users to different transportation options.[lxv]

Micro-mobility

Any small, low-speed, human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.

Source: FHWA

E-Bikes and Scooters

E-bikes and e-scooters have been growing in popularity across the nation over the past few years through private ownership as well as shared mobility services provided by private companies such as Bird and Divvy. E-bikes and e-scooters are powered by electricity, which either fully propels or assists riders with pedaling.[lxvi] Both are considered motorized micro-mobility devices.[lxvii] Benefits of e-bikes and e-scooters include, more affordable compared than other means of personal transportation, carbon neutral, and require less space for parking.[lxviii]

Shared micro-mobility systems have been deployed in various cities to provide users on-demand access to devices and are intended for short trips such as "first and last mile" connections in order to complete trips made by other modes. According to the National Association of City Transportation Officials (NACTO), users took 136 million trips in 2019 on shared micro-mobility systems, a 60-percent increase from 2018.[lxix] Within the City of Rockford, a total of 4,764 people utilized Bird scooters over 13,360 times between June 1, 2021 and August 31, 2021.[lxx]

However, micro-mobility faces challenges with infrastructure, design, and technology that need to be addressed before widespread adoption is to happen. Shared e-scooters and e-bikes are often considered toys or nuisances by some members of the community for several reasons including where the devices are left once a ride is complete and the interactions between pedestrian and e-scooter users on sidewalks. Appropriate or dedicated bike lanes can address some of these perceptions as can the education of users on how to safely and respectfully share space.

Considerations

Streets were historically designed without consideration of use by bicyclists and pedestrians. Bridges, underpasses, and roadways do not always include sidewalks and other facilities that make walking safe or accessible. This section provides information regarding the considerations with bicycle and pedestrian planning, including first- and last-mile travel, facility maintenance, user demand, and equity.

First and Last Mile

First-mile and last-mile travel is the beginning and final stretches of a person's journey, usually made by as walking, biking, or wheelchair.[lxxi] The standard distance that a majority of pedestrians are willing to walk to a transit stop or any other destination is ¼ mile. This alludes to the problem that many public transit users face, where the distance between a commuter's transit stop and home is often farther than they are willing to walk.

When considering the first- and last-miles improvements, better facilities should be prioritized when creating shorter walking distances are not feasible. When developing solutions to first- and last-mile problems, creating spaces that are more enjoyable for pedestrians should also be considered. This could be through more appealing storefronts; additional shade, greenery, and street furniture; increased safety (both perceived and actual); wider sidewalk; and better drainage.

Additionally, as a way to provide alternatives to walking, more companies such as Bird, Divvy, Lyft and Uber have been providing solutions to the problem such as rideshare programs, bike and scooter rentals, and commuter shuttles[lxxii]. These options can help micro-mobility and aid tremendously with short distance travel by providing convince of multiple options without the need to have a personal vehicle.

Maintenance

Regular maintenance is one of the most important aspects to the successful bicycle and pedestrian infrastructure. Sidewalks or bike lanes that are not adequately maintained in a good condition can be unsuitable and dangerous to pedestrians and bicyclists alike. For example, potholes within a bike lane can cause bicyclists to suddenly veer out of the bike lane into ongoing traffic to avoid it. Similarly, debris and uneven pavement can make it difficult for person in a wheelchair to easily transverse a sidewalk. Regularly scheduled maintenance should be established in order to ensure safe use of the infrastructure. Some communities have found success in developing "spot improvement" or "Customer Service Requests" programs, which enable users to keep maintenance agencies informed about condition issues through a request form.

Maintenance barriers also include ensuring the use of bicycle facilities and sidewalks in adverse weather conditions. For example, a lack of snow removal can create obstructions to safe sidewalk use, sometimes forcing pedestrians into the roadway. Weather-related maintenance measures are generally the responsibility of the property or facility owners.

Table 3-1: Sidewalk Maintenance and Snow Removal

Party Responsible For		
Municipality	**Snow Removal**	**Sidewalk Maintenance**
Belvidere	Property Owners	Property Owners
Boone County	Property Owners	Property Owners
Cherry Valley	N/A	Municipality
Loves Park	Property Owners	Property Owners
Machesney Park	Municipality	Property Owners
Rockford	Property Owners	Property Owners
Rockford Park District	Municipality	N/A
Winnebago County	N/A	N/A
Winnebago Forest Preserve	N/A	N/A

Source: Region 1 Planning Council

In residential areas, the Illinois General Assembly statute states that owners and others in residential units are responsible for snow removal on their sidewalks (745 ILCS 75/1). Table 3-1 shows the maintenance ownership of sidewalks and sidewalk facility structure.

Likewise, the maintenance of a bicycle facility falls under the responsibility of the municipality with jurisdiction over the roadway.

Demand Analysis

A large component of a well-connected active transportation network is how residents are able to get from their homes to parks, grocery stores, social service centers, work, and to see friends and relatives. Network demand is highly influenced by concentrations of housing units and employment, also known as generators or origins. However, generators are only one component of the demand analysis. Where people want to ride to or where they would likely ride to, if adequate facilities exist, is the second component of the demand analysis.

An analysis was conducted to provide a snapshot of demand based on the density of the active transportation trip generators and attractors. Factors were chosen to estimate the potential demand for a variety of trips, including utilitarian, and recreational. Demand factors can be organized into five overarching categories: live, work, learn, play/shop, and transit. Table 3-2 shows the factors of the demand analysis. While Map 3-3 and Map 3-4 shows the locations of attractors.

The primary hotspots of the demand analysis were downtown Rockford, along the east portion of State Street corridor in Rockford near Rockford University and major commercial developments, along Riverside Boulevard west of Alpine Road in Loves Park. These hotspots can be seen in Map 3-5. Connecting these hotspots with low-stress bikeways within each hotspot are a priority of this plan.

Utilitarian

Cycling done as a means of transportation rather than recreational or leisure.

Source: Utilitarian Cyclists | Albany Bicycle Coalition

Recreational Cyclists:

Those who use a bicycle for pleasure or short trips.

Source: Department of Transportation & Communication Management Science, National Cheng Kung University, 1 University Rd., Tainan, 701, Taiwan

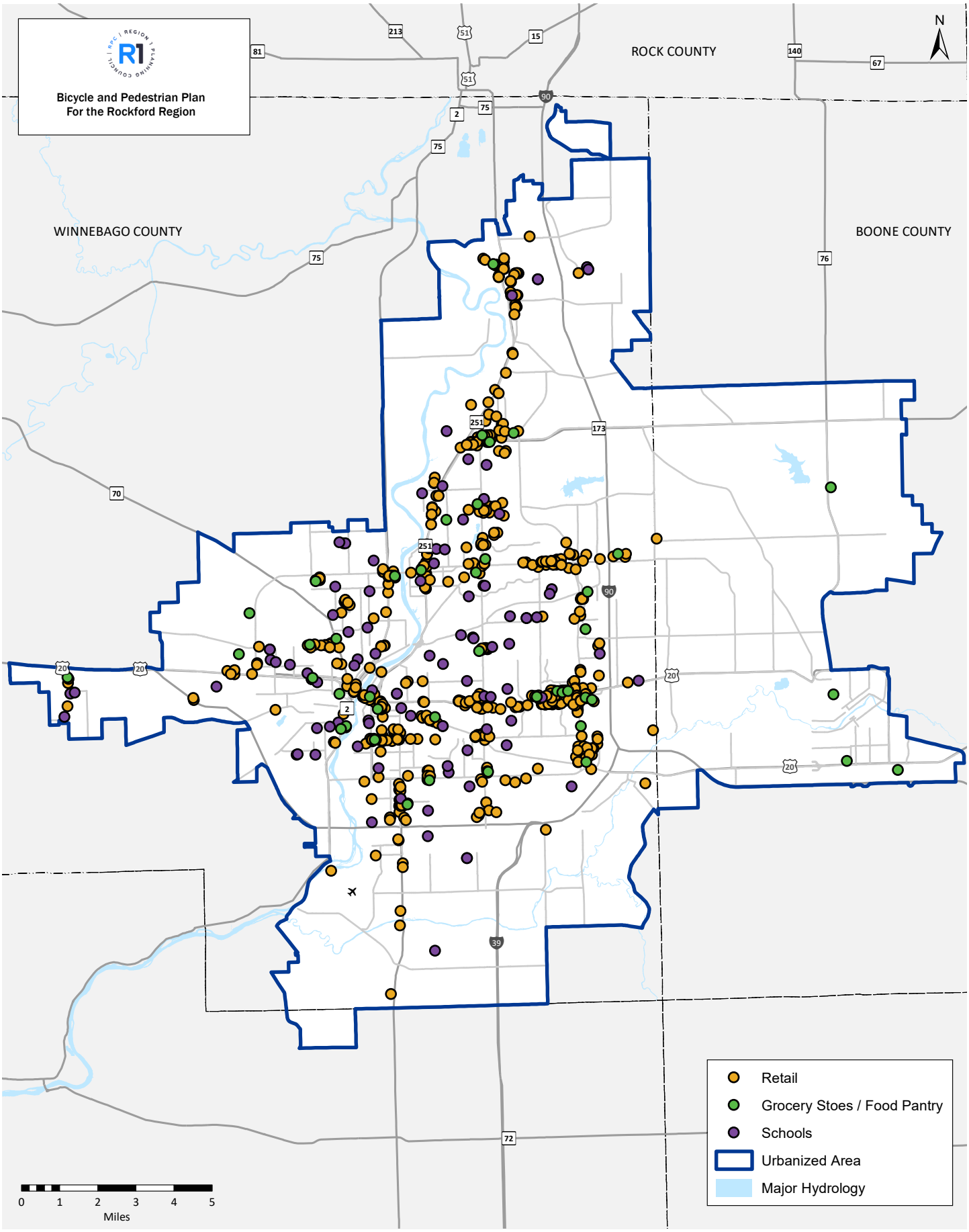
Table 3-2: Demand Analysis Factors

Demand Scoring Inputs		
	Input	**Metric**
Live	Population Density	Population density greater than (> 75th percentile)
		Population density between (50-75th percentile)
		Population density between (25-50th percentile)
		Population density less than (25th percentile)
Work	High Density Employment	Employment density greater than (> 75th percentile)
		Employment density between (50-75th percentile)
		Employment density between (25-50th percentile)
		Employment density less than (25th percentile)
	Significant Employment Center	Within 1-mile radius of a significant employment center
		Outside 1-mile radius of a significant employment center
Equity	Low-Income	Within Block Group
		Outside of Block Group
	Seniors	Within Block Group
		Outside of Block Group
	Minority	Within Block Group
		Outside of Block Group
	Low English Proficiency	Within Block Group
		Outside of Block Group
	No Vehicle Access	Within Block Group
		Outside of Block Group
	Hispanic/ Latino	Within Block Group
		Outside of Block Group
Learn	Higher Education	Feature located in block
	Elementary School	Feature located in block
	Middle School	Feature located in block
	High School	Feature located in block

Demand Scoring Input		
	Input	**Metric**
Play & Shop	Major Generators	Within 1/4-mile radius of a major Tourist Attraction
		Within 1/2-mile radius of a major Tourist Attraction
		Within 3/4-mile radius of a major Tourist Attraction
		1-mile or more radius of a major Tourist Attraction
	Community Services	Within 1/4-mile radius of a Community Service
		Within 1/2-mile radius of a Community Service
		Within 3/4-mile radius of a major Community Service
		1-mile or more radius of a major Community Service
	Medical Facilities	Within 1/4-mile radius of a Medical Facility
		Within 1/2-mile radius of a Medical Facility
		Within 3/4-mile radius of a major Medical Facility
		1-mile or more radius of a major Medical Facility
	Grocery Stores	Within 1/4-mile radius of a Grocery Store
		Within 1/2-mile radius of a Grocery Store
		Within 3/4-mile radius of a major Grocery Store
		1-mile or more radius of a major Grocery Store
Transit	Bus Stops	Within 1/4-mile of a bus stop
		Within 1/2-mile of a bus stop
		Within 3/4-mile of a bus stop
		1-mile or more from a bus stop

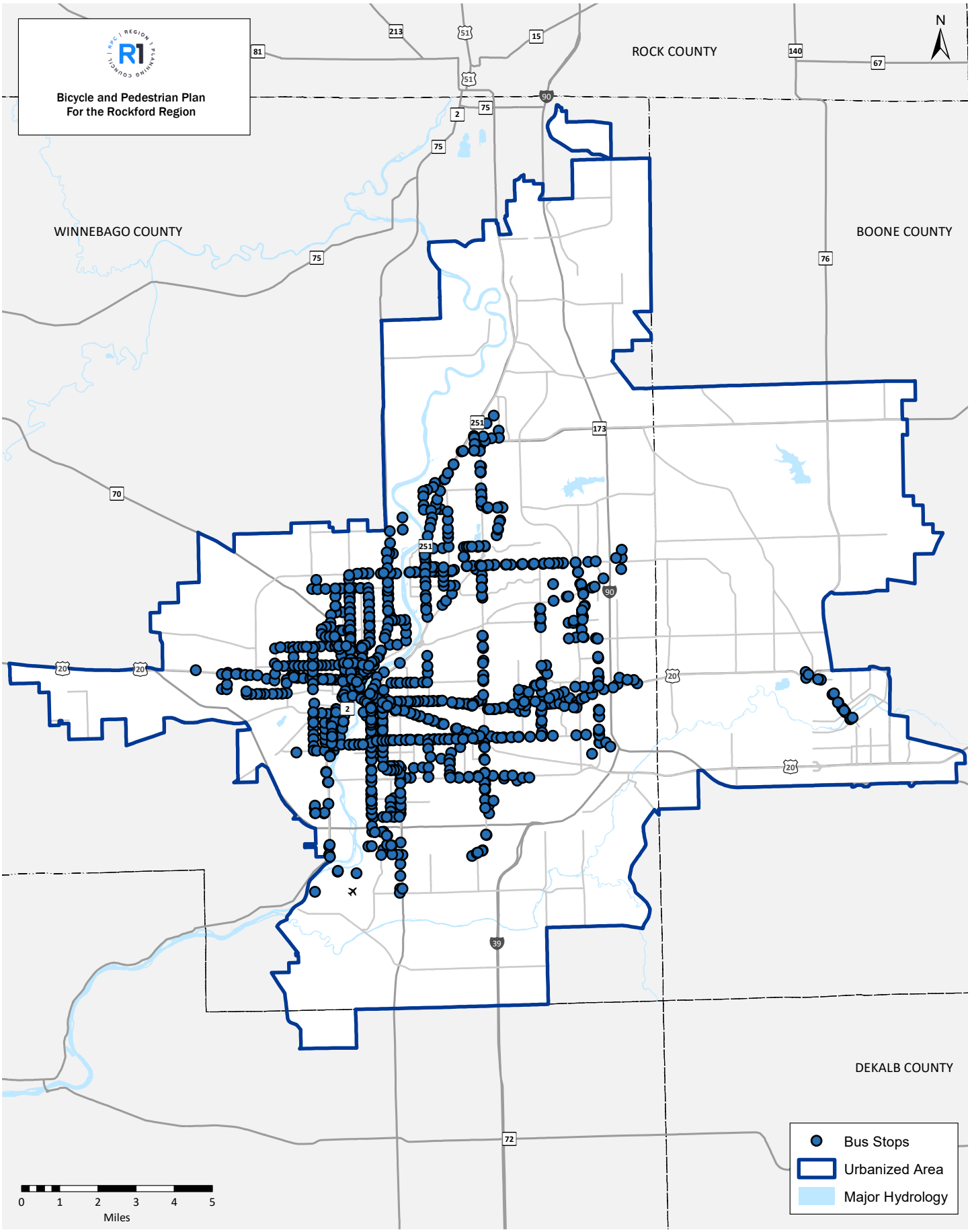
Source: Region 1 Planning Council

Map 3-3: Retail, Grocery, School Locations



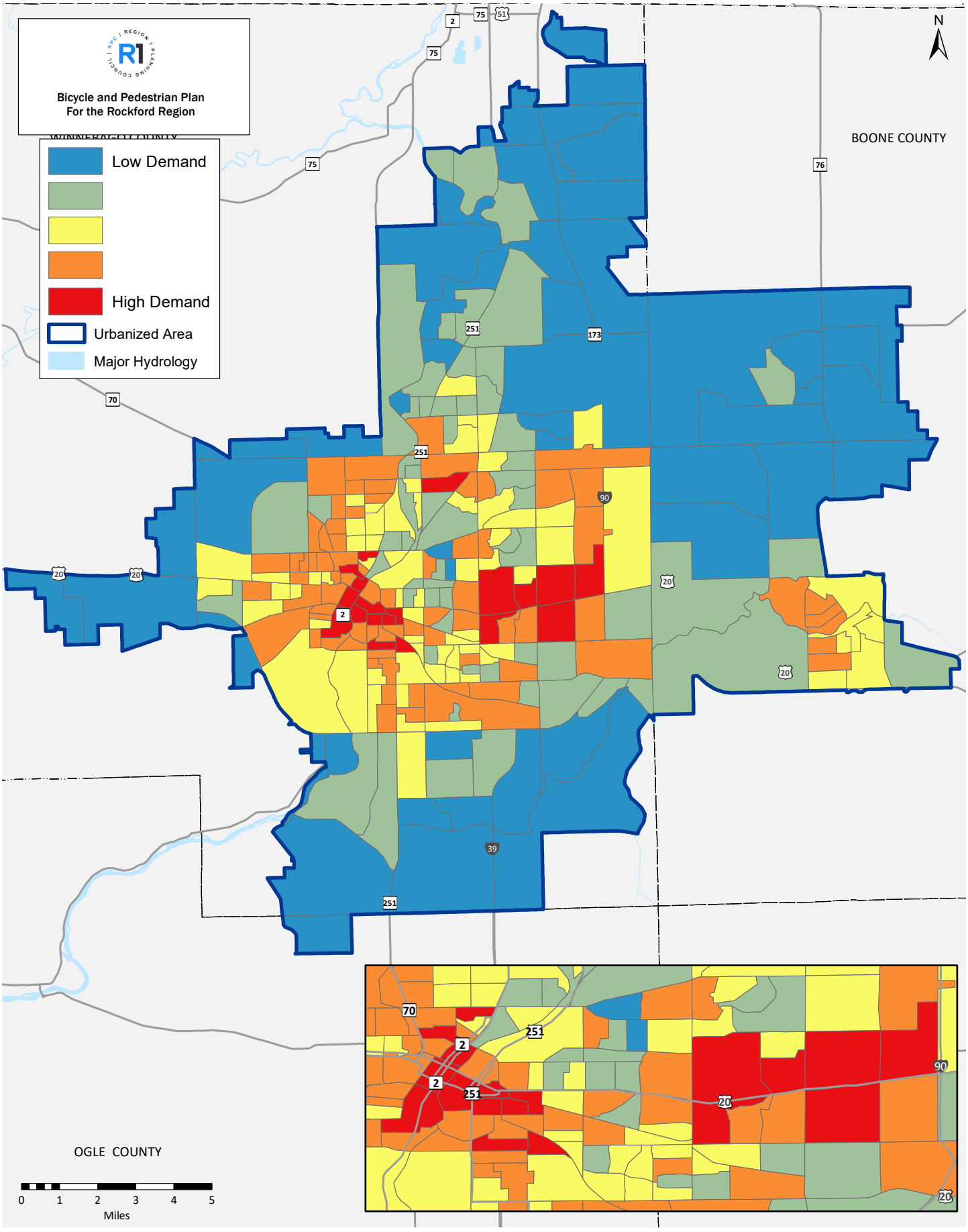
Source: Region 1 Planning Council

Map 3-4: Bus Stop Locations



Source: Region 1 Planning Council

Map 3-5: Demand Analysis Hotspots



Source: Region 1 Planning Council

Equity

Improving the ability for traditionally underserved communities to safely and conveniently walk, roll, or cycle is essential to achieving an equitable transportation system that can provide options on how people access to jobs, schools, health care services, religious institutions, and social gatherings. Equity is the fair and impartial distribution of resources and opportunities. Communities that have increased the transportation choices for their citizens have seen greater equity and quality of life.

Traditionally Underserved Populations

At-risk, vulnerable, low-resource, or disadvantaged persons which include low income, minorities, older adults, limited English proficiency, or people with disabilities.

Source: FHWA

Traditionally underserved populations have a greater need for facilities for walking, wheeling, and bicycling compared to other groups due to limited access to a private vehicle. Equitable access to safe infrastructure makes biking safer for those who are already riding as well as helping to get those who want to use a bike for transportation purposes out on the streets. Unfortunately, there are still disparities in access to infrastructure for low-income and people of color communities across the county.

Data from the National Household Travel Survey show that people of color account for a smaller proportion of bicycle and pedestrian trips, making up about 19 percent and 26 percent respectively[lxxiii]. Additionally, 24 percent of Americans living in poverty do not own a vehicle[lxxiv] due to price constraints. Furthermore, low-income, minority or immigrant individual are more likely to have jobs that cause them to commute outside of the traditional '9 to 5' hours which is often in the dark and during times that public transit is not providing services[lxxv].

In order to achieve transportation equity for all, it requires an understanding of the unique needs and safety concerns of different populations. Bicycle and pedestrian planning needs to provide the appropriate amount of resources to each group in order to enhance the ability of traditionally underserved populations to utilize active transportation options and bring benefits to the entire community.

Chapter 4
Existing Conditions

Bicycle Network

Asset Inventory

The Rockford Region has a mixture of on-street and off-street bicycle facilities and has made many advancements in the network since the previous iteration of the Bicycle and Pedestrian Plan. A thorough analysis of the existing network for bicyclists has been conducted and included a review of the existing shared use paths and on-street bicycle facilities, examining bicycle-related crashes, and conducting a Bicycle Level of Stress analysis. This analysis can be used to determine current weaknesses in the network and the opportunities to improve bicycle infrastructure in the future.

The data used to analyze the existing conditions is derived from multiple sources, including Geographical Information System (GIS), Illinois Department of Transportation's Illinois Traffic Crash Reports as well as StreetLight Data.

Off-Street Bicycle Facilities

Shared use paths are the predominate facility type within the Rockford Urbanized Area (UA) designed for bicycle use. As of February 2023, there are 123.1 miles of shared use paths located within the UA with approximately 129.8 miles of shared use paths within the Rockford Metropolitan Planning Area (MPA). Shared use paths vary in widths from eight feet to twelve feet and surface materials can also vary. Some of the region's shared use paths are historic, while others were only completed recently. The paths also vary greatly in length, connectivity, amenities, and other features. For example, some paths are designed for use within a specific neighborhood or park and do not connect anywhere and in some instances are less than 1,00 feet in length.

Other shared use path systems link together allowing users to travel great distance with little flow interruption or vehicle crossings. A great example of this is the Long Prairie Trail connecting into the Stone Bridge Path and eventually into the Hononegah Recreational Path. Additionally, there are 227.6 miles of proposed or planned future shared use paths within Boone and Winnebago County in order to improve connectivity across the region.

On-Street Bicycle Facilities

Throughout the region, there are currently 63.4 miles of existing on-street bicycle facilities in Winnebago County. At this time, Boone County does not have on-street bicycle facilities. This may, in part, be attributed to the rural character of the county and the density of the populated downtown core of Belvidere.

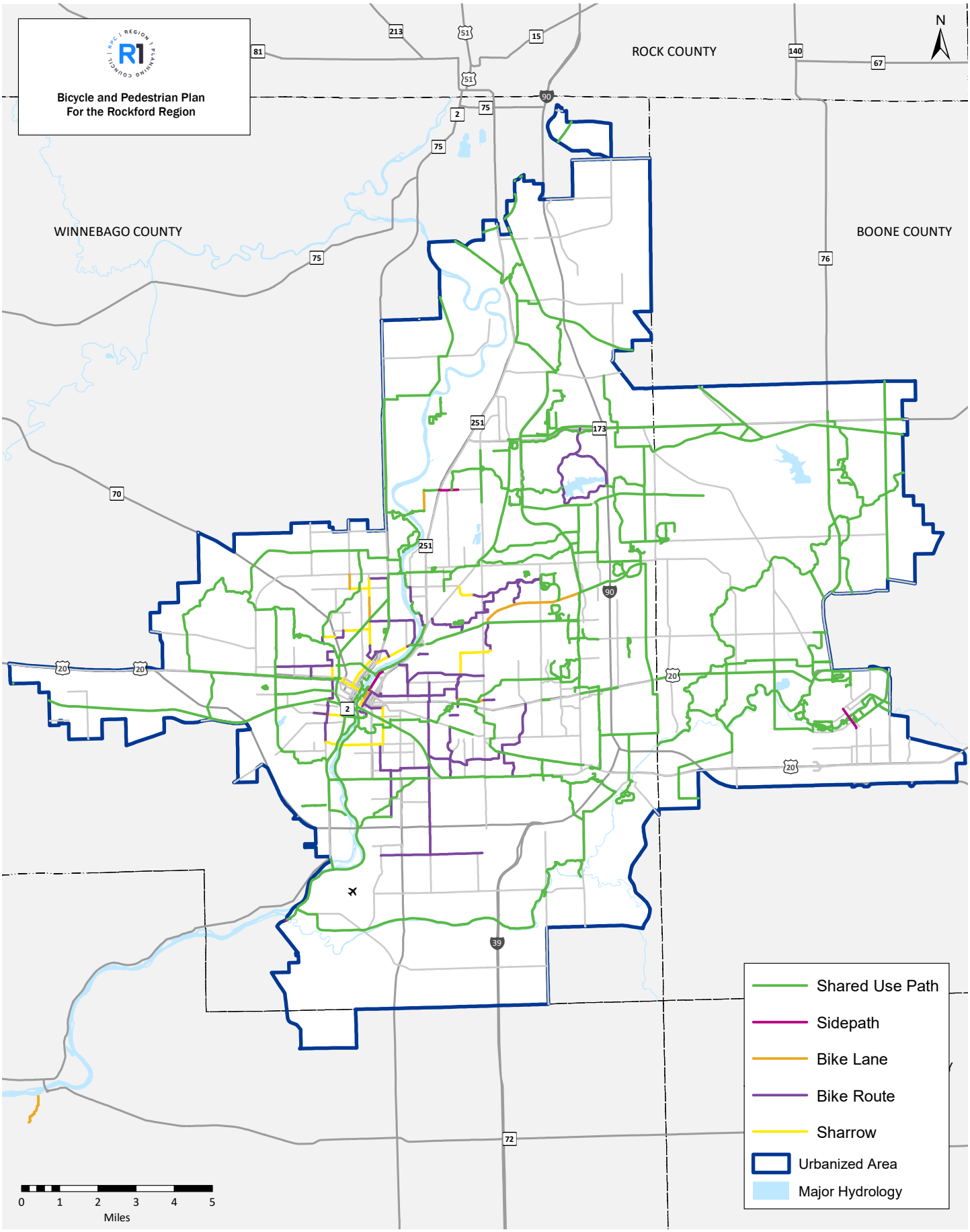
Currently, there are 46.5 miles of on-street bike routes that are designated by a route sign, with no pavement markings present. These are the least ideal type of on-street bicycle facility because drivers are generally unaware of the designated route due to the lack of markings. There are 10.8 miles of on-street bike routes with a sharrow pavement marking along the route. There are approximately 10.4 miles of designated on-street bike lanes in the region. Bike lanes are the most preferred type of on street bike facility and increasing the number of miles for the region is greatly needed. Additionally, there are almost seven miles of future on-street bicycle routes planned.

Table 4-1: Miles of Bicycle Facilities by Type

Facility	Miles
Bicycle Lane	10.4
Shared Lane with Sharrow	10.8
Bicycle Route	47.2
Shared Use Path	401.7

Source: Region 1 Planning Council

Map 4-1: Map of the Bicycle Network



Source: Region 1 Planning Council

A Injury: Incapacitating Injury

An injury that prevents the injured person from walking, driving, or continuing normal actives. This includes severe lacerations, broken bones, skull, chest or abdominal injuries

B Injury: Non-incapacitating Injury

Any injury other than fatal or incapacitating injury. This includes lumps, abrasions, bruises or minor lacerations.

C Injury:

Any injury reported or claimed which is not listed under type A or B. This includes momentary unconsciousness, claims of injuries that are not evident, limping, complaints of pain, nausea, or hysteria.

O Injuries:

No indication of Injury.

Source: Crash Summary.dgn (Illinois.gov)

Safety

Over the past five years, the Rockford Region has seen numerous accidents across the area resulting in fatalities and injuries. The Rockford urbanized area has seen a total of 120 bicyclist-related crashes between 2017 and 2021, with a total of 113 injuries and three fatalities.

Since 2017, there has been an upward trend in the number of bicycle related incidents, with the highest cyclist-related crashes occurring in 2020, with a total of 37 crashes resulting in 36 injuries. Out of those injuries, two were severe, 21 resulted in minor injuries, and 12 had no evident injuries. While the region saw a decrease in total crashes involving a cyclist in 2021, two crash-related fatalities occurred.

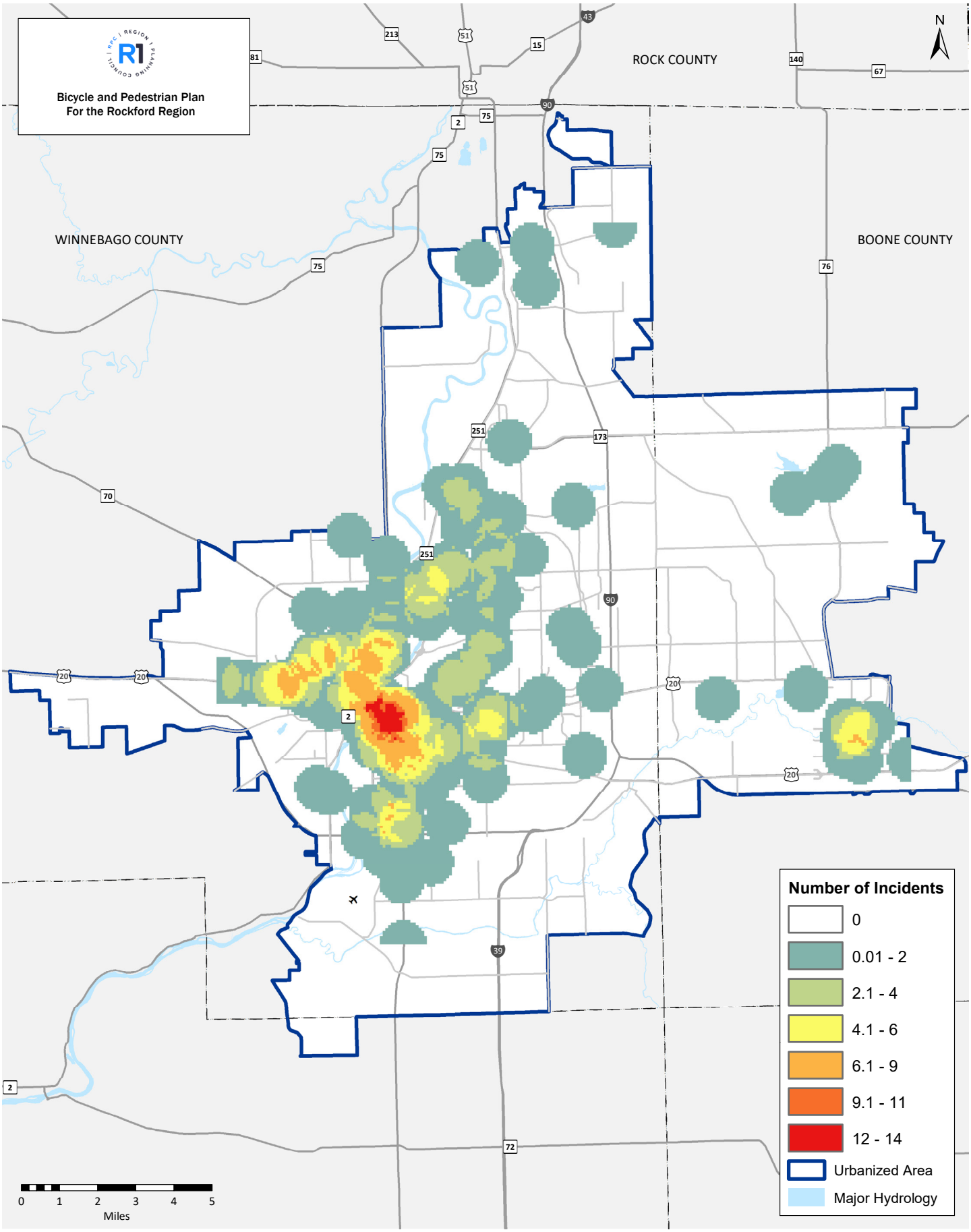
Bicyclist-involved crashes are spread throughout the Rockford Region with higher frequency of crashes, particularly in the densely populated areas of Rockford, Machesney Park, and Loves park. These crashes are located on both major and local roadways as seen in Map 4-2.

Table 4-2: Pedalcyclist Crashes within the Urbanized Area

Year		2017	2018	2019	2020	2021	Totals
Pedalcyclists		12	22	27	37	22	120
Fatalities		0	1	0	0	2	3
Injuries		12	21	22	36	22	113
Severity	A	1	5	2	2	4	14
	B	6	10	11	21	9	57
	C	5	6	8	12	3	34
	PD	0	0	0	2	4	6

Source: Illinois Department of Transportation, County Crash Statistics

Map 4-2: Locations of Pedalcyclists Crashes with Fatalities



Source: Region 1 Planning Council

Bicycle Level of Stress Analysis

Bicycle Level of Stress (BLOS) is a planning tool used to measure and quantify the suitability of a given stretch of roadway for bicycling, and recognizing that people have different levels of tolerance for riding a bicycle next to motor vehicle. The level of stress analysis rates each roadway segment in order to be classified into four levels of traffic stress (LTS). When a roadway has moderate or high level of stress, it may be a sign that bicycle infrastructure such as shared use paths or a protected bike lane is needed to make it a place where more people will feel comfortable riding.

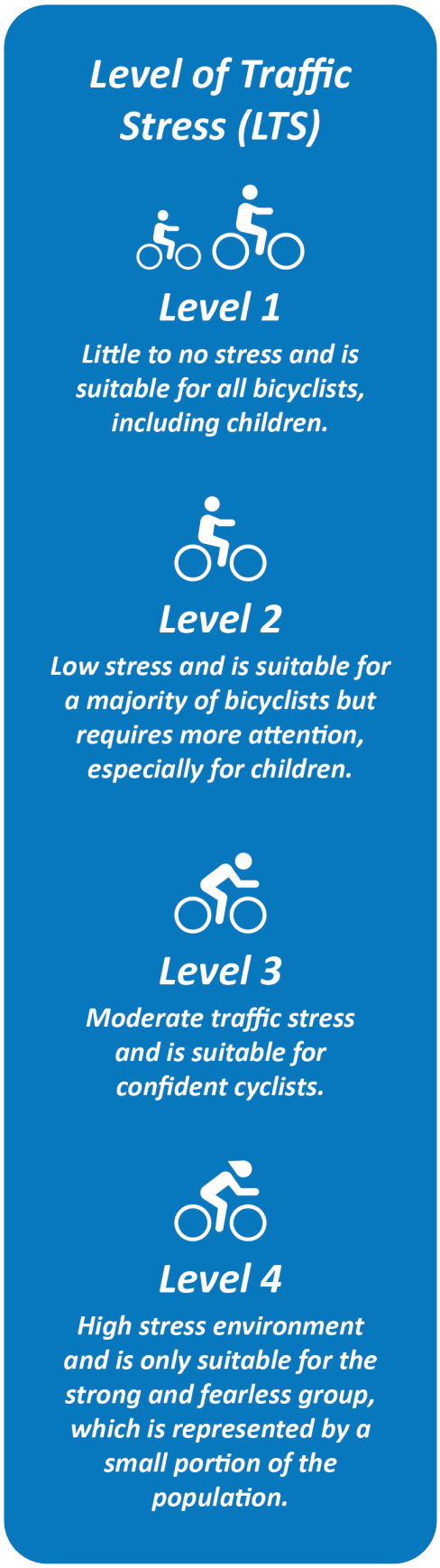
For the purposes of this analysis, 2020 data was collected for approximately 575 miles of the region's collector and arterial roadways within the Rockford Urbanized Area from the Illinois Department of Transportation. Data that was collected included:

- Speed limit;
- Lane width;
- Number of lanes;
- Annual average daily traffic (AADT);
- Truck volume;
- Shoulder type (paved or unpaved);
- Pavement condition; and
- Presence of parking.

Map 4-3 illustrates the results of the analysis, illustrating the composite score of the BLOS based on factor scores and weights. Higher scores indicate a higher stress environment for bicyclists with speed limit, AADT and truck volume being heavily weighted since these aspects have a larger impact on a cyclists' comfortability.

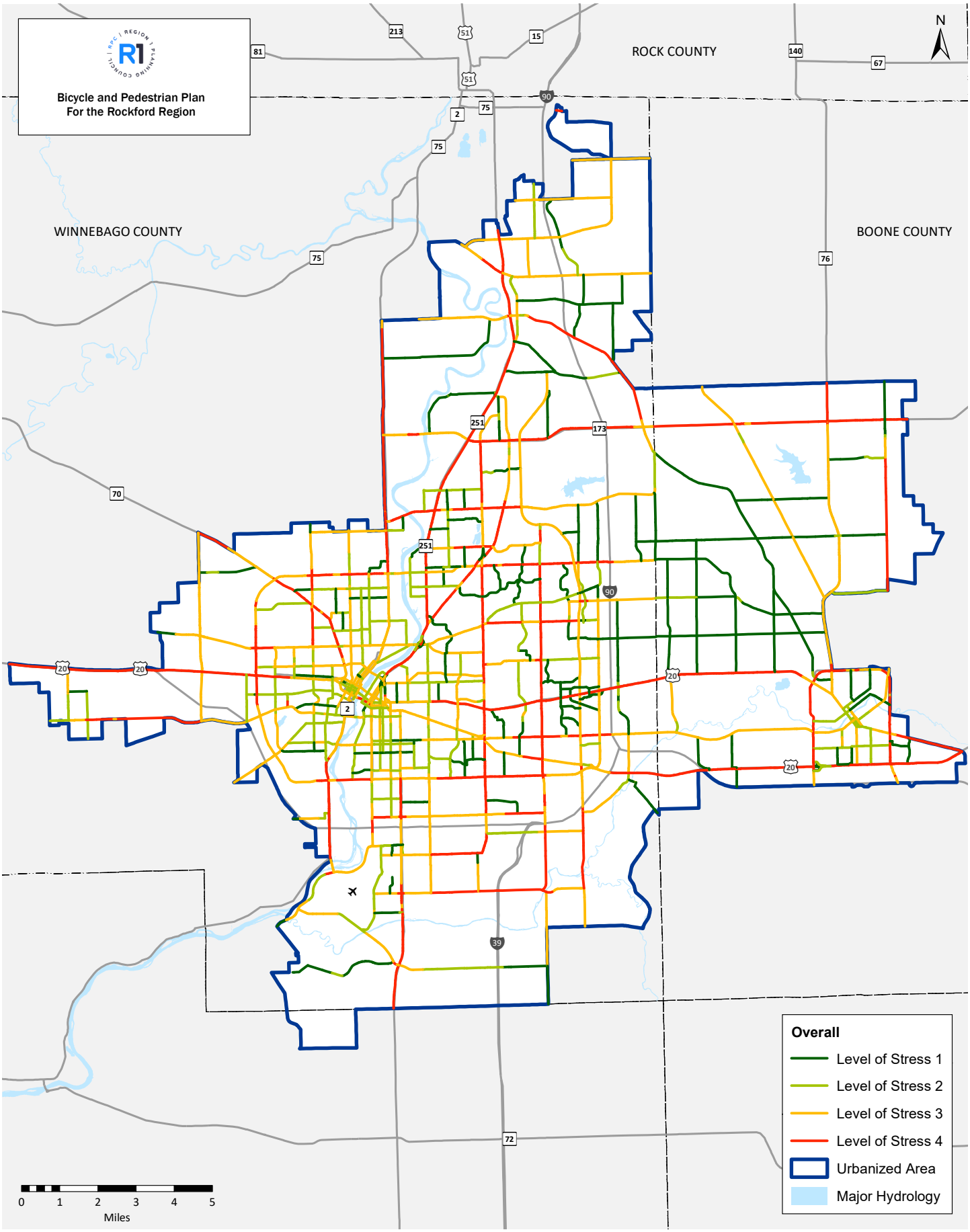
The analysis determined that 24 percent of roadway segments are no stress roadways (LTS 1), 18 percent of segments are low stress roadways (LTS 2), 34 percent is moderate stress roadways (LTS 3), and 25 percent of the region's roadways are high stress environments (LTS 4).

Figure 4-1: Different Levels of Traffic Stress



Source: Montgomery County Planning Department, Bicycle Master Plan

Map 4-3: Region's Bicycle Level of Stress



Source: Region 1 Planning Council

Pedestrian Network

Sidewalks and appropriate pedestrian crossings are essential in creating a walkable and livable region. Since the adoption of the 2018 Bicycle and Pedestrian Plan, more municipalities are looking at creating safe and desirable pedestrian pathways throughout the area. While the region has made progress in increasing the number and accessibility of sidewalks, there is still a need for improvement.

As part of the Plan update, the Metropolitan Planning Organization (MPO) collected and analyzed data in order to quantify the quality of the current pedestrian facilities across the region. This section will provide a brief overview of the region's pedestrian assets, safety concerns over the past five years and the steps and factors that were examined for both the Pedestrian Suitability Index and demand analysis.

The data used to analyze the existing conditions is derived from multiple sources, including geographical information system (GIS), Illinois Department of Transportation's Illinois Traffic Crash Reports, aerial images, as well as the online public survey that was opened from September to November 2022.

Asset Inventory

As of 2021, the Rockford Urbanized Area (UZA) has approximately 1,230 miles of existing sidewalks throughout the region, including along local roads. Of the total miles, 600 miles of roadways were examined to determine the availability of sidewalks. There are 113.5 miles of complete sidewalks, 77 miles of partial sidewalks, and 32 miles of incomplete sidewalks throughout the urbanized area.

Safety

Over the past five years, the Rockford Region has seen numerous pedestrian-related crashes in the urbanized area, resulting in fatalities and injuries. The urbanized area had total of 248 pedestrian-related crashes between 2017 and 2021, with a total of 218 injuries and 35 fatalities.

The urbanized area has had an increase in pedestrian crashes since 2017. While the number of pedestrian-related crashes dropped in 2020, numbers increased in 2021, the highest in the five-year period, with a total of 65 pedestrian-related crashes, resulting in 52 fatalities. Over the five-year period, there were a total of 52 incapacitating injuries, 89 minor injuries, and 66 non-evident injuries at scene.

Sidewalks

Complete sidewalks are sidewalks present along both sides of the street for the entirety of the street segment.

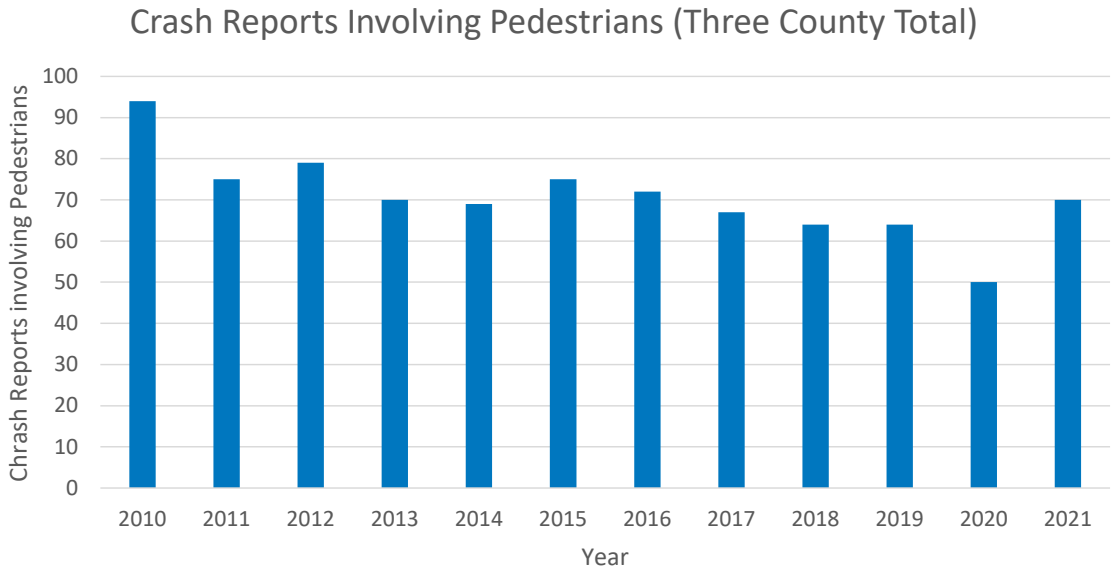
Partial sidewalks have either one side of the street entirely covered by a sidewalk or at least 50% of both sides of the street with sidewalks.

Little sidewalk was any sidewalk that was present along the segment, but equaled less than 50% of both sides of the street or 100% of one side of the street.

Finally, no sidewalk signified that there was a total absence of any sidewalk anywhere along the street segment.

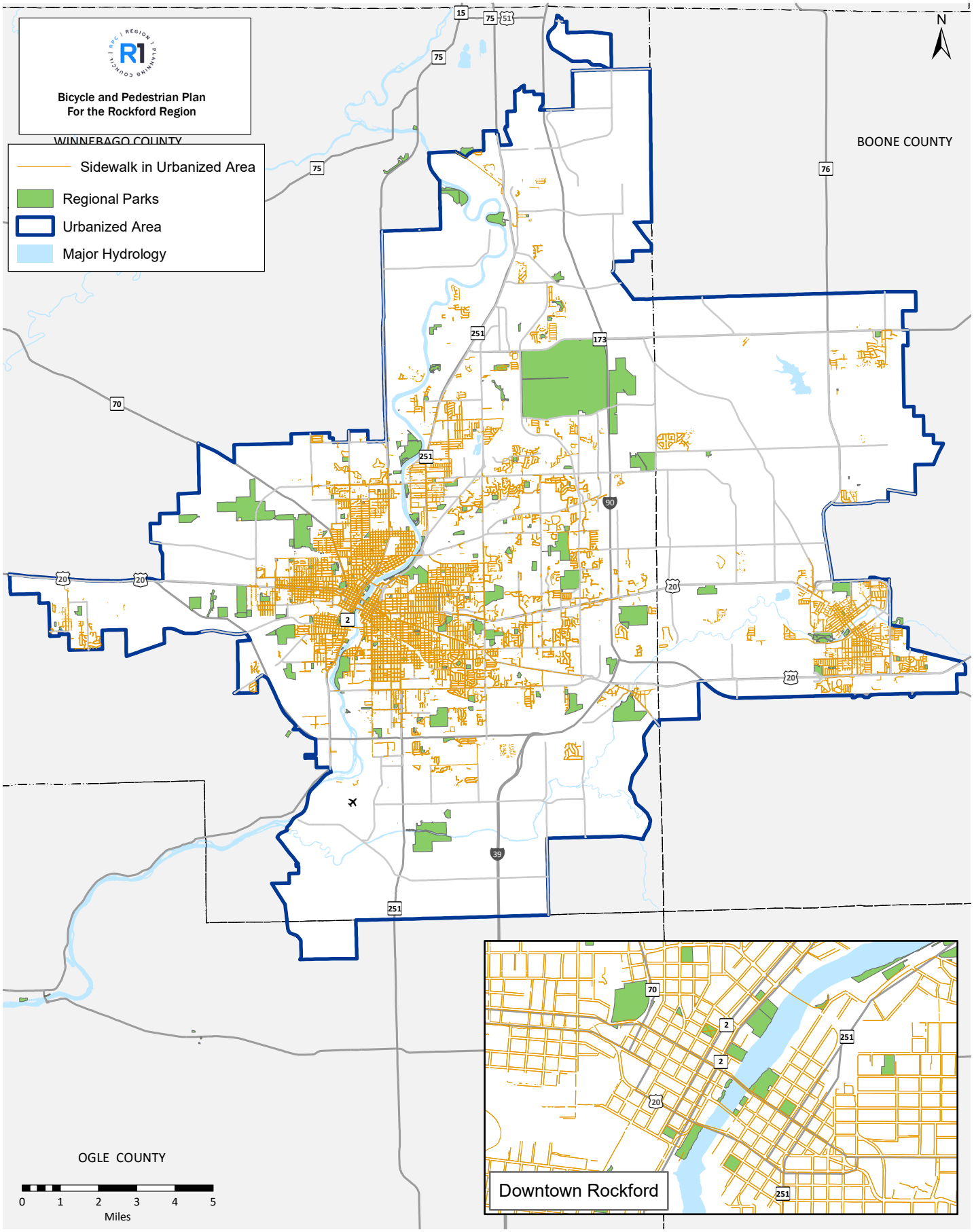
Source: Region 1 Planning Council

Figure 4-2: Crash Reports involving pedestrians- 3 County Totals



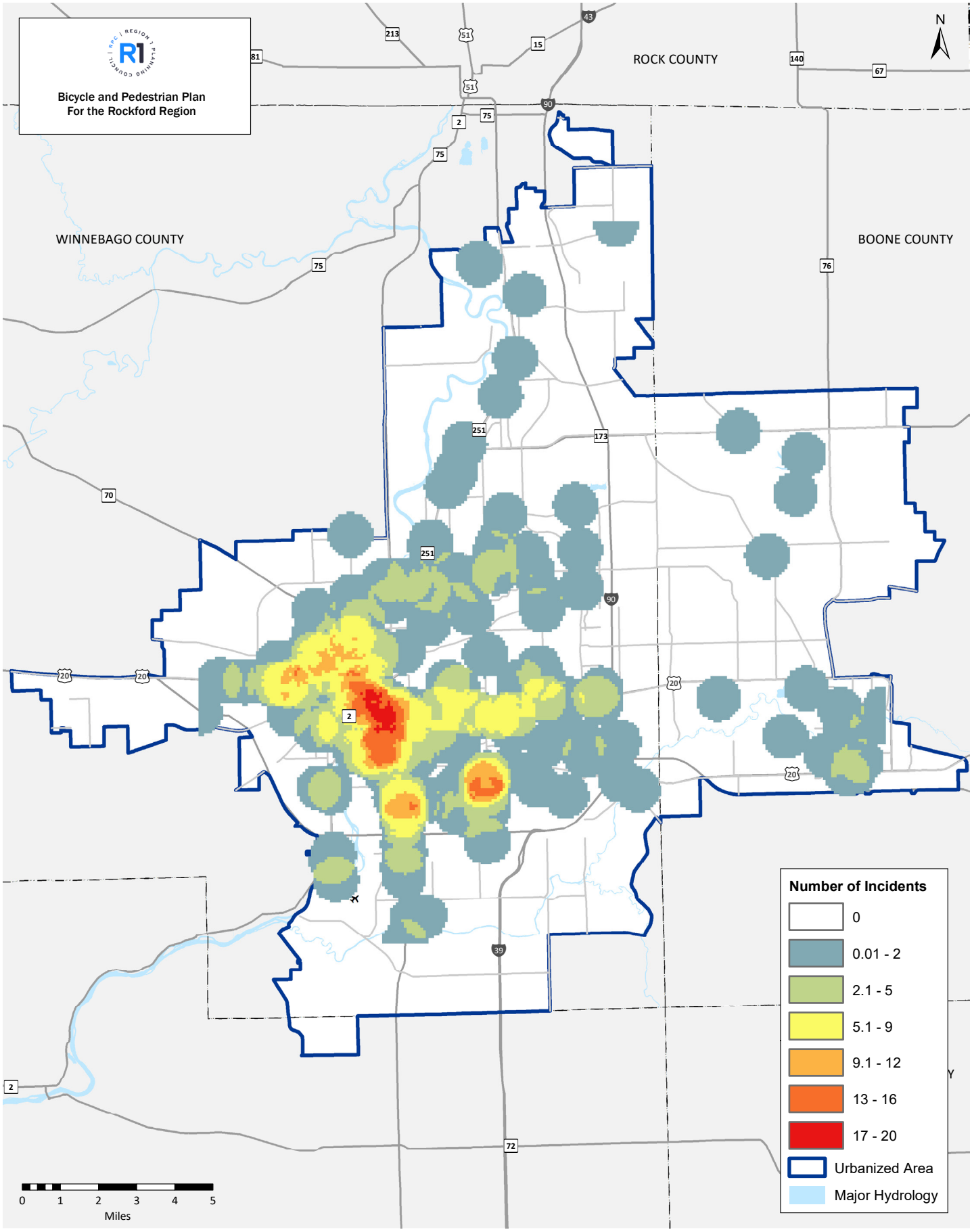
Source: Illinois Department of Transportation, County Crash Statistics

Map 4-4: Sidewalks throughout the Region



Source: Region 1 Planning Council

Map 4-5: Locations of Pedestrian Incidents and Fatalities



Source: Region 1 Planning Council

Suitability Index

A pedestrian suitability index was completed to determine the quantity and quality of the pedestrian facilities along the primary street segments and intersections in the Rockford Urbanized Area (UA). Modified from Memphis's version of the Pedestrian Suitability Index, the index provides a qualitative method for assessing pedestrian environmental categories related to the demand, traffic patterns, and design. The Pedestrian Suitability Index looks only at major roadways in the UA, e.g. roads functionally classified as Collector or above. A three-part GIS analysis was used to complete the Pedestrian Suitability Index, including a demand analysis, pedestrian network analysis, and an intersection analysis. The results of the Index have been used to develop the existing conditions portion of this plan. More information on the Pedestrian Suitability Index methodology can be found in Appendix C.

Demand Analysis

The demand analysis identifies the expected pedestrian activity areas by utilizing geographic data related to pedestrian attractors and generators. Pedestrian generators are based on demographic data, related to U.S. Census Blocks, to determine the potential volume of pedestrians based on where people live and work. Areas that contain a greater number of people living or working within them are more likely to have more people walking. Additionally, pedestrian attractors were examined to determine destinations that have the potential to generate large numbers of pedestrians in the region. The results of the demand analysis are based on the following factors:

- Population density;
- Employment density;
- Equity considerations;
- Proximity to educational centers;
- Proximity to community and tourist attractions; and
- Proximity to transit.

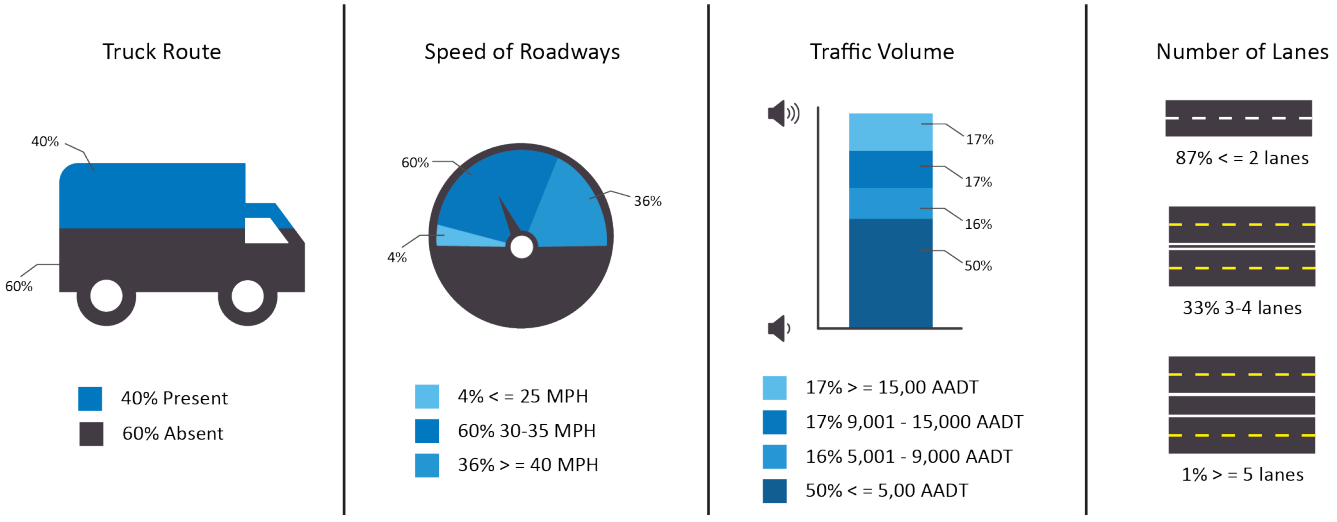
Pedestrian Network Analysis

To complement the demand analysis, the pedestrian network analysis examines the design characteristics and the traffic patterns of the roadway, as well as the pedestrian environment adjacent to the roadway. Map 4-6 illustrates the results of the analysis, illustrating the composite score of the pedestrian network score, based on factor scores and weights. Higher scores indicate a more suitable environment for pedestrians. The following factors were used for the pedestrian network analysis:

- Posted speed limit;
- Average speed;
- Vehicle lanes;
- Truck volumes;
- Traffic volumes;
- Width of roadway;
- Intersection density;
- Presence of sidewalk;
- Width of sidewalk; and
- Sidewalk buffer.

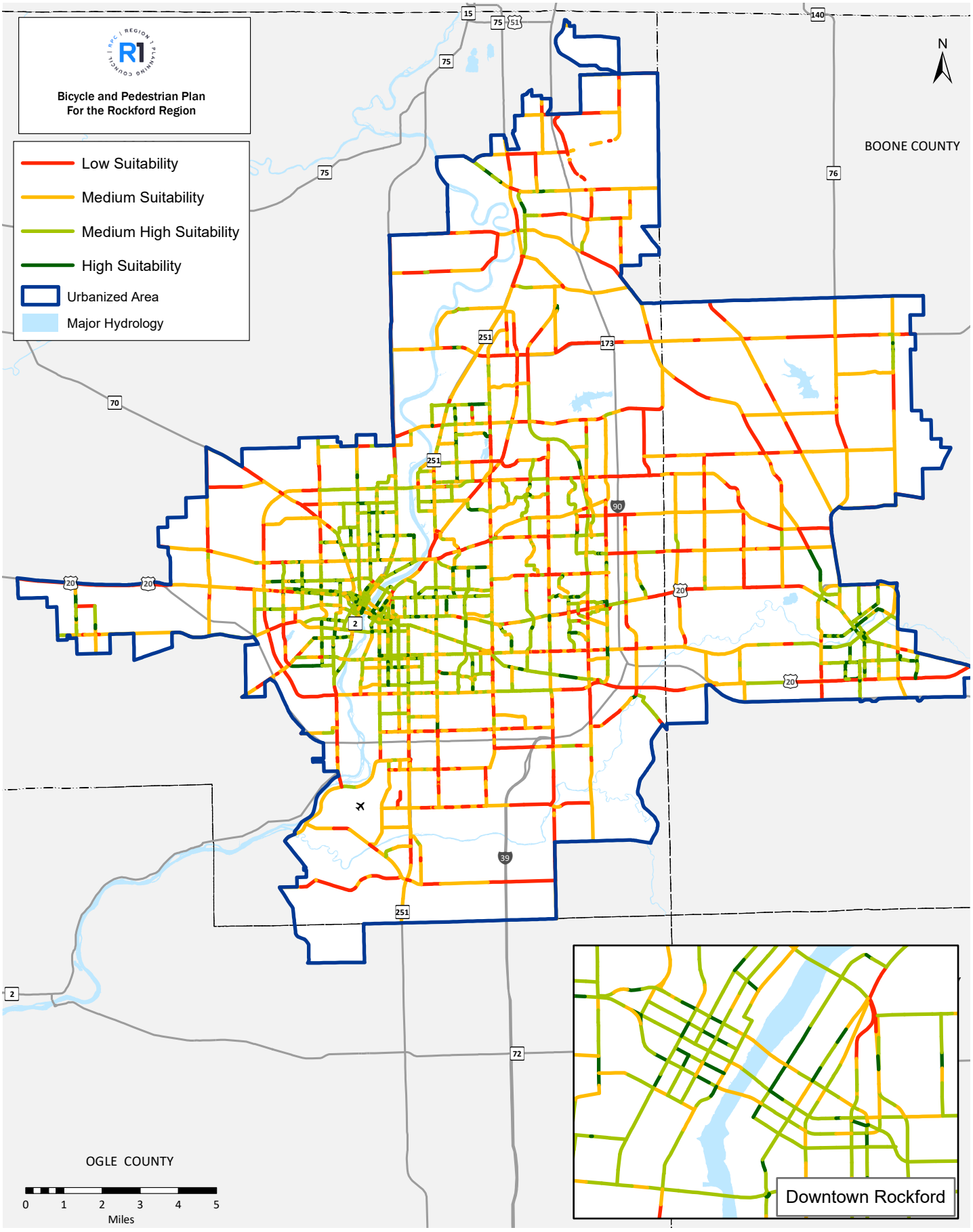
As shown in Figure 4-3, the highest portion of roads in the region are currently listed as being somewhat suitable for pedestrians at 45 percent. A large portion of the roadway segments that are somewhat suitable, scored high in the roadway characteristics such as number of lanes, lower volume, and lower speeds. However, they scored low in relation to the pedestrian network, e.g. lacking sidewalk presence, inadequate sidewalk widths, and no buffer between the sidewalk and the travel lanes. While the region is currently lacking the necessary pedestrian facilities, particularly sufficient sidewalks, a large portion of the roadway network appears to be suitable for such facilities to be built upon. Of the 600 miles of major roadways examined, approximately 69 percent, 415.5 miles, of the roads are only two lanes and 51 percent of the roadways have an average annual daily traffic volume of less than 5,000 vehicles.

Figure 4-3: The PSI Pedestrian Network Results



Source: Region 1 Planning Council

Map 4-6: Pedestrian Network Analysis Results- Segments



Source: Region 1 Planning Council

Intersection Analysis

Intersections are usually the preferred crossing location for pedestrians. Similar to the pedestrian network analysis, the intersection analysis looks at both the roadway characteristics and the pedestrian elements at a given intersection. Each leg of the intersections was examined and scored, based on the factors listed below. However, the final overall score of the intersection is based on the lowest scoring leg. Higher scores indicate the most suitable intersections for pedestrian crossings. Map 4-7 illustrates the results of the analysis based on factor scores and weights. Factors considered for intersections include:

- Posted speed limit;
- Average speed;
- Number of through lanes;
- Presence of turn lanes;
- Truck volume;
- Traffic volume;
- Traffic control device;
- Presence of pedestrian signal;
- Presence of sidewalk;
- Presence of crosswalk; and
- Presence of refuge island.

As shown in Figure 4-4, the intersections that are highly suitable for pedestrians makes up 0.7 percent of the region. A total of 3,414 intersections were analyzed across the region and a large portion of intersections were classified as medium high suitability at 46.2 percent. However, the majority of intersections across the region are medium suitability for pedestrians at 50.9 percent. These intersections lacked sidewalks on both side of the roadway, crosswalks and pedestrian signals but had higher amounts of AADT and more turn lanes for a pedestrian to maneuver.

Table 4-3: Intersection Analysis Results

Score	Class	Number	Percent of Total
76-100	High Suitability	22	0.7%
51-75	Medium High Suitability	1548	46.2%
31-50	Medium Suitability	1705	50.9%
0-30	Low Suitability	73	2.2%
	Total Intersections	3348	100.0%

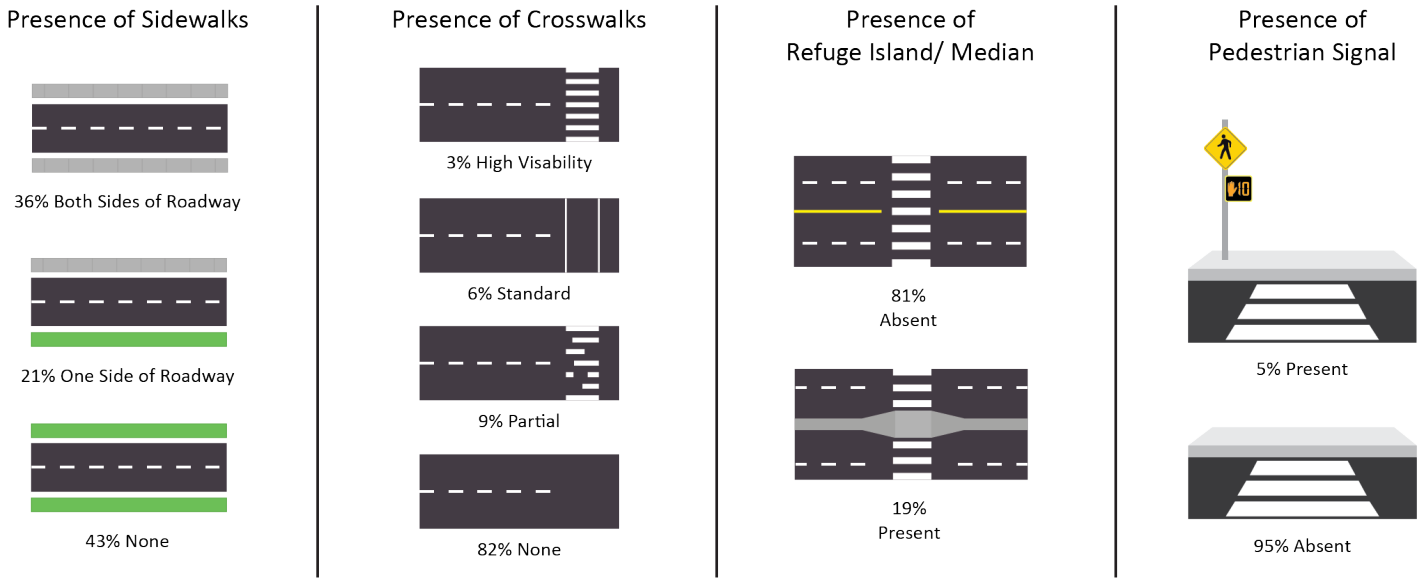
Source: Regional 1 Planning Council

Table 4-4: Presence of Sidewalks

	Miles of roadways	Percent
Complete Sidewalk	113.45	20%
Partial Sidewalk	76.81	13%
Little Sidewalk	31.96	6%
No Sidewalk	353.82	61%
Total	576.04	100%

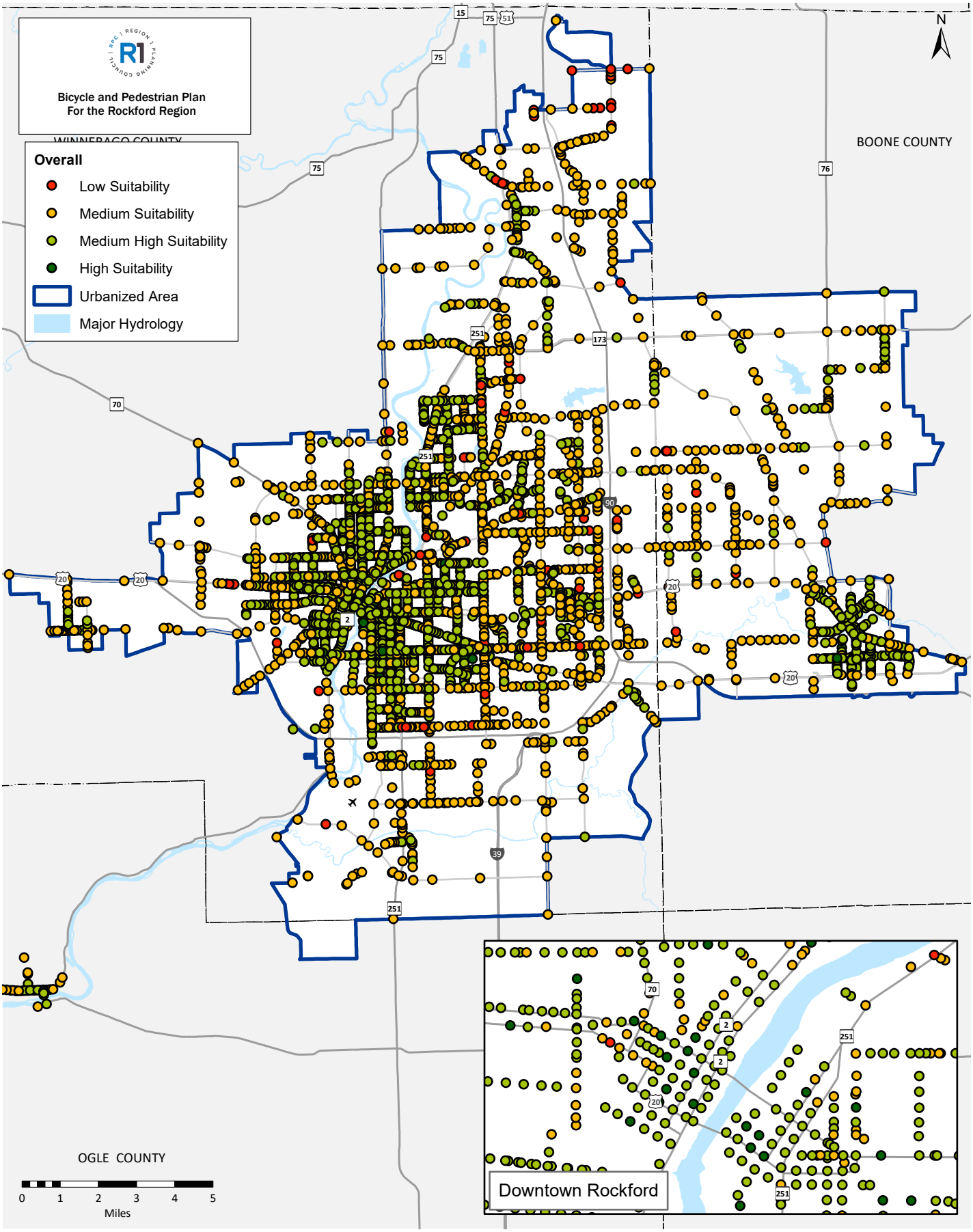
Source: Region 1 Planning Council

Figure 4-4: Pedestrian Analysis Results



Source: Region 1 Planning Council

Map 4-7: Pedestrian Network Analysis Results- Intersection



Source: Region 1 Planning Council

Chapter 5

Vision, Goals & Objectives

Vision Statement

"The Rockford Metropolitan Area envisions a community provided with a diverse and safe active transportation network of interconnected, continuous, and accessible system of sidewalks, bicycle facilities and trails throughout the region. This network will foster a culture of safety, health, awareness, and recreation to enhance the quality of life for both residents and visitors through promoting active transportation alternatives."

Goals and Objectives

Goal #1:

Improve safety by decreasing the number and severity of crashes involving vulnerable road users.

- *Objective 1.1:* Reduce the number of incapacitating injuries in crashes involving non-motorized users.
- *Objective 1.2:* Reduce the number of non-motorized fatalities.
- *Objective 1.3:* Increase awareness of vulnerable road users.
- *Objective 1.4:* Upgrade active transportation facilities to improve the safety and ease of use.
- *Objective 1.5:* Ensure regular maintenance of roadway markings, sidewalks, and bicycle facilities.

Goal #2:

Develop a well-connected active transportation network that accommodates users of all ages and abilities.

- *Objective 2.1:* Prioritize connectivity of the existing facilities when planning and programming.
- *Objective 2.2:* Increase first- and last-mile connections to major generators and points of interest to enhance the quality of life for residents and visitors.
- *Objective 2.3:* Increase signage and wayfinding.
- *Objective 2.4:* Provide bike racks throughout the region.
- *Objective 2.5:* Coordinate roadway improvements so that bicycle and pedestrian facilities are not inaccessible or eliminated in construction zones. In instances where closures are necessary, provide marked alternative routes.
- *Objective 2.6:* Develop regional and local Complete Streets policy.
- *Objective 2.7:* Adopt uniform bicycle and pedestrian facility design elements and standards across the region to provide consistent and continuous accommodations.

Goal #3:

Build a continuous, comprehensive, and cooperative environment that supports more active transportation choices.

- *Objective 3.1:* Strengthen ongoing coordination among federal, state, regional, local, and private partners to create a robust pedestrian and bicycle network.
- *Objective 3.2:* Create continuous opportunities for input and engagement in active transportation planning.
- *Objective 3.3:* Work across jurisdictional boundaries when planning, funding, and designing active transportation network.
- *Objective 3.4:* Encourage multi-jurisdictional grant applications submittals for the state and federal funding programs.

Goal #4:

Increase funding to improve sustainability and maintenance of bicycle and pedestrian facilities.

- *Objective 4.1:* Educate elected officials on the benefits of active transportation.
- *Objective 4.2:* Encourage local jurisdictions to schedule bicycle and pedestrian facility improvements in their Capital Improvement Programs.
- *Objective 4.3:* Pursue creative financing mechanisms through business sponsorships and public/private partnerships.
- *Objective 4.4:* Promote adopt-a-sidewalk, bus stop, and/or trail program.
- *Objective 4.5:* Form a dedicated local funding pool which can be used to leverage federal funds.

Goal #5:

Develop education, encouragement, evaluation, and enforcement programs for active transportation.

- *Objective 5.1:* Educate motorists on the rights of vulnerable road users.
- *Objective 5.2:* Maintain a multi-jurisdictional, online mapping system of bicycle and pedestrian facilities.
- *Objective 5.3:* Identify and coordinate with key enforcement agencies to develop strategies to increase the safety of transportation facilities for vulnerable road users.
- *Objective 5.4:* Partner with public schools to incorporate bicycle and pedestrian education into classroom curricula.
- *Objective 5.5:* Expand partnerships with advocacy and community groups in active transportation planning efforts.

Recommendations

This regional bicycle and pedestrian plan is intended to serve as a comprehensive planning tool for the Rockford Metropolitan Planning Organization (MPO) and the local jurisdictions within the MPO's planning boundaries to develop a well-connected network of active transportation options and an increased standard for livable communities. The recommendations of this plan are separated into policy, network, and program recommendations.

Policy Recommendations

Although each jurisdiction within the Rockford Metropolitan area is unique in their character and governance, the proposed policy changes in this plan should be considered equally for adoption into each jurisdiction's code of ordinances and regulations. The following policies are also recommended for adoption by MPO's Technical and Policy Committees.

Complete Streets Policies

Many communities in the United States have started to prioritize Complete Streets design. At the core of the Complete Streets concept is a focus on providing safe access for users. A complete street can accommodate all forms of transportation including public transit, personal vehicles, bicycles and pedestrians. Safety and mobility are important factors that Complete Streets provide to users of varying mobility, income levels, and ages. With these concepts in mind, municipalities can make informed decisions on creating a better multi-modal transportation system that accommodates all types of users. A successful Complete Streets policy requires multi-jurisdictional commitment to these principles throughout the street design and implementation phases of road construction, maintenance, and enforcement of policies. It is recommended that municipalities follow best practices as defined by the National Complete Streets Coalition to ensure that policy implementation is effective and sustainable. Specific recommendations on how to develop a Complete Streets policy are summarized below.

Adopt a Regional Complete Streets Policy

In developing a regional Complete Streets policy, it is important for municipalities to create a compelling vision to guide the development of pedestrian infrastructure. It must be able to resonate with multiple stakeholders and inspire community support. Much like the Complete Streets Policy from the Mid-Ohio Regional Planning Commission (MORPC) which was adopted in 2010 and updated in 2021. Complete Streets Policies are more than just transportation initiatives, they are regional standards enacted to guide livability and prosperity in a metropolitan area.

The MORPC Complete Streets vision/purpose is shown below:

"This Complete Streets Policy aims to enhance the quality of life in Central Ohio through improvements to transportation safety, equity, mobility, accessibility, connectivity, sustainability, and resiliency as well as public health and economic vitality. This vision will be implemented through street design that is context sensitive and incorporates principles and practices that focus the function of a street around the movement of people, balance mobility for everyone, and minimize negative impacts on the environment."[lxxvi]

A regional Complete Streets policy should demonstrate a commitment to building transportation facilities that accommodate all modes and users through the scope of the project. It should integrate complete street development standards for all phases of a project including incremental or long- term projects that need maintenance, repair, reconstruction etc. A regional policy should also consider possible exceptions in the construction process including situations when the cost of pedestrian facility design is disproportionate to the facility use.

Adopt Local Complete Streets Policies

After a regional Complete Streets policy is adopted, it is recommended that jurisdictions within the Metropolitan Planning Area (MPA) adopt the regional or their own local Complete Streets policies to ensure full integration into the local community's transportation network. It is highly recommended that future bicycle and pedestrian infrastructure development at the local level expand beyond current minimum design standards. Specific performance measures should be identified in the local Complete Streets policy to track progress of its implementation. Some examples of local performance measures that reflect successful

implementation of pedestrian infrastructure development are listed below:

- Linear feet of new or reconstruction sidewalk;
- Miles of new or restriped on-street bicycle facilities;
- Trip reduction of Vehicle Miles Traveled (VMT) or Single Occupancy Vehicle (SOV);
- Construction of pedestrian facilities on bridge projects;
- Increase pedestrian trips on sidewalks, multi-use paths etc.; and
- Adhere to state standards of maintenance for snow and ice removal on sidewalks.[lxxvii]

After these regional and local Complete Streets policies are adopted, political leaders should continue to advocate for complete streets initiatives throughout their jurisdictions.

Network Recommendations

The following section describes the recommendations for both the bicycle and pedestrian network in the R1 Planning Area that would help develop a well-connected network to improve safety for all roadway users.

Increase Mileage of On-Street Bicycle Facilities

There is great need for more quality on-street bicycle facilities throughout the region. Specifically, more on-street facilities that are properly marked, signed, and are adequately enforced or monitored by local law enforcement. Signage alone on the side of the road does not necessarily inform motorists they are required by law to yield at least three feet to cyclists riding on all roads and streets, except highways.[lxxviii] Based on feedback from the public survey, many cyclists in the region feel as if motorists do not care about them and often times ignore painted markings used to indicate cyclists can share the road. Providing appropriate on-street facilities, as a part of maintenance or reconstruction of the roadways, could help alleviate this concern.

The region has been gradually moving in a positive direction with recent projects that have included upgraded pedestrian and bicycle facilities, namely in conjunction with state route projects. However, incorporating new on-street bicycle facilities do not always need a large construction project to be associated with. Sometimes less infrastructure intensive approaches such as restriping can accommodate a bicycle lane configuration. The region as a whole is encouraged to implement more out of the box ideas as additional management practices are introduced.

Additionally, creating more protected bike lanes can be a very cost-effective solution to improve safety and network connectivity between on-street routes and off-street facilities. Protected bicycle lane design is directly related to the corridor's existing uses, roadway conditions including engineering, context, and other constraints. In order for a protected bike lane to be successful, a flexible design approach with viable options that range in dimension, design, and best practices should be utilized. Protected bicycle lanes are a low stress option for connecting and filling gaps in the current system and provide a much safer means to do so on a bicycle.[lxxix] Since protected bike lanes are purposefully delineated from vehicular traffic, bicyclists have an inherently safer area to ride in. In fact, studies have shown that bike infrastructure, particularly physically protected bike lanes that separate bicyclists from speeding cars as opposed to shared or painted lanes significantly lowers fatalities in cities.[lxxx]

Intersection Improvements

Intersections are a critical part of street design as they create points of conflict between pedestrians, bicyclists, and motorists. Intersection improvements should ensure safe and comfortable use regardless of the mode of transportation. This section will provide information on intersection improvements that accommodate both bicyclists and pedestrians to promote safety and efficiency for all users.

Bike boxes may be used at intersections that see a large volume of bicycle traffic, or may have a high rate of crashes between users. A bike box is simply a colored box designated for cyclists to wait at before an intersection, between the stop bar and crosswalk, while the light changes. Bike boxes put the cyclists out in the front, ahead of the first vehicle waiting in line to progress through the intersection. Bike boxes allow cyclists to be very visible to all vehicles in the intersection and allows cyclists to get a head start when the light turns green. This directly decreases the number of crashes from motorists turning in front of a cyclists' movement, which is illegal. Bike boxes also improve pedestrian safety and visibility by requiring motorists to stop further back from the crosswalk and prevent motorists from turning on red when a cyclists or pedestrian is present, as they have the right of way.[lxxxi]

Bicycle intersection signals are located at a marked traffic intersection that are specific to bicyclists only. Generally, they are found at busy intersections used by both bicycle and vehicular traffic. Often times signals are used to give cyclists a head start before vehicles begin their movement so they can be through areas of conflict sooner. A bicycle signal will look similar to a traffic light but will have either a brightly lit green or red bicycle silhouette depending on who has the right of way.

Additionally, signal timing and signal design should accommodate bicyclists and pedestrian. City engineers need to take the entire transportation system into account and must ensure that bicyclists are planned for as part of the regional transportation network. Signalized intersections with actuation devices should be equipped with a method to detect bicycles (microwave, video detection, or loop system). Electric bicycle signals should be considered at intersection locations with heavy conflicts between bicycle and motor vehicles, and where conflicts have already occurred. Bicycle signals are separated from regular traffic control devices and positioned to control bicycle movement through an intersection. The bicycle signals also need to be coordinated with pedestrian movement whenever possible in order to increase safety and minimize the delay to automobiles.

For pedestrians and vulnerable populations (i.e. younger children, elderly adults and persons with disabilities), intersections are areas of high activity on the roadway and require appropriate traffic control. Appropriate intersection traffic control mechanisms should be installed to inform pedestrians when to cross the

roadway safely and to alert automobiles that pedestrian activity will occur ahead. Installation of the intersection traffic control mechanisms as listed below are highly recommended to address issues of wide arterial roads in the Rockford Region. These mechanisms will provide a broader time window for pedestrians to cross.

- Channelized right turn lanes are separated from the rest of the intersection by painted lines or raised barriers, usually in the shape of a triangular islands. These can be installed at one or more approaches at a signalized intersection. These are used to aid pedestrians in crossing fewer travel lanes and provide refuge for slower pedestrians.[lxxxii]
- Smaller curb radii guides vehicles in turning corners and separates vehicular traffic from intersection corners. This shortens the length of pedestrian crosswalks. It also increases pedestrian visibility to drivers and reduces pedestrian crossing distance as well as vehicular speed.[lxxxiii]
- Leading pedestrian intervals typically give pedestrians a 3-7 second head start during an all-red phase to cross the street and reinforces the pedestrian right-of-way to turning vehicles.
- Signal phasing can be used to protect pedestrian movement from multiple directions, especially reducing crashes from left-turn movements. Signal phasing times the traffic signals appropriately to accommodate for pedestrian traffic during high volume times for pedestrian activity. Often, an activation button is available.

Traffic Calming

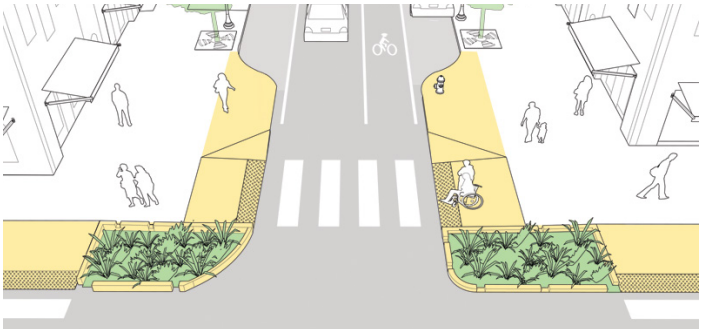
Specific design techniques can be applied to improve the physical infrastructure of the street. In the Rockford Region, the majority of the roadway network is comprised of roads with a posted speed limit of 30 miles per hour (MPH) or higher. It is recommended that these auto-centric, high speed areas use traffic calming elements, where appropriate, to enhance and protect pedestrian travel. Two types of traffic calming measures that have been very successful are speed cushions and curb extensions, which are summarized below:

Speed cushions are either speed humps or speed tables, that reduce the speed of single-occupancy vehicles while still ensuring that emergency vehicles can navigate safely through by providing wheel cutouts. Speed cushions can be used in major commercial areas that share the roadway with thoroughfares used for freight. Other examples of appropriate locations to install speed cushions include areas with a high amount of traffic or emergency response routes.[lxxxiv]

Curb extensions are street treatments designed to decrease the width of the roadway in order to protect pedestrians and other vulnerable users. Curb extensions improve safety at pedestrian crossings by reducing the pedestrian crossing distance and improving the ability for pedestrians and motorists to see each other. Curb extensions offer flexible, low cost solutions to calm traffic. In addition, they are only appropriate where there is on-street parking lanes and must not extend into travels lanes, bicycle lanes, or shoulders. Curb extensions also increase the space for street furniture, benches, plantings, and trees.[lxxxv] Various types of curb extensions are listed below:

- Neckdowns are curb extensions at intersections that reduce roadway width from curb to curb. When installed to mark the entrance of a residential area, they are called gateways. They have the capacity to become place-making nodes and highlight areas of the local community. The goal is to increase visibility of pedestrians to motorists and reduce length of unmarked or unprotected crossing distances for pedestrians. Elements of the gateway curb extension can greatly enhance the public realm through adding street furniture, planters and lighting.[lxxxvi]
- Pinchpoints are curb extensions placed midblock to narrow the street to facilitate midblock pedestrian crossings on low-volume streets. Pinchpoints are also referred to as chokers.
- Chicanes are off-set curb extensions that realign straight streets to form S-shaped curves. They are designed as a series of lateral shifts to slow traffic speeds.
- Bus bulbs are curb extensions that align the bus stop with the parking lane, allowing buses to stop and board passengers without leaving the travel lane. Bus bulbs should have a length of two buses for a route with frequent service and the length of one bus for routes with less frequent service.[lxxxvii]

Figure 5-1: Example of Curb Extension: Neckdown



Source: National Association of City Transportation Officials (NACTO)

Figure 5-2: Example of Curb Extension: Pinchpoint

Source: National Association of City Transportation Officials (NACTO)

Network Amenities

Signage, language, and wayfinding specifically for alternative transportation users can serve more than one purpose. For instance, it can be used to set the feel for a certain section of trail or path that may be historic or have special cultural significance. Signs may also be used to alert users of a danger, a roadway safety issue, a change in condition, or a detour. Most of the time bicycle and pedestrian specific signage lets users know what amenities or points of interest are ahead, or off the route but are near. These can also include other trails and connections to nearby on-street and shared use path systems.

It is important for the information to be clear and understandable, limited only to the location and distance. Kiosks should be used at trail heads or other important route junctions to display additional route information. This may often times include historical context, cultural information or additional resources about the area. Signs that are along a road must also conform to the 2009 edition of the Manual on Uniform Traffic Control Devices (MUTCD), a manual written by the Federal Highway Administration used to govern and control all traffic control devices and signs with revisions included in 2022.[lxxxviii] While on-street signs and information helps a person get from place to place, the information that is painted on the pavement is even more important because it is one of the leading contributors to how vehicular traffic will act around cyclists riding on street. The more apparent and obvious a bike route is to a vehicle operator, the more likely the driver will notice and yield to cyclists.

Bicycle racks are a necessity for urban cyclists wanting the opportunity to dismount their bicycle and enter into a business or shopping center. But it is not just the sufficient number of bike racks that is important, it is also the accessibility that plays a key role. For example, there are very few storefronts with bicycle racks in downtown Rockford. The same can be said for a majority of public places, such as parks, playgrounds, and bike paths, within the city's urban core. Bicycle racks need to be placed near the entrance of a store front for ease of use and for security purposes while shopping or conducting business. Bicycle racks may actually dictate whether a cyclist will stop and spend money at a business or not and should be considered when redesigning urban public spaces in the future. Many cities have found success in partnering with local businesses to sponsor themed bicycle racks in front of their business. For example, a coffee cup bike rack in front of a breakfast cafe, etc.

Cycling has been increasing in popularity across the country following the COVID-19 pandemic, thus causing bicycle sales to dramatically increase. With the increase in bicyclists, many cities are experiencing an uptick in bicycle theft. Thieves are becoming more adept on cutting through bike locks and it is estimated that around two million bicycles are stolen in the United States each year.[lxxxix] As a way to combat bicycle theft and increase security more cities are turning to bicycle storage lockers which provide the highest security for long term bike parking that not only provides protection from theft but also from vandalism and inclement weather. Lockers can be on demand where users pay for the time used[xc] or leased out where users put down a deposit which will be refunded at the end of the lease term if keys are returned and locker is in its original condition.[xci]

In addition to providing parking for cyclists, many cities are incorporating bike repair stations along popular bike routes and at bicycle parking locations. Bike repair stations provide fixed locations for cyclists to make repairs while away from home. These stations typically provide cyclists with air pumps and various tools such as a screwdriver, tire levers, and wrenches required for bicycle maintenance.[xcii]

Figure 5-3: Bike Repair Station

Source: MA & PA Heritage

Dedicated Maintenance Funds

With limited resources available for the construction of bicycle facilities in the region, a multi-faceted and dedicated funding program needs to be developed to ensure equitable multi-modal transportation planning and implementation is occurring in Boone, Ogle, and Winnebago Counties. While various funding sources from federal, state and local sources exist today to create new facilities and maintain existing ones, in cities with robust and exceptional bicycle transportation networks, a majority of the funding stems from local sources.

Rails-to-Trails

Rail-trails are multipurpose public trails that were created from former railroad corridors. Due to these areas being former railroads, they are generally flat or have a slight slope which makes them easily accessible for many types of activities including walking, bicycling, wheelchair use, cross-country skiing and more.[xciii] The Rails-to-Trails Conservancy (RTC) was founded in 1986 and has worked nationwide to develop thousands of miles of multi-use trails from abandoned railroad track to build a trail system for users coast-to-coast. The Rockford Region has one rail to trail project located south of Downtown Rockford which utilized an abandoned rail bridge and was opened to pedestrians and bicyclists in 2016 providing access across the Rock River.[xciv] The Rockford Region can benefit from identifying abandoned rail lines and work to convert them to multi-use paths provide important links for active transportation users across the region.

Figure 5-4: Rails to Trails Bridge in Rockford

Source: Bridge Hunter- Rockford Rails to Trails Bridge

Beacons

Over the years, Rectangular Rapid Flash Beacons (RRFB) have been effective at reducing the number of pedestrian injuries and fatalities at intersections. Recently, this technology has also begun to make its way into bicycle infrastructure projects throughout the nation. RRFBs are user-actuated amber LED lights that supplement warning signs at unsignalized intersections or mid-block crosswalks. RRFBs use an irregular flash pattern that is similar to emergency flashers on police vehicles to grab the attention of drivers. Illinois laws require motorists to stop for pedestrians or bicyclists waiting to use or already proceeding in a crosswalk.[xcv] The lights help to strengthen and solidify the signs that are already in place by drawing new or additional attention to them.

The pedestrian hybrid beacon (also known as the High Intensity Activated crossWalK, or HAWK), is a pedestrian-activated warning device located on the roadside or on mast arms over a midblock pedestrian or bicycle crossing. The two pertinent pieces of information here are that a HAWK device is almost always placed midblock and it must be user activated with a manual push button operation.[xcvi] The mast arm will contain MUTCD approved signage with specific language. On either side of the sign, a beacon head is placed that consists of two red lenses above a single yellow lens. The beacon head is in the "dark" until a cyclist or pedestrian is ready to cross and presses the activation button. Once pressed, the beacons will begin flashing and display a warning signal to traffic in both directions that they must yield. The device will then display a solid red signal, indicating that drivers must come to stop, while the pedestrian or cyclist will see a walk or bicycle symbol, or both, indicating that they now have the right of way to cross. Generally, HAWK devices are used at pedestrian crossings, but they are now also being designed with cyclists in mind.[xcvii]

Policies & Programs

As mentioned previously, each jurisdiction with the Rockford Metropolitan Planning Area (MPA) is unique in their character and governance. This plan is intended to serve as a guide for the region's jurisdictions to align policies and programs that will enhance active and non-motorized transportation. The recommended policies and programs promote bicycling and walking, provide information on facility location and set standards to provide well designed facilities.

Bicycle & Pedestrian Resource Website

A comprehensive online website for bicycle and pedestrian-related materials will create a "one-stop shop" for existing and potential active transportation users to find the information they may need. An interactive regional bike and pedestrian map is recommended to display existing routes and the location of end of trip facilities and amenities such as showers, bicycle racks, bike lockers, bike repair stations, water fountains, and restrooms. Residents and visitors would be able to easily plan walking or biking trips or find the best routes to a particular destination. The resource website would also act as a guide to education and safety information, such as facility types and rules of the road, as well as a guide to different community events or groups that promote bicycling and walking.

Bike to Work Day/Bike Month

May is National Bike Month, sponsored by the League of American Bicyclists and celebrated in communities from coast to coast since 1956. The month serves as a catalyst for communities to showcase the benefits of bicycling and encourage more people to try biking. National Bike to Work Week and Bike to Work Day are often cited as the month's flagship events, occurring the third week and third Friday of May, respectively. While many communities follow the national month, some communities have taken an initiative to host their own Bike to Work Day – Denver's bike to work event is in June, while Arizona hosts theirs in March. The region can build off of this momentum to create our region's very own Bike Month celebration.

The League of American Bicyclists' National Bike Month Guide provides activities and promotional materials, steps to success, statistics, and success stories. The guide includes a variety of events that can be planned to encourage bicycling, such as: bicycle tune-up events, local bike challenges, a Ride with the Mayor Event, a bicycling town hall, and a Ride of Silence to honor those who have been injured or killed while cycling in the community.

Route Maps

One of the most effective ways of encouraging people to bike or walk is by distributing maps to show that the infrastructure exists, demonstrates how easy it is to access different parts of the community by bike, and highlights unique areas, shopping districts, or recreational areas. In 2012, the League of Illinois Bicyclists, now

known as Ride Illinois, produced a "Rockford Area Bicycle Map" in coordination with R1 and several other local agencies. The map should be available on paper and online. Additionally, the map is currently available on the R1 website.

Walking & Biking Audits

An audit is an unbiased evaluation of the walking and biking environment. Walking and biking audits capture both the qualitative and quantitative data on active transportation infrastructure at specific locations through surveys. Audits are useful because they highlight how many people use existing infrastructure and demonstrate the level of need for improved infrastructure to decision makers. Audits also facilitate partnerships with community groups, schools, and the community-at-large by inviting those groups to participate in the active transportation planning process. Pedestrian audits or walking audits focus on the sidewalk existence, maintenance condition, crossing points, levels of stress, and perceptions of safety. Bicycle audits focus on the roadway infrastructure, crossing points, and access to transit as well as off-road trail networks.[xcviii] A wide variety of audits and checklists can be utilized as a guide for walking and biking audits, including the Federal Highway Administration's (FHWA) Road Safety Audit (RSA) Guidelines and Prompt Lists.

Progress Reports

Region 1 Planning Council will periodically provide updates on the progress made toward implementing the goals, policies, and programs of this plan.

Priority Corridors

It will be up to local government agencies with the metropolitan area to determine which bicycle and pedestrian facilities should be priorities, as they are responsible for the development and construction of the facilities. However, this prioritization process serves as a guide to recommend facilities that should be built in the near future in order to increase the connectivity of the bicycle and pedestrian network.

The MPO released a public survey from September 2022 to November 2022, for the public to provide feedback on preferred facilities and identify corridors that are difficult for walking or bicycling. The top corridors that the public identified are State Street/US 20, Spring Creek Road, Alpine Road, Riverside Boulevard, Mulford Road and Auburn Street.

East State Street/US 20 Business

East State Street (US 20 Business) is a principal arterial roadway that provides east-west access through the region. The roadway fluctuates between a speed limit of 30 – 55 mph with the lower speeds being in downtown Rockford and increasing speed toward Belvidere. Additionally, the corridor has complete sidewalks along both sides of the roadway in downtown Rockford but dissipate as the roadway becomes more rural to the east towards Belvidere which causes the roadway to have both high and low suitability and a high bicycle level of stress.

Alpine Road

Alpine Road is a principal arterial roadway with a speed limit of 40 to 55 MPH depending on the segment of the roadway. The roadway is a major north south connection for the Rockford region and consists of four lanes with a two-way center turn lane as well as major signalized intersections. A majority of the corridor has little to no sidewalks and no on-street bicycle infrastructure, making the corridors suitability for pedestrians low and high bicycle stress.

Riverside Boulevard

Riverside Boulevard is a principal arterial roadway that runs through a commercial corridor and provides east west access through the City of Rockford and City of Loves Park. The roadway has a speed limit between 30 to 55 MPH with sections experiencing more than 15,000 Average Annual Daily Traffic (AADT). The roadway does not have on-street bicycle facilities and while portions have complete sidewalks along both sides of the roadway, a majority of the corridor has little to no sidewalk. The roadway classifies between low, medium, and medium-high and pedestrian suitability and level three and four bicycle level of stress.

Mulford Road

Mulford Road is a principal arterial roadway with a speed limit of 45 to 55 MPH depending on the segment of the roadway. The roadway is a major north south connection for the Rockford region and consists of four lanes with a concrete median along a majority of the corridor. The corridor has little to no sidewalks and no on-street bicycle infrastructure, making the corridors suitability for pedestrians low and high stress for bicyclists.

Auburn Street

Auburn Street is a minor arterial east west corridor on the west side of the region that has a speed limit between 30 and 45 MPH. The eastern most point of the roadway located close to Downtown Rockford has complete sidewalks on both sides of the roadway, but as the roadway goes west, the sidewalks become partial or completely absent. The roadway fluctuates between medium-high, medium and low pedestrian suitability and level three and four bicycle stress.

Chapter 6

Policies and Implementation

Policies are needed to achieve the vision, goals and objectives of this plan involving both physical changes to the existing roadway networks, as well as policy changes by local jurisdictions. Implementation describes the process of how the Rockford Metropolitan Planning Organization (MPO) and its partner organizations coordinate towards implementation are and can turn the vision of a diverse and safe active transportation network into a reality. This section will outline the role that the MPO will play in the implementation of this plan as well as describe bicycle and pedestrian friendly designations and potential funding sources for alternative transportation projects.

Future Bicycle Facilities

While bicycle facilities are sometimes an afterthought, the state and local governments are ensuring that bicyclists are protected users of the transportation system by incorporating them into policies, plans and future projects.

Many of the local municipalities have provided comprehensive and neighborhood plans that have sections describing bicycle facility initiatives as future planning goals. Future routes need to be identified, evaluated, and assessed in order to prioritize projects

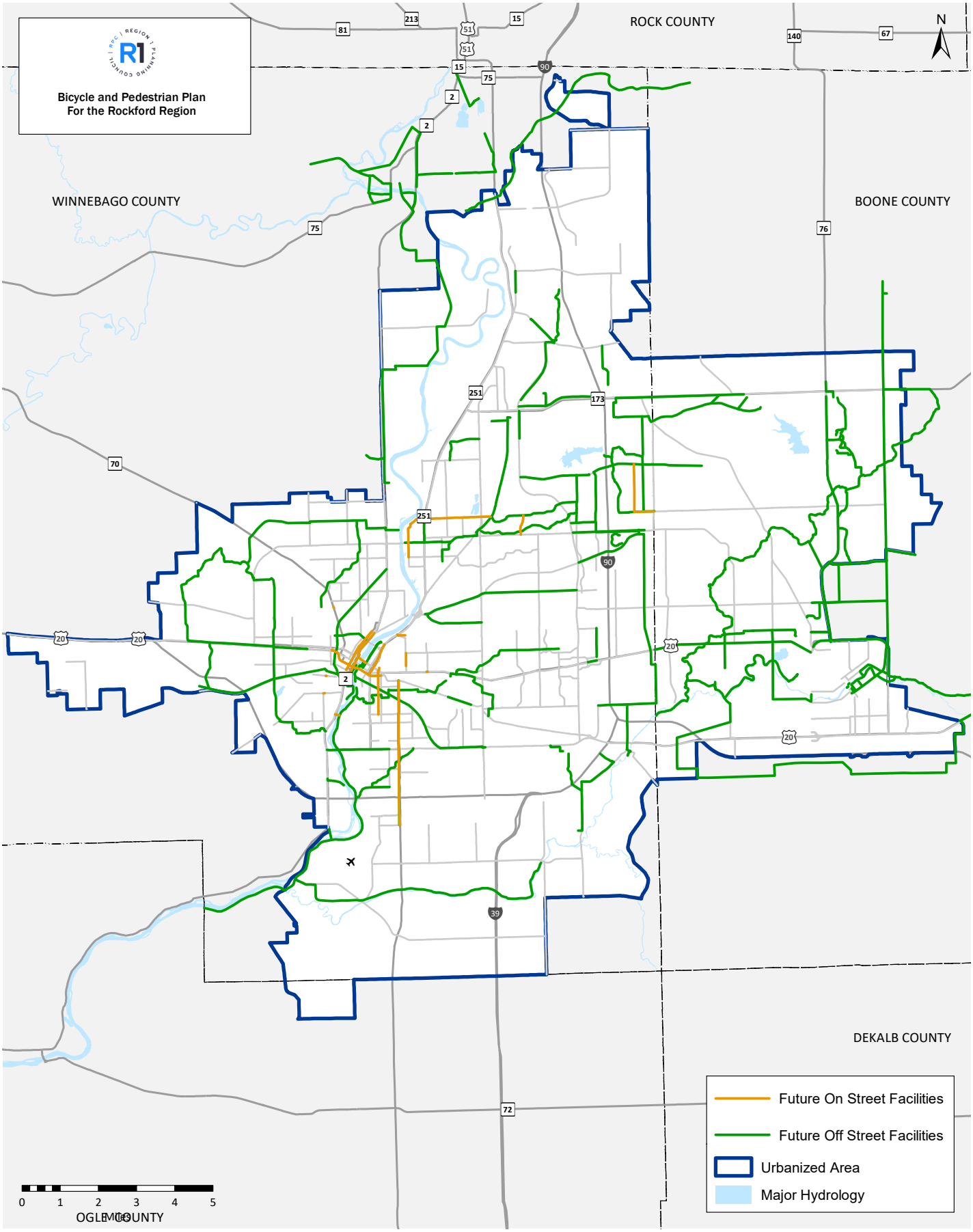
Table 6-1: Future Bicycle Facilities

Agency	Project	Facility	Status
Belvidere	Kishwaukee Overlook	Path	Future
Boone County	-	-	-
Machesney Park	-	-	-
Loves Park	River Lane: from North 2nd Street to Forest Hills Road	Route	Existing
	Orth Road: Paladin Parkway to Argyle Road	Lane	Programmed
	Paulson Road: Harlem Road to Orth Road	Lane	Programmed
	North 2nd: from Riverside Boulevard to Windsor Road	Path	Programmed
Rockford	15th Avenue Bridge over the Rock River	Lane	Planned
	11th Street Corridor Improvements from Samuelson Road to Charles Street	Path	Programmed
	Whitman Interchange from Walnut Street to Y Blvd	Lane	Programmed
	Jefferson Street Bridge over Rock River	-	Planned
	Madison Street Corridor from State Street to Y Blvd	Path	Programmed
	Downtown Complete Street Revitalization (RAISE Grant)- West State Steet to 7th Street	Lane	Programmed
	Highcrest Multi-Use Path - Spring Creek Road to Alpine Road	Lane	Programmed
	Highcrest Multi-Use Path - Alpine Road to Spring Creek	Path	Programmed
	Riverwalk Path Gaps - Rails to Trails Bridge to Wyman Street	Path	Future
	Church and Main Streets Two-Way Conversion- Cedar Street to John Street	Lane	Programmed
Rockford Park District	-	-	-
Winnebago County	Perryville Path: from Anjali Way to Willowbrook Lane	Path	Programmed
	Perryville Path: from Willowbrook Lane to McDonald Road	Path	Programmed
	Bell School Road Path: from Argus Drive to Guilford Road	Path	Programmed
	Riverside Path: Connecting Perryville Path to Sportscore II	Path	Future

Key
Existing: Facility is constructed
Programmed: Funding secured and/ or construction is underway
Planned: Part of an adopted plan
Future: Corridors being considered in future planning exercises

Source: Regional 1 Planning Council

Map 6-1: Future Bicycle Facilities



Source: Region 1 Planning Council

with the ultimate goal of securing funding for construction. Coordination between jurisdictions becomes essential to create a fully connected and efficient network of bicycle and pedestrian facilities. Table 6-1 represents future projects each municipality has planned that incorporates bicycle facilities and Map 6-1 shows their locations within the MPA.

Regional Policies & Programs

As mentioned previously, each jurisdiction within the Rockford Metropolitan Planning Area (MPA) is unique in their character and governance. All of the jurisdictions within the MPA, however, are working with the MPO to move towards a cohesive regional model. This plan is intended to serve as a guide for the region's jurisdictions to align policies and programs that will enhance active and non-motorized transportation. The following section will provide information on the role the MPO plays with implementation of this plan, complete streets policy and bicycle/pedestrian friendly designations as well as major funding sources available to help offset costs of bicycle and pedestrian related projects.

MPO Role in Implementation

The Metropolitan Planning Organization (MPO), is not an implementing agency and cannot provide upgrades to physical infrastructure. However, the MPO provides support and input to local jurisdictions who have the ability to implement the recommendations outlined in this plan. The MPO is responsible for coordinating a comprehensive transportation planning process and bridges the gap between local jurisdictions to aid in a consistent transportation network across the entire region.

The MPO can assist and provide support for the policy and program recommendations outlined in the previous section of this plan.

MPO Alternative Transportation Selection Committee

The Rockford MPO oversees the Alternative Transportation Selection Committee (ATSC), formerly known as the Alternative Transportation Committee. This is a standing committee that provides recommendations and guidance on alternative transportation funds allocated to the Rockford Metropolitan Planning Area (MPA). The committee's work will improve the conditions for bicycling, walking, and public transportation.

The ATSC is comprised of stakeholders from local governments, public transit agencies, non-profits, human services, workforce development, and transportation advocacy groups with direct links to alternative transportation planning. Input from the sub-committee will play a pivotal role in the decisions made related to the implementation of the recommendations found in this plan.

Complete Streets Policy

As mentioned in the Elements section of this plan, the MPO will develop a Complete Streets Policy in the next few years as a result of the Infrastructure Investment and Jobs Act (IIJA). The overall principle for Complete Streets is to create roadways that provide safe travel for all users, and each complete street must be customized to the characteristics of the area, whether in an urban or a rural context.

The MPO will provide leadership to establish regional policies that encourage Complete Streets design and give funding preference to projects that reflect the Complete Street principles. Additionally, a regional complete street policy will streamline the transportation planning process to connect the efforts of the state and local municipalities to ensure that the region's streets work well for all users.

Bicycle- & Pedestrian-Friendly Designation

The League of American Bicyclists' Bicycle Friendly Community program provides a roadmap to improve conditions for bicycling and guidance on making a community's vision for a better, bikeable community a reality. There are two applications each year for the Bicycle Friendly Community program. Applications include questions on general community profile as well as the community's engineering, education, encouragement, equity & accessibility, and evaluation (5 E's) efforts. The application questions are designed to provide a holistic picture of the applicant community's work to promote bicycling. Once the application is submitted, a group of local cyclists and bike advocates are sent the applications for comments. After local feedback is obtained, the League of American Bicyclists staff reviews each application[xcix]. Communities can receive recognition in one of the following five categories:

- **Platinum:** These are communities that usually have a comfortable and safe bike network along with great bike programs and supportive law enforcement. Cities with this distinction include: Boulder, Colorado; Davis, California; Fort Collins, Colorado; Madison, Wisconsin; and Portland, Oregon.
- **Gold:** Typically, these communities have strong bike cultures but still need to complete their bike network or increase Safe Routes to School programs. Cities with this distinction include: Urbana, Illinois; Minneapolis, Minnesota; and Bloomington, Indiana.
- **Silver:** Communities with the designation are somewhat welcoming to bikes and are easy to navigate but need to work on 2 or 3 of the five E's. Cities with this distinction include: Chicago, Illinois; Evanston, Illinois; Iowa City, IA; and La Crosse, Wisconsin.
- **Bronze:** These communities might not necessarily feel bike friendly but are taking important steps in all five E's but particularly one or two E's. There are 14 Illinois cities with this distinction which include: Aurora, Batavia, Carbondale, DeKalb, Edwardsville, Glenview,

Highland Park, Schaumburg, Springfield, Washington, and Wilmette.

- **Honorable Mention:** These categories are designed for communities that are just stating to address the needs of cyclists.

Similar to the League of American Bicyclists' program, the Walk Friendly Communities is a national recognition program developed to encourage towns and cities across the country to establish a high priority for supporting safer walking environments.

This program is supported and operated by the UNC Highway Safety Research Center and the Pedestrian and Bicycle Information Center (PBIC) which is a national clearinghouse on bicycling and walking which is funded by the U.S. Department of Transportation. The assessment is based on a general community profile, status of walking, planning, education and encouragement, engineering, enforcement, and evaluation. Communities can receive either Platinum, Gold, Silver, or Bronze level recognition with some achieving Honorable Mentions. There are only three cities within Illinois that have achieved recognition. Chicago and Evanston have received Gold Level recognition and Forest Park received a Bronze Level recognition[c].

By encouraging local governments to work towards achieving Bicycle- and/or Pedestrian-Friendly Recognitions, the Rockford Metropolitan Area is making a commitment to increase the safety and prevalence of active transportation in the region. R1 is an eligible applicant of the League of American Bicyclists' Bicycle Friendly Community program.

Funding Programs

The costs associated with constructing the bicycle and pedestrian facilities within this plan will require an extensive amount of financial resources. While most of the recommendations in this plan will be implemented by the local governments in which they are located, the following information identifies two funding sources provided by the State in order to alleviate some of the financial burden for bicycle and pedestrian projects.

Illinois Transportation Enhancement Program (ITEP) is supplemental state funding that allocates resources to well-planned projects that provide and support alternate modes of transportation, enhance the transportation system through preservation of visual and cultural resources and improve the quality of life for members of the communities. State agencies, local governments interest groups and citizens work in partnership with Illinois Department of Transportation (IDOT) to enhance the transportation system and build more livable communities[ci]. ITEP funding can be used for cultural, historic, aesthetic, and environmental improvements related to transportation infrastructure and fall into one of nine eligible categories, including bicycle and pedestrian facilities. To be eligible, projects under the bicycle and pedestrian facilities category must provide transportation from one destination to another; be included in a local, regional, or statewide plan; be constructed in reasonable, useable segments; and include signage in bikeway projects for directions and permitted users. The region currently has three projects utilizing ITEP funding, and projects including the construction of bike paths and design of pedestrian improvements.

Transportation Alternatives (TA) set-aside funding was authorized by the Fixing America's Surface Transportation (FAST) Act in 2015 and renewed in the Infrastructure Investment and Jobs Act (IIJA), signed into law on November 15, 2021. This program provides funding for programs and projects that expand transportation choices with a focus on non-traditional transportation projects. This single funding source served to enhance the transportation system and provided funding for surface transportation projects including bicycle and pedestrian facilities; safe routes to school programs and projects; scenic viewing areas and overlooks; and transportation-related community improvement projects that may include historic preservation, wildlife mortality mitigation, water and environmental quality improvements.[cii] The goal of the Transportation Alternatives Program (TAP) is to allocate resources to well-planned projects that provide and support alternate modes of transportation, enhance the transportation system through preservation of visual and cultural resources and improve the quality of life for members of the communities. TAP requires communities to coordinate efforts to develop and build safe, valuable and functional projects in a timely manner. The region currently has four projects utilizing TAP funding, which include sidewalk and path connections.

Monitoring & Evaluation

Monitoring

System monitoring provides information needed in order to identify the existing and potential problems that the system faces, the solutions to the problems, as well as provide the ability to evaluate the effectiveness of the solutions. The MPO monitors the transportation system through the use of data collection and utilizing level of service objectives, transportation modeling, and Geographic Information Systems (GIS).

Evaluation

Effectiveness evaluations refer to the measures which are used to determine the effectiveness of the recommendations that have been identified. Once data and regional information has been collected in order to monitor the system through various projects, the evaluation of the recommendations can begin. The impacts to the transportation system should reflect the goals, objectives, and align with the performance measures that are outlined in this plan. If recommendations are successful, there should be a correlation to the performance measures identified and observed transportation improvements and related benefits.

Performance Measures

State DOTs, MPOs, and public transportation operators are required by federal law to show how regional and statewide transportation investments are addressing transportation goals and making the transportation system more efficient. In order to do so, organizations must establish performance targets in areas, such as safety, infrastructure/capital condition, congestion, system reliability, emissions, and freight movement. The FHWA and FTA has detailed each performance measure and how targets need to be evaluated and reported. The rules include:

- Highway Safety Improvement Programs (PM1);
- Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program (PM2);
- Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (CMAQ), (PM3);
- Transit Asset Management (TAM); and

The main performance measure that bicycle and pedestrian planning focuses on is safety with emphasis on reducing non-motorized fatalities and serious injuries. The Highway Safety Improvement Program (HSIP) establishes performance measures to carry out the program and assess serious injuries and fatalities on all public roads. FHWA established a total of five performance measures to assess safety: (1) number of fatalities, (2) rate of fatalities per 100 million VMT, (3) number of serious injuries, (4) rate of serious injuries per 100 million VMT, and (5) number of combined non-motorized fatalities and non- motorized serious injuries. State DOTs and MPOs are expected to use the safety data generated to better inform their transportation planning and programming decision-making and use available resources for the greatest possible reduction in fatalities and serious injuries. Safety targets must be established on an annual basis, in coordination with the state DOT, to ensure consistency.

Table 6-2: Regions Performance Measures

Performance Measure	Person-Miles Traveled on the Interstate that are Reliable	Person-Miles Traveled on the Non-Interstate NHS that are Reliable	Truck Travel Time Reliability Index
MPO Baseline	100.0%	92.3%	1.12
IDOT Baseline	80.8%	87.3%	1.30
IDOT 2020 Target	79.0%	85.3%	1.34
IDOT 2022 Target	77.0%	83.3%	1.37

Note: The MPO Policy Committee adopted Resolution 2021-02 (01/29/2021) in support of the IDOT safety targets (annual targets). The MPO Policy Committee adopted Resolution 2021-03 (01/29/2021) for PM2 and 2018-16 (10/25/2018) PM3 in support of the IDOT targets (2 and 4 year targets). Performance measures will continue to be tracked from data made available through the Intergovernmental Agreement between IDOT, RIPC MPO, Boone County, and RMTD as well as through the progression of projects listed within this transportation improvement program.

Source: Region 1 Planning Council

Endnotes

Chapter 2: Bicycle & Pedestrian Planning

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Appendix C

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Appendices

Appendix A

Acronyms and Glossary

Acronyms & Abbreviations

#

3-C: Continuing, Comprehensive, and Cooperative Planning Process

A

AADT: Average Annual Daily Traffic

ACS: American Community Survey

ADA: Americans with Disabilities Act

B

BCCA: Boone County Council on Aging

BCPT: Boone County Public Transportation

BLOS: Bicycle Level of Stress

C

CMAQ: Congestion Mitigation and Air Quality

CMP: Congestion Management Process

CO_2: Carbon Dioxide

D

DOT: Department of Transportation

E

EDD: Economic Development District

EESI: Environmental and Energy Study Institute

F

FAST: Fixing Americas Surface Transportation

FHWA: Federal Highway Administration

FTA: Federal Transit Administration

G

GIS: Geographic Information System

H

HAWK: High-Intensity Activated crossWalk

HSIP: Highway Safety Improvement Program

I

ICE: Internal Combustion Engine

IDOT: Illinois Department of Transportation

IIJA: Infrastructure Investment and Jobs Act

IRIS: Illinois Roadway Information System

ITEP: Illinois Transportation Enhancement Program

L

LBA: Land Bank Authority

LRTP: Long Range Transportation Plan

LTS: Level of Traffic Stress

M

MPA: Metropolitan Planning Area

MPH: Miles Per Hour

MPO: Metropolitan Planning Organization

MTP: Metropolitan Transportation Plan

MSA: Metropolitan Statistical Area

MORPC: Mid-Ohio Regional Planning Commission

MUTCD: Manual on Uniform Traffic Control Devices

N

NACTO: National Association of City Transportation Officials

P

PCPI: Per Capita Personal Income

PM1: Highway Safety Improvement Program

PM2: Performance Measure for Pavement and Bridge Condition

PM3: Performance Measure for System Performance

R

R1: Region 1 Planning Council

RFD: Rockford International Airport

RMTD: Rockford Mass Transit District

RPSD: Regional Plan for Sustainable Development

RRFB: Rectangular Rapid Flash Beacons

RSA: Road Safety Audit

RTC: Rails-to-Trails Conservancy

S

STBG: Surface Transportation Block Grant

SPF: State Planning Fund

SMTD: Stateline Mass Transit District

SOV: Single Occupancy Vehicle

T

TIP: Transportation Improvement Program

TA: Transportation Alternative

TDM: Travel Demand Model

TOD: Transit-Oriented Development

TAP: Transportation Alternatives Program

TAM: Transit Asset Management

TMA: Transportation Management Area

U

UWP: Unified Work Program

UZA: Urbanized Area

V

VMT: Vehicle Miles Traveled

W

WinGIS: Winnebago County Geographic Information System

Glossary of Terms

#

3-C Process: Continuing, comprehensive, and cooperative transportation planning process.

Source: Federal Highway Administration

A

Accessibility: A technique that allows the state to initiate a project using non-federal funds while preserving eligibility to convert to federal-aid funds in the future.

Source: BATIC Institute

Alternative Transportation: Any mode of personal transportation other than a single-occupant vehicle, including biking, walking, carpooling, and public transportation.

Source: MPO Alternative Transportation Committee Bylaws

Arterial: A class of roads serving major traffic movements (high-speed, high volume) for travel between major points.

Source: Federal Highway Administration

Average Annual Daily Traffic (AADT): The total volume of traffic on a highway segment for one year, divided by the number of days in the year.

Source: Federal Highway Administration

B

Bike Line: A portion of roadway designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs.

Source: National Association of City Transportation Officials

Bikesharing: Short-term bike rental, usually for individual periods off an hour or less.

Source: Transportation Research Board

Bollards: A short, post used to divert traffic from an area or road.

Source: Oxford Dictionary

Buffered Bicycle Lanes: Conventional bicycle lanes paired with buffer space to further separate the bicycle lane from motor vehicles and/or the parking lane.

Source: National Association of City Transportation Officials (NACTO)

C

Carpooling: A formal or informal arrangement where commuters share a vehicle for trips from either a common origin, destination, or both, reducing the number of vehicles on the road.

Source: U.S. Department of Transportation

Carsharing: A service that provides members with access to an automobile for intervals of less than a day.

Source: Transportation Research Board

Collector: A street that provides direct access to neighborhoods and arterials.

Source: Federal Highway Administration

Complete Streets: A transportation policy and design approach that requires streets to be planned, designed, and maintained to enable safe, convenient, and comfortable travel for all modes of travel. At the core of the complete streets philosophy is the idea that pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a street.

Source: U.S. Department of Transportation

Congestion: The travel time or delay in excess of that normally incurred under light or free-flow travel conditions.

Source: Transportation Research Board

Congestion Management Process (CMP): A systematic approach applied in a metropolitan region to identify congestion and its causes, propose mitigation strategies, and evaluate the effectiveness of implemented strategies.

Source: Federal Highway Administration

Congestion Mitigation and Air Quality Improvement Program: The CMAQ program provides funds to States for transportation projects designed to reduce traffic congestion and improve air quality, particularly in areas of the country that do not attain national air quality standards.

Source: U.S. Department of Transportation

Conventional Bicycle Lane: Designated portion of the roadway for bicyclists, delineated through striping, signage, and/or pavement markings. Bicycle lanes are typically located along the right side of the roadway between the travel lane and either the curb, edge of the roadway, or parking lane.

Source: National Association of City Transportation Officials (NACTO)

Curb extensions: Street treatments designed to decrease the width of the roadway in order to protect pedestrians and other vulnerable users.

Source: Issuu Inc.

D

Demand Response Public Transportation: A transit mode comprised of passenger cars, vans or small buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations.

Source: Federal Transit Administration

E

Electric Vehicle (EV): A vehicle that has an electric motor instead of an internal combustion engine.

Source: U.S. Department of Energy

Emissions: Harmful, polluting gases that affect the Earth's atmosphere.

Source: U.S. Environmental Protection Agency

Ethnicity: The U.S. Census Bureau adheres to the U.S. Office of Management and Budget's (OMB) definition of ethnicity. There are two minimum categories for ethnicity: Hispanic or Latino and Not Hispanic or Latino.

Source: U.S. Census Bureau

F

First Mile: The movement of people from their point of origin to a public transportation hub.

Source: Federal Transit Administration

Fixed Route Public Transportation: Services provided on a repetitive, fixed schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed route trip serves the same origins and destinations.

Source: Federal Transit Administration

G

Green House Gas: Gases that trap heat in the upper atmosphere are defined as greenhouse gases (e.g. Carbon Dioxide, Methane, Nitrous Oxide, and Fluorinated Gases).

Source: U.S. Environmental Protection Agency

L

Level of Service (LOS):

1. A qualitative assessment of a road's operating conditions. For local government comprehensive planning purposes, level of service means an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of service indicates the capacity per unit of demand for each public facility.
2. This term refers to a standard measurement used by transportation officials which reflects the relative ease of traffic flow on a scale of A to F, with free-flow being rated LOS-A and congested conditions rated as LOS-F.

Source: Federal Highway Administration

Livability: A livable community provides more transportation choices that are safe, reliable, and economical; promotes equitable, affordable housing options; enhance economic competitiveness; supports and targets funding toward existing communities; and values communities and neighborhoods.

Source: Federal Highway Administration

M

Median Household Income: The income level earned by a given household, where half of the households earn more and half earn less.

Source: U.S. Census Bureau

Metropolitan Planning Area (MPA): The geographic area in which the metropolitan transportation planning process required by 23 U.S.C. 134 and section 8 of the Federal Transit Act (49 U.S.C. app. 1607) must be carried out.

Source: Federal Highway Administration

Metropolitan Planning Organization (MPO): A regional policy body, required in urbanized areas with populations over 50,000, and designated by locals officials and the governor of the state to carry out the metropolitan transportation requirements of federal highway and transit legislation.

Source: Federal Highway Administration

Metropolitan Transportation Plan (MTP): The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area.

Source: Federal Highway Administration

Metropolitan Statistical Area (MSA): The county or counties (or equivalent entities) associated with at least one urbanized area with a population of at least 50,000, plus adjacent counties having a high degree of social economic integration with the core as measured through commuting ties.

Source: U.S. Census Bureau

Micro-mobility: Shared-use fleets of small, fully or partially human-powered vehicles such as bikes, e-bikes and e-scooters. These vehicles are generally rented through a mobile app or kiosk, are picked up and dropped off in the public right-of-way, and are meant for short point-to-point trips.

Source: National Association of City Transportation Officials (NACTO)

Mixed-Use Development: A series of complementary uses such as residential, retail, commercial, employment, civic, and entertainment uses in close proximity - sometimes in the same building.

Source: Municipal Research and Services Center

Mobility: The ability to move or be moved from place to place.

Source: Federal Highway Administration

Mobility as a Service: A customer-focused interface that incorporates multiple mobility options into a single, intuitive and seamless platform or app that allows for choosing the right option, scheduling and paying for that option.

Source: National Center for Mobility Management

Multimodal: The availability of transportation options using different modes within a system or corridor.

Source: Federal Highway Administration

N

National Highway System (NHS): The system of highways designated and approved in accordance with the provisions of 23 U.S.C. 103(b).

Source: Federal Highway Administration

P

Per Capita Income: The mean income earned per person (including every man, woman, and child) within a region.

Source: U.S. Census Bureau

Performance Measures: Indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel, and accident rates. Used as feedback in the decision-making process.

Source: Federal Highway Administration

PM1: Performance measure that focuses on safety by assessing fatalities and serious injuries. The performance measure supports Highway Safety Improvement Program with the goal of significantly reducing traffic fatalities and serious injuries on all public roads.

Source: Federal Highway Administration

PM2: "Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program".

Source: Federal Register

PM3: "Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program".

Source: Federal Register

Population Density: Total population within a geographic entity (for example, United States, states, county, place) divided by the land area of the entity measured in square kilometers or square miles.

Source: U.S. Census Bureau

Public Participation: The active and meaningful involvement of the public on the development of transportation plans and programs.

Source: Federal Highway Administration

R

Race: A person's self-identification with one or more social groups.

Source: U.S. Census Bureau

Recreational Cyclists: Those who use a bicycle for pleasure or short trips.

Source: Department of Transportation & Communication Management Science, National Cheng Kung University, 1 University Rd., Tainan, 701, Taiwan

Region 1 Planning Council (R1): A special-purpose, regional government agency providing cross-jurisdictional, government-to-government collaborative planning across Northern Illinois.

Source: Region 1 Planning Council

Reliability: The degree of certainty and predictability in travel times on the transportation system. Reliable transportation systems offer some assurance of attaining a given destination within a reasonable range of an expected time.

Source: Federal Highway Administration

Ridesharing: A formal or informal arrangement where commuters share a vehicle for trips from a common origin, destination, or both.

Source: Federal Highway Administration

Roundabout: A circular intersection where drivers move counter clockwise around a central island, and traffic entering the roundabout must yield to the circling traffic.

Source: Illinois Department of Transportation

S

Separated Bicycle Lanes: Lanes physically separated from motor vehicles by a vertical delineation, such as a parking lane, bollards, landscaped buffers, or curbs.

Source: National Association of City Transportation Officials (NACTO)

Shared Lane: Any roads with "sharrows" to indicate a shared lane environment between automobiles and bicycles.

Source: National Association of City Transportation Officials (NACTO)

Shared Use Mobility: Transportation services that are shared among users, including public transit; taxis and limos; bikesharing; carsharing (round-trip, one-way, and personal vehicle sharing); ridesharing (carpooling, van-pooling); ridesourcing; scooter sharing; shuttle services; neighborhood jitneys; and commercial delivery vehicles providing flexible goods movement.

Source: Federal Highway Administration

Shared Use Path: A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

Source: National Association of City Transportation Officials (NACTO)

Speed Cushions: Are either speed humps or speed tables, that reduce the speed of single-occupancy vehicles while still ensuring that emergency vehicles can navigate safely through by providing wheel cutouts.

Source: National Association of City Transportation Officials (NACTO)

Stakeholders: Individuals and organizations involved in or affected by the transportation planning process. Include federal/state/local officials, MPOs, transit operators, freight companies, shippers, and the general public.

Source: Federal Highway Administration

T

Transportation Management Area (TMA): An urbanized area with a population over 200,000 (as determined by the latest decennial census) or other area when TMA designation is requested by the Governor and the MPO (or affect local officials), and officially designated by the Administrators of the Federal Highway Administration and the FTA.

Source: Federal Highway Administration

Traffic Calming: Traffic calming consists of physical design and other measures put in place on existing roads to reduce vehicle speeds and improve safety for pedestrians and cyclists.

Source: U.S. Department of Transportation

Travel Demand Model: A program or set of computer programs and data which are assembled and usually run by professionals who specialize in travel forecasting.

Source: Ohio Department of Transportation

U

Urbanized Area (UA): An area consisting of a densely developed territory that contains a minimum residential population of at least 50,000 people.

Source: U.S. Census Bureau

Utilitarian: Cycling done as a means of transportation rather than recreational or leisure.

Source: Albany Bicycle Coalition

V

Vehicle-miles Traveled (VMT): The number of miles traveled by vehicles for a period of 1 year.

Source: Federal Highway Administration

Appendix B

Community Engagement

Community engagement was a critical part in the development of the Plan. Engagement events and public surveys created opportunities for the public to provide input which occurred throughout the planning process.

Metropolitan Planning Organization staff were at the Rockford City Market on September 9, 2023. At the event, the public was able to come up and provide feedback on locations that had safety, congestion, access issues or locations that needed general improvements for bicycle and pedestrian facilities based on their experiences. Staff was also able to discuss with the public what they would want bicycle and pedestrian facilities the community would like to see across the region.

Additionally, the MPO released an online public survey which was available from September 2022 to November 2022. The purpose of the survey was to help guide improvements to sidewalks, intersections, and streets in order to make it easier for all users to bike and walk around the region. The survey helped to identify areas and facilities that are comfortable and uncomfortable to use, why walking or bicycling may be used throughout the region and what improvements should be prioritized.

The survey materials can be found below.

Figure B-1: Bicycle and Pedestrian Plan Community Survey

Bicycle and Pedestrian Plan: Walking and Biking in the Region

Tell us about your walking and biking preferences.

1. In a typical month with nice weather, how often do you **walk** in the Rockford Region?

- ○ At least Daily
- ○ A Few Times a Week
- ○ Weekly
- ○ A Few Times a Month
- ○ Never

2. How far are you willing to **walk** to reach a destination?

- ○ Less than a 1/2 mile
- ○ 1/2 mile to 1 mile
- ○ 1 to 2 miles
- ○ Greater than 2 miles
- ○ Other - Please Specify

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

3. How likely are you to **walk** in the Rockford Region in bad weather conditions (ex. rain, snow, cold)?

- ○ Likely
- ○ Somewhat Likely
- ○ Somewhat Unlikely
- ○ Unlikely
- ○ Never

---

4. In a typical month with nice weather, how often do you **bike** in the Rockford Region

- ○ At least daily
- ○ A few times a week
- ○ Weekly
- ○ A few times a month
- ○ Never

---

5. How far are you willing to **bike** to reach a destination?

- ○ Less than 1/2 mile
- ○ 1/2 to 1 mile
- ○ 1 to 2 miles
- ○ 2 to 5 miles
- ○ Greater than 5 miles
- ○ I don't bike
- ○ Other (Please Specify)

---

6. How likely are you to **bike** in the Rockford Region in bad weather conditions (ex. rain, snow, cold)?

- ○ Likely
- ○ Somewhat LIkely
- ○ Somewhat Unlikely
- ○ Unlikely
- ○ Never

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

7. Which resources do you currently use to identify**bike** routes when riding in the Rockford Region?*Select all that apply*

- ☐ Bike route signs on streets
- ☐ Google Maps
- ☐ Map My Ride
- ☐ Strava
- ☐ Rockford Regional Bike Map
- ☐ Ride with GPS
- ☐ Komoot
- ☐ Other (Please Specify)

How comfortable are these walking and biking facilities?

8. Please rate how comfortable you would feel using each facility below**while walking in the Rockford Region**

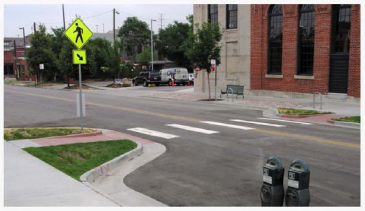
	Very Comfortable	Comfortable	Neutral	Uncomfortable	Very Uncomfortable
High Visibility Crosswalk 	☐	☐	☐	☐	☐
Curb Extension 	☐	☐	☐	☐	☐

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Pedestrian Refuge Island

Underpass

Shared Path

Comments

9. Please rate how comfortable you would feel using each facility type below**while biking the the Rockford Region.**

	Very Comfortable	Comfortable	Neutral	Uncomfortable	Very Uncomfortable
Sharrow 					
Wide Shoulder 					

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Signed Bike Route

Bike Lane

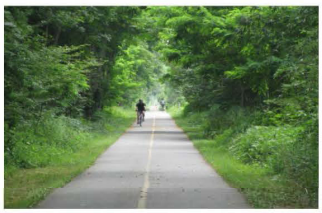
Buffered Bike Lane

Green Bike Lane

Protected Bike Lane

Side Path

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Side Path 	☐	☐	☐	☐	☐
Trail 	☐	☐	☐	☐	☐
Marked Intersection 	☐	☐	☐	☐	☐

Comments

Questions about Walking in the Rockford Region

10. In a typical month with ideal conditions, which destination(s) do you walk to in the Rockford Region and how often do you walk to them? If you do not walk, select never for each option.

	At least daily	Several times per week	Weekly	Several times per month	Never
Work	☐	☐	☐	☐	☐
Downtown Rockford	☐	☐	☐	☐	☐
Downtown Belvidere	☐	☐	☐	☐	☐
Riverfront Trail	☐	☐	☐	☐	☐
RMTD Bus Stops	☐	☐	☐	☐	☐
Local Forest Preserve(s)	☐	☐	☐	☐	☐
School	☐	☐	☐	☐	☐
Local Park(s)	☐	☐	☐	☐	☐
Public Library	☐	☐	☐	☐	☐
Run errands	☐	☐	☐	☐	☐
Visit family or friends	☐	☐	☐	☐	☐
No particular destination, for exercise	☐	☐	☐	☐	☐
Enter another option	☐	☐	☐	☐	☐

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

11. How much do the following factor(s) along a route affect your decision to walk to a destination?

	A lot	A little	Not at all
Presence of sidewalks	☐	☐	☐
Presence of trails or paths	☐	☐	☐
Speed of traffic along my route	☐	☐	☐
Ease of crossing at intersections (crossing width, traffic control device, etc.)	☐	☐	☐
Accommodations for people with disabilities	☐	☐	☐
Clear sidewalks (no debris, obstructions, snow, etc.)	☐	☐	☐
Presence of street lights	☐	☐	☐
Presence of shade trees	☐	☐	☐
Presence of seating areas	☐	☐	☐
Enter another option	☐	☐	☐

12. If conditions were improved for the following items, would you walk more often?

	Yes	No	Maybe
Presence of sidewalks	☐	☐	☐
Presence of trails or paths	☐	☐	☐
Speed of traffic along my route	☐	☐	☐
Ease of crossing at intersections (width, traffic control devices, etc.)	☐	☐	☐
Accommodations for people with disabilities	☐	☐	☐
Clear sidewalks (no debris, obstructions, snow, etc.)	☐	☐	☐
Presence of street lights	☐	☐	☐
Presence of shade trees	☐	☐	☐
Presence of seating areas	☐	☐	☐
Enter another option	☐	☐	☐

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Questions about biking in the Rockford Region

13. In a typical month with ideal conditions, which destinations(s) do you bike to in the Rockford Region and how often do you bike to them? If you do not bike, select never for each option. I bike to....

	At least daily	Several times a week	Weekly	Several times a month	Never
Work	☐	☐	☐	☐	☐
Downtown Rockford	☐	☐	☐	☐	☐
Downtown Belvidere	☐	☐	☐	☐	☐
Riverfront Trail	☐	☐	☐	☐	☐
RMTD Bus Stop	☐	☐	☐	☐	☐
Local Forest Preserve(s)	☐	☐	☐	☐	☐
School	☐	☐	☐	☐	☐
Local Parks	☐	☐	☐	☐	☐
Run Errands	☐	☐	☐	☐	☐
Visit Family or Friends	☐	☐	☐	☐	☐
No Particular Reason	☐	☐	☐	☐	☐
Enter another option	☐	☐	☐	☐	☐

14. How much do the following factor(s) along a route influence your decision to bike to a destination?

	A lot	A little	Not at all
Presence of pavement markings (bike lanes, etc.)	☐	☐	☐
Presence of trails and paths	☐	☐	☐
Condition of roads on my route (debris, potholes)	☐	☐	☐
Comfort of crossings at intersections (easy to cross, traffic controls, etc.)	☐	☐	☐
Presence of bike racks	☐	☐	☐
Presence of wayfinding signage on streets	☐	☐	☐
Knowledge of comfortable local routes	☐	☐	☐
Presence of streetlights	☐	☐	☐

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Speed of traffic	☐	☐	☐
Knowledge of how to bike in traffic	☐	☐	☐
Physical Barrier (median, planters etc.)	☐	☐	☐
Comfort of biking with traffic	☐	☐	☐
Enter another option	☐	☐	☐

15. If conditions for each of the following factors were improved along your route, would you bike more often?

	Yes	No	Maybe
Presence of pavement markings (bike lanes, etc.)	☐	☐	☐
Presence of trails and paths	☐	☐	☐
Condition of roads on my route (debris, potholes)	☐	☐	☐
Comfort of crossings at intersections (easy to cross, traffic controls, etc.)	☐	☐	☐
Presence of bike racks	☐	☐	☐
Presence of wayfinding signage on streets	☐	☐	☐
Knowledge of comfortable local routes	☐	☐	☐
Presence of streetlights	☐	☐	☐
Speed of traffic	☐	☐	☐
Knowledge of how to bike in traffic	☐	☐	☐
Physical Barrier	☐	☐	☐
Enter another option	☐	☐	☐

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

Routes, destinations, and intersections

16. Name up to three **destinations** you would like to see better walking or biking access in the Rockford Region.

Destination 1

Destination 2

Destination 3

17. Name up to three **intersections** you think are most difficult to cross as a pedestrian or cyclist.

Intersection 1

Intersection 2

Intersection 3

18. Name up to three **streets** you think are difficult for walking or biking.

Street 1

Street 2

Street 3

Tell us about yourself and receive updates about the plan.

19. What is your zip code?

20. Please tell us the zip code in which you work or attend school.

21. Please tell us your age.

- 17 or younger
- 18 to 24
- 25 to 34

Figure B-1: Bicycle and Pedestrian Plan Community Survey Cont.

- ○ 35 to 44
- ○ 45 to 54
- ○ 55 to 64
- ○ 64 to 74
- ○ 74 or older

22. Please tell us your gender.

- ○ Male
- ○ Female
- ○ Non-binary
- ○ Prefer not to answer

23. What type of cyclist do you classify yourself as? (Check all that apply)

- ☐ Avid
- ☐ Casual
- ☐ Recreational
- ☐ Commuter
- ☐ Weekend Warrior
- ☐ Racer

24. Would you like to receive notifications on meetings an plan progress?

- ○ Yes
- ○ No

25. Please leave your name and email address below

Name

Email Addresss

Thank You!

Thank you for taking our survey. Your response is very important to us.

Appendix C
Analysis Methodology

Bicycle Level of Stress

A bicycle level of traffic stress was developed for the Bicycle and Pedestrian Plan to determine the level of traffic stress along street segments functionally classified as collector and above in the Rockford Urbanized Area. Level of Traffic Stress (LTS) is an approach which quantifies the amount of discomfort people experience when bicycling close to traffic. Mineta Transportation Institute and San Jose State University[ciii] developed the bicycle level of traffic stress analysis in 2012, the analysis assigned a numeric value to streets based on attributes such as traffic speed, vehicle volume, number of lanes, parking and others. The MPO made several modifications to Mineta's version of the bicycle level of traffic stress in order to best fit the region's infrastructure inventory and available data. The modifications were to the attributes and scoring values.

When a street has a moderate to high level of stress, it can indicate that bicycle infrastructure such as separated bicycle lanes or shared use paths are needed to make the place more comfortable for bicyclists to utilize.

Methodology

The initial process for the bicycle level of stress was collecting data for each attribute and entering it all into GIS. Each attributes score was calculated to produce a composite score for each primary roadway in the Adjusted Urbanized Area. Using GIS, the MPO was able to run calculations and display the results.

Below are descriptions for the factors and categories used to determine demand.

Posted Speed Limit

The posted speed limit of the roadway effects both real and perceived safety concerns for bicyclists on that segment of roadway. This category was weighted heavily due to the risk speeds put on bicyclists. Road segments with lower speeds received less points than roadways with higher speeds. Posted speed limits were collected from the Illinois Roadway Information System (IRIS).

Lane Width

Roads with a wider lane enable higher vehicle speeds, which makes bicycling along the roadway less comfortable and more dangerous. Road segments with smaller lanes received less points than roadways with wider lanes. Width of vehicle lanes were collected from IRIS.

Number of Lanes

Roads with a higher number of lanes enable higher vehicle speeds, which makes bicycling along the roadway less comfortable and more dangerous. Road segments with lower number of lanes received less points than roadways with higher number of lanes. Number of vehicle lanes were collected from IRIS.

Traffic Volume

Higher motor vehicle volumes can create noise and pollutants that reduce bicyclists comfort. Road segments with lower average annual daily traffic (AADT) counts received less points than roadways with higher AADT counts. Annual Average Daily Traffic counts were collected from IRIS.

Truck Volume

A high volume of trucks can reduce the comfort of within close proximity to the travel lanes. This category was weighted heavily due to the high-risk bicyclists face with truck traffic. If a road had a high truck volume it received the most points for that category. Average annual daily truck volume consisted of heavy commercial vehicles was collected from IRIS.

Shoulder Width

Shoulders can often provide a space for bicyclists to utilize that further separates them from motor vehicle traffic, especially in rural areas. Roadways with larger shoulder widths received less points than roadways with smaller shoulder widths. Shoulder widths information was collected from IRIS.

Shoulder Type

For shoulders to be an appropriate place for bicyclists to utilize along roadways, they need to be an appropriate material. Shoulder type information includes if the shoulder is either natural soil, sod, gravel, concrete or consists of a curb/gutter. Shoulder types received less points if they were paved and lower points for unpaved material. Information for shoulder materials were collected from IRIS.

Pavement Condition

Pavement condition impacts a bicyclists comfortability. Roadways with higher pavement conditions and classified as excellent received less points than roadways that classified as poor condition. Pavement condition ranking was collected from IRIS.

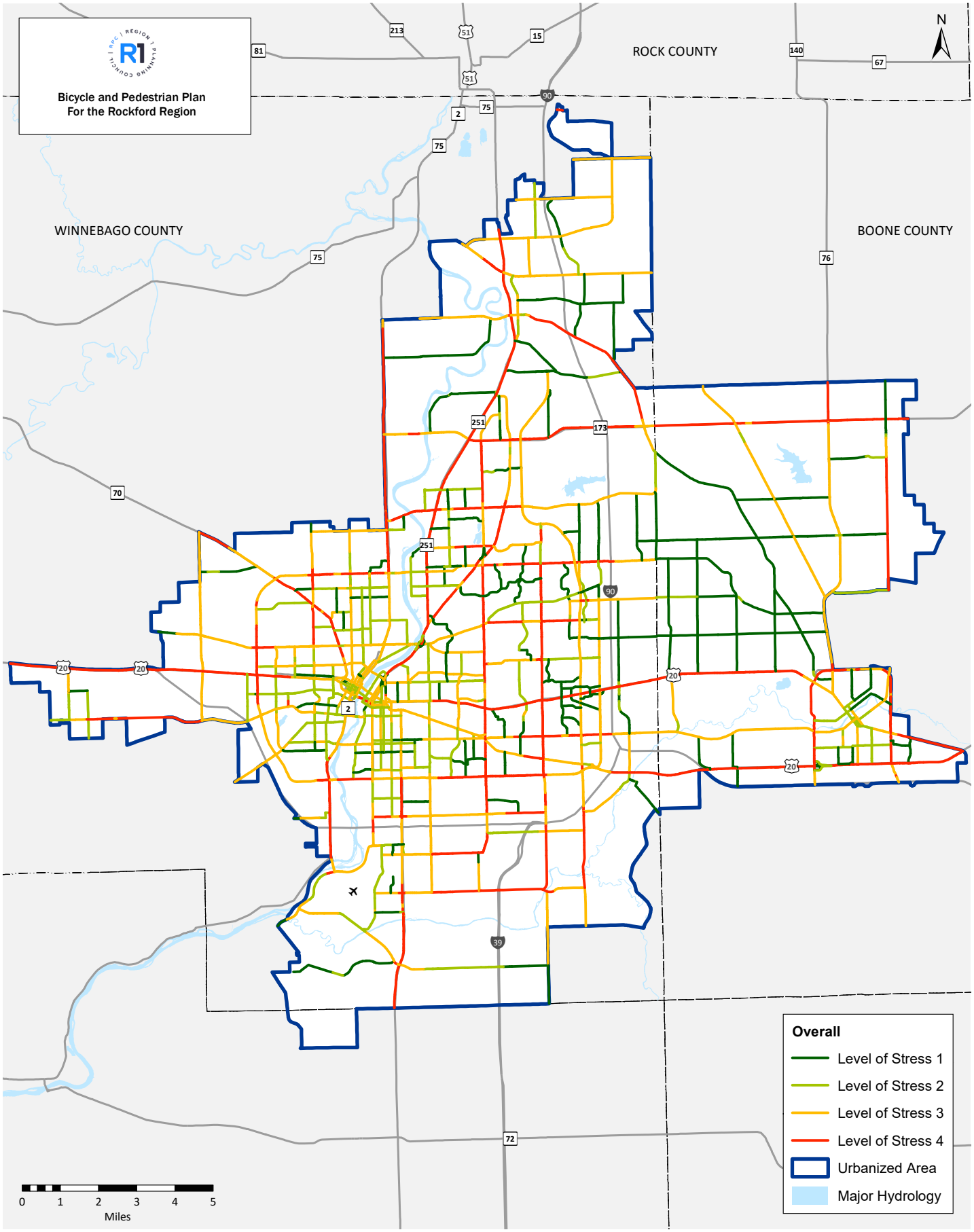
Parking

Vehicles entering and leaving a parking space as well as motorists exiting their car can cause additional conflict points for bicyclists moving past. Roadways with on street parking received lower scores than roadways that had parallel parking or diagonal parking available. Parking information was collected from IRIS.

Key Findings

Map C-1 illustrate the results of the analysis, based on factor scores and weights. The results of the composite scores of roadway characteristics four different categories of overall bicycle level of traffic stress. The product of each segment's score fell into one of four categories: low stress (0-10 points), Fair stress (11-20 points), moderate stress (21-30 points) or high stress (31-41 points).

Map C-1: Bicycle Level of Traffic Stress Analysis Results



Source: Region 1 Planning Council

Pedestrian Suitability Analysis

A pedestrian suitability index was developed for the Bicycle and Pedestrian Plan to determine the quantity and quality of the pedestrian facilities along the primary street segments and intersections in the Rockford Urbanized Area (UZA). Modified from Memphis' version of the Pedestrian Suitability Index, the index provides a qualitative method for assessing the pedestrian environment related to the demand, traffic patterns and design. The Pedestrian Suitability Index analyzes only major roadways in the UZA, e.g. roads functionally classified as Collector or above.

The Pedestrian Suitability Index (PSI) uses both supply and demand factors to quantify the pedestrian walkability of given roadway or intersection. It combines key data and attributes of the physical infrastructure (supply) with pedestrian generator data (demand) to score and compare an urbanized area's transportation network.

Pedestrian Suitability Index (PSI) and other similar models have been used in a variety of bicycle and/or pedestrian related plans all across the country. The version that most heavily influenced this plan's analysis was used in the Memphis Pedestrian School Safety Action Plan (2015) written by Alta Planning and Design. However, the MPO made several significant modifications to Alta's version of the PSI in order to best fit the region's infrastructure inventory and available data. The modifications were to the demand analysis, supply criteria, organization of the category groupings, and the scoring values.

A three-part geographic information system (GIS) analysis was used to complete the Pedestrian Suitability Index: a demand analysis, pedestrian network analysis, and an intersection analysis.

The demand analysis identifies the expected pedestrian activity areas by utilizing geographic data related to pedestrian attractors and generators. Areas that contain a greater number of people living or working within them are more likely to have more people walking. The supply analysis for the PSI was separated into two parts: the pedestrian network analysis and the intersection analysis. Both parts produced separate results for the suitability of the given roadway segment, intersection, or census tract based on various characteristics that influence the ability for pedestrians to move safely and comfortably. The supply analysis results are individually mapped in the Existing Conditions: Pedestrian Network section of the Plan.

In total, the model's results display, quantify, and rank the pedestrian network based upon walkability and demand. It locates areas where there are gaps in the network and allows for a more analytically driven prioritization effort of future infrastructure investments that could have the greatest impacts network-wide.

Demand Analysis

A large component of a well-connected network is how residents are able to get from their homes to parks, grocery stores, social service centers, work, and to see friends and relatives. The Demand Analysis encompasses all of these influences by analyzing where concentrations of people live and work, in conjunction with proximity to significant pedestrian trip generators and equity considerations. The combination of these two calculations was organized into six indicators: live, work, equity, learn, play/shop, and transit. Table C-1 shows the factors and their associated scores.

Methodology

The initial process for the demand analysis was collecting data for each factor from the various sources and entering in all into GIS. Each factor was scored and grouped into the six overarching categories, as shown in Table C-1. Each category's score was calculated to produce a composite score for each U.S. Census Block in the R1 Adjusted Urbanized Area. Using GIS, R1 was able to run calculations and display the results.

Below are descriptions for the factors and categories used to determine demand.

Live

Population numbers used in the analysis was collected from the 2019 U.S. Census American Community Survey at block group level. The total population for each census block group was divided by lane area to obtain population density. Quartiles were then calculated, if a road segment intersected a census block group in the 75th quartile it received six points, 50th quartile received four points, 25th quartile received two points, and less than 25th quartile received zero points.

Work

Employment density was collected from the Rockford MPO's travel demand model 2020 data. The total employment for each census block group was divided by land area to obtain employment density. Quartiles were than calculated, if a road segment intersected a census block group in the 75th quartile it received six points, 50th quartile received four points, 25th quartile received two points, and less than the 25th quartile received zero points.

Additionally, block groups with significant employers' information was collected by the Rockford Area Economic Development Council. Census blocks where assigned points if a significant employer was located within its boundaries.

Learn

The location of schools was based on information from the Winnebago County Geographic Information System (WinGIS) and R1. It was used as another potential attractor for pedestrians. Census blocks were assigned points if higher education facilities, high schools, middle schools, and elementary schools fell within its boundaries. Each educational facility was worth one point. For example, if an elementary school and college satellite location were located within a single census block, it received two points.

Play/Shop

This category was broken into five potential pedestrian generators: major generators, community services, medical facilities, retail and shopping centers, and grocery stores. The total number of each generator that is located within that census block equals the total number of points it received.

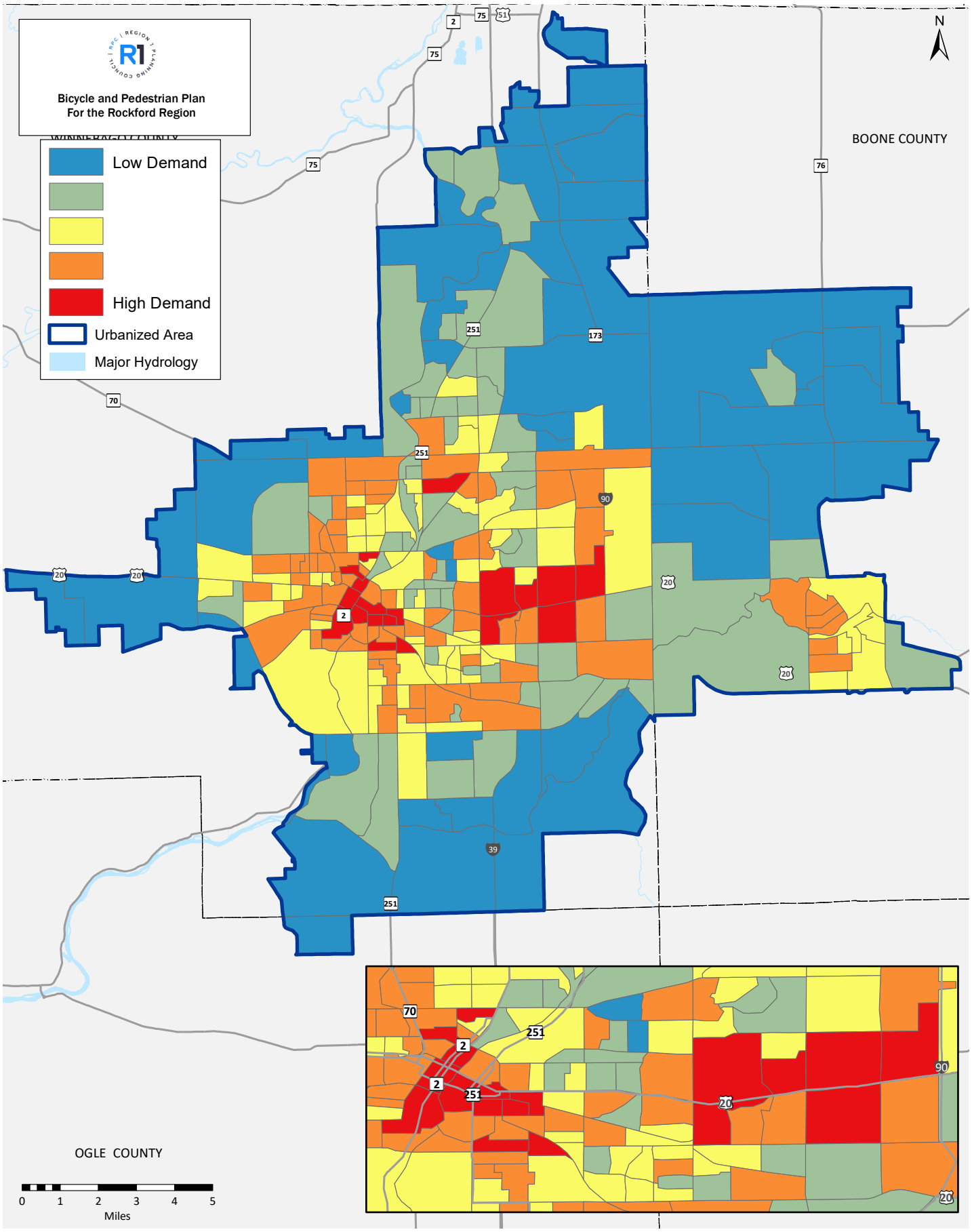
Table C-1: Demand Analysis Factors and Scores

	Input	Metric	Item Scoring
Live	Population Density	Population density greater than (> 75th percentile)	6
		Population density between (50-75th percentile)	4
		Population density between (25-50th percentile)	2
		Population density less than (25th percentile)	0
Work	High Density Employment	Employment density greater than (> 75th percentile)	6
		Employment density between (50th-75th percentile)	4
		Employment density between (25-50th percentile)	2
		Employment density less than (25th percentile)	0
	Significant Employment Center	Within Block Group	4
		Outside of Block Group	0
Equity	Low-Income	Within Block Group	4
		Outside of Block Group	0
	Seniors	Within Block Group	4
		Outside of Block Group	0
	Minority	Within Block Group	4
		Outside of Block Group	0
	Low English Proficiency	Within Block Group	4
		Outside of Block Group	0
	No Vehicle Access	Within Block Group	4
		Outside of Block Group	0
	Hispanic/ Latino	Within Block Group	4
		Outside of Block Group	0
Learn	Higher Education	Feature located in block	1
	Elementary School	Feature located in block	1
	Middle School	Feature located in block	1
	High School	Feature located in block	1

	Input	Metric	Item Scoring
Play & Shop	Major Generators	6 or more located within block	11
		5 located within block	9
		4 located within block	7
		3 located within block	5
		2 located with block	3
		1 located within block	1
		None located within block	0
	Community Services	5 or more located within block	9
		4 located within block	7
		3 located within block	5
		2 located within block	3
		1 located within block	1
		None located within block	0
	Medical Facilities	6 or more located within block	11
		5 located within block	9
		4 located within block	7
		3 located within block	5
		2 located within block	3
		1 located within block	1
		None located within block	0
	Grocery Stores	5 or more located within block	9
		4 located within block	7
		3 located within block	5
		2 located within block	3
		1 located within block	1
		None located within block	0
Transit	Bus Stops	Within Block Group	4
		Outside of Block Group	0

Source: Region 1 Planning Council

Map C-2: Demand Analysis Results- Urbanized Area



Source: Region 1 Planning Council

Major Generators

Tourist locations and counts were provided through the Rockford Area Convention and Visitors Bureau and Visit Northern Illinois websites. Census blocks where assigned points based on the number of major generators located within its boundaries.

Retail/Entertainment

Retail/Entertainment locations for Winnebago County were defined by WinGIS as points of interest. Retail and entertainment locations for Boone and Ogle Counties were identified by R1 through research.

Community Services

Community services were defined by WinGIS as points of interest in Winnebago County, while community services in Boone and Ogle Counties were identified by the MPO through research.

Medical Facilities

The large main campuses of the three major hospitals were used as the designated hospital locations and small clinics and satellite offices were included in this particular analysis. Census blocks where assigned points based on the number of medical facilities located within its boundaries.

Transit

The final data source used was bus stop locations based on information collected by R1, using Rockford Mass Transit District's designated stops and aerial photos. If at least one bus stop was located in that census block, then it received a total score of 1. Conversely, if there were no bus stops in the block, it received a 0.

Key Findings

The results of the demand analysis in Map C-2. The scores for the U.S. Census Block within the Rockford Region randed between 0 to 49. Those values are then combined with the supply analysis results to illustrate where there are gaps in the existing and planned network, in addition to what infrastructure investments could have the greatest impacts region-wide.

Supply Analysis

To complement the demand analysis, the pedestrian supply analysis examines the design characteristics and the traffic patterns of the roadway, as well as the pedestrian environment adjacent to the roadway.

Methodology

Similar to the Demand Analysis, major roads within the urbanized area were given a score between 0 to 100 based on various roadway and sidewalk characteristics, which can be found to the right. Higher scores indicate a more suitable environment for pedestrians. Major roadways, with a functional classification of Collector or above, were broken into street segments between two given intersections.

The factors for the pedestrian network suitability were grouped into two infrastructure categories: roadway characteristics, with a maximum score of 70 points and pedestrian space, with a maximum score of 30 points. Table C-2 shows each of the factors and its assigned score.

Table C-2: Pedestrian Network Analysis Factors & Scores

	Input	Score Method	Item Scoring
Roadway Characteristics	Posted Speed Limit	< = 25 mph	10
		30 - 35 mph	5
		> = 40 mph	0
	Average Speed Limit	< = 25 mph	10
		30 - 35 mph	5
		> = 40 mph	0
	Number of Lanes	< = 2 lanes	10
		3 - 4 lanes	5
		> = 5 lanes	0
	Truck Volume	< = 5,000 AADT	10
		5,001 - 9,000 AADT	8
		9,001 - 15,000 AADT	5
		> 15,000 AADT	0
	Traffic Volume	< = 5,000 AADT	10
		5,001 - 9,000 AADT	8
		9,001 - 15,000 AADT	5
		> 15,000 AADT	0
	Width of Roadway	< = 15'	10
		16 - 30'	5
		> = 31'	0
	Intersection Density	< = 10	10
		11 - 20	5
		> = 21	0
Pedestrian Space	Sidewalk Presence	Complete Sidewalk	10
		Partial Sidewalk	8
		Little Sidewalk	5
		No Sidewalk	0
	Sidewalk Width	> = 10'	10
		5 - 10'	5
		< 5'	0
	Sidewalk Buffer	Butter	10
		No buffer	0

Source: Region 1 Planning Council

Roadway Characteristics

The following list provides factor descriptions and sources for each roadway characteristics:

Posted Speed Limit

The posted speed limit of the roadway effects both real and perceived safety concerns for pedestrians on that segment of roadway. Road segments with lower speeds received more points than roadways with higher speeds. Posted speed limits were collected from the Illinois Roadway Information System (IRIS).

Average Speed Limit

Despite posted speed limits, many roadways experience higher rate of speeds from people going over the speed limit which leads to an increased crash and severe injury risk. Road segments with lower average speeds received more points than roadways with higher speeds. Average speed limits were collected from StreetLight Data.

Vehicle Lanes

Roads with a higher number of lanes enable higher vehicle speeds, which makes walking less comfortable. Road segments with lower number of lanes received more points than roadways with higher number of lanes. Number of vehicle lanes were collected from IRIS.

Truck Volume

A high volume of trucks can reduce the comfort of pedestrians within close proximity to the travel lanes. If a road had a high truck volume it did not receive points. Truck volume was collected from StreetLight Data.

Traffic Volume

Higher motor vehicle volumes can create noise and pollutants that reduce pedestrian comfort. Road segments with lower average daily traffic (ADT) counts received more points than roadways with higher ADT counts. Annual Average Daily Traffic counts were collected from IRIS.

Roadway Width

Wide roadways with large lanes enable higher vehicle speeds and makes walking along those roadways uncomfortable. Road segments with that are wider received more points than segments with smaller widths.

Intersection Density

Street intersection density was utilized to determine the walkability of the segment by identifying the number of street and driveway intersections due to reduced conflict points. Information was collected through aerial maps from WinGIS, Google Street View, and IRIS. Roadway segments with higher intersection densities received less points than roadways with less intersections.

Pedestrian Space

The following list provides factor descriptions and sources for each of the pedestrian space characteristics:

Presence of Sidewalk

Sidewalks provide a dedicated facility for pedestrians separated from the roadway. For this analysis, sidewalk presence was divided into four subcategories: complete, partial, little, or none. "Complete sidewalks" were sidewalks present along both sides of the street for the entirety of the street segment. "Partial sidewalks" have either one side of the street entirely covered in sidewalk or at least 50% of both sides of the street with sidewalks. "Little sidewalk" was any sidewalk that was present along the segment, but equaled less than 50% of both sides of the street. Finally, "no sidewalk" signified that there was a total absence of any sidewalk anywhere along the street segment. Sidewalk presence was determined using aerial maps from WinGIS and Google Street View.

Width of Sidewalk

A sidewalk width of five feet is the accepted standard for the Americans with Disabilities Act (ADA). Five feet allows wheelchair users to turn around and pass other pedestrians who may be on the sidewalk. While this is a minimum, pedestrians tend to feel safer on wider sidewalks due to a sense of wider separation from vehicle travel lanes. As such, five feet was used as a standard for the sidewalk analysis. Road segments with wider sidewalks, at least ten feet wide, received the highest amount of points. While sidewalks between five and 10 feet received some points and sidewalks with widths less than five feet did not receive points. Sidewalk width was determined using aerial maps from WinGIS and Google Street View.

Sidewalk Buffer

On-street parking or a landscaped buffer serves as separation between pedestrians and adjacent traffic, increasing pedestrians' comfort. If a road segment had a buffer between the travel lanes and the sidewalk, it received points. Segments without a buffer received zero points. Sidewalk buffers were determined using aerial maps from WinGIS, Google Street View, and IRIS.

Key Findings

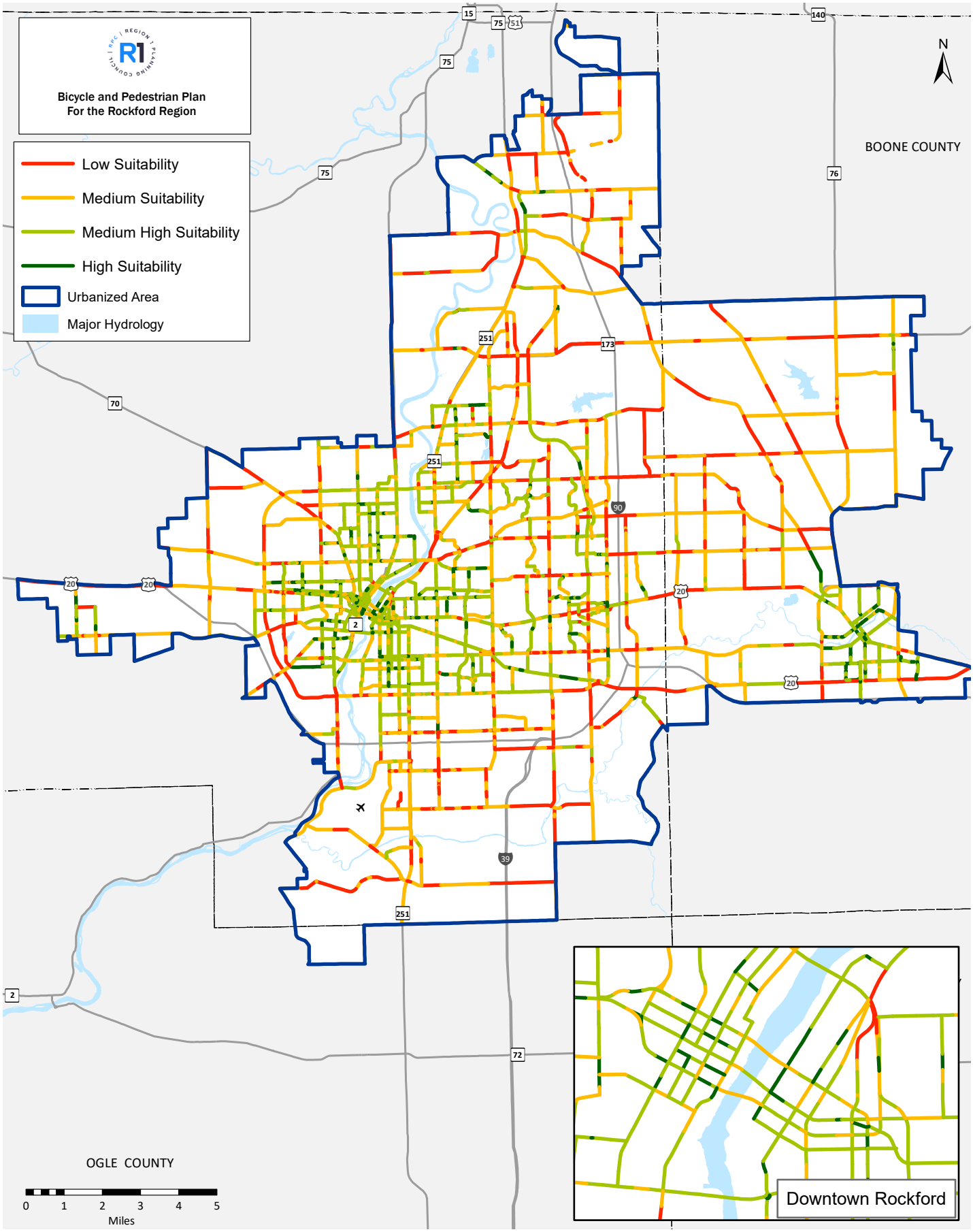
The results of the scores of roadway characteristics and pedestrian space factors produced four different categories of overall roadway network suitability. The product of each segment's score fell into one of four categories: high (76-100 points), medium-high (51-75 points), medium (31-50 points), or low suitability (0-30 points).

Table C-3: Pedestrian Network Analysis Results

Score	Class	Miles	Percent of Total Mileage
76-100	High Suitability	9.59	1.6%
51-75	Medium High Suitability	166.76	27.8%
31-50	Medium Suitability	271.08	45.1%
0-30	Low Suitability	153.31	25.5%
	Total Roadway	600.74	100.0%

Source: Region 1 Planning Council

Map C-3: Pedestrian Network Analysis Results



Source: Region 1 Planning Council

Intersection Analysis

The final step in quantifying the suitability of the overall pedestrian network was through the analysis of each intersection of the major roadway network. Generally, intersections are the preferred crossing location for pedestrians. Marked crosswalks and pedestrian signal heads serve to allocate the right-of-way to pedestrians and motorists, reducing the probability of a collision.

Methodology

Similar to the pedestrian network suitability, the factors in the intersection suitability were divided into two categories: roadway characteristics, with a maximum score of 70 points, and pedestrian infrastructure, with a maximum score of 30 points. Each intersection's weighted totals are derived from data on the northern, southern, eastern, and western street segment that crosses within the intersections, known as intersection legs. The lowest pedestrian suitability score among the individual intersection leg scores was chosen to be the composite score for that intersection. Table C-4 shows each of the factors and the assigned score for each of the factors.

Roadway Characteristics

Many of the factors used for the roadway characteristics in the pedestrian network suitability were also used for the intersection suitability analysis, such as posted speed limit, average speed limit, traffic and truck volumes. More information on these factors can be found above. However, the presence of traffic control devices was added to the roadway characteristics for intersections.

Traffic Control Devices

Traffic control devices stop vehicular traffic, allowing pedestrians to cross more easily. The presence of traffic signal at an intersection received the highest possible score for this factor, followed by a slightly lower score for stop signs, roundabouts, yields or zero points for no control device. Traffic control devices were identified using data and aerial maps from WinGIS and Google Street View.

Additionally, intersections received additional points if a pedestrian signal was present.

Turn Lanes

Turn lanes are additional lanes for a pedestrian to have to cross when entering an intersection and increases the time spent in vehicle and pedestrian conflict zones. Intersections with no turn lanes received the most points with less points earned for intersections that had a left or right turn, left and right turn, double left turn or a double left turn lane and a right turn lane. Turn lane presence was determined using aerial imagery from WinGIS and Google Street View.

Pedestrian Space

The following three factors were used for the pedestrian space characteristics of intersections:

Crosswalks

Crosswalks provide a dedicated space for pedestrians to cross and alert motor vehicles of the potential presence of pedestrians. Crosswalks were defined as paint or markings placed in the

Table C-4: Intersection Characteristic Factors & Score

	Input	Metric	Item Scoring
Roadway Characteristics	Posted Speed Limit	< = 25 mph	10
		30 - 35 mph	5
		> = 40 mph	0
	Average Speed Limit	< = 25 mph	10
		30 - 35 mph	5
		> = 40 mph	0
	Number of Through Lanes	< = 2 lanes	10
		3 - 4 lanes	5
		> = 5 lanes	0
	Turn Lanes	No Turn Lanes	10
		Left Turn Lane or Right Turn Lane	8
		Left Turn Lane and Right Turn Lane	5
		Double Left Turn Lane	3
		Double Left Turn Lane and Right Turn Lane	1
	Truck Volume	< = 5,000 AADT	10
		5,001 - 9,000 AADT	8
		9,001 - 15,000 AADT	5
		> 15,000 AADT	0
	Traffic Volume	< = 5,000 AADT	10
		5,001 - 9,000 AADT	8
		9,001 - 15,000 AADT	5
		> 15,000 AADT	0
	Traffic Control Devices	Traffic Signal	10
		4-Way Stop	8
		Roundabout	6
		2-Way Stop	4
		Yield	2
		No Control	0
Pedestrian Infrastructure	Pedestrian Signal	Present	5
		Absent	0
	Presence of Sidewalk	Both Side of Roadway	10
		One Side of Roadway	5
		None	0
	Crosswalks	High Visibility Crosswalk	10
		Standard Crosswalk	8
		Partial Crosswalk	5
		No marked crosswalk	0
	Refuge Island	Median Island	5
		No median or refuge	0

Source: Region 1 Planning Council

street to delineate that section of roadway for pedestrian travel. Intersections legs with high visibility crosswalks present such as bar pairs, continental or ladder received points more points. Standard cross walk or partial crosswalks which were defined as crosswalks that were faded received less points and zero points were received if the intersection leg had no crosswalk present. Crosswalk presence was determined using aerial maps from WinGIS and Google Street View.

Refuge Islands

A median island provides a refuge for pedestrians crossing multi-lane streets, improving crossing safety. Refuge islands were defined as any area within an intersection where the pedestrian could be on a separate grade than the vehicle traffic. Raised medians and refuge islands were identified using aerial maps from WinGIS and Google Street View.

Key Findings

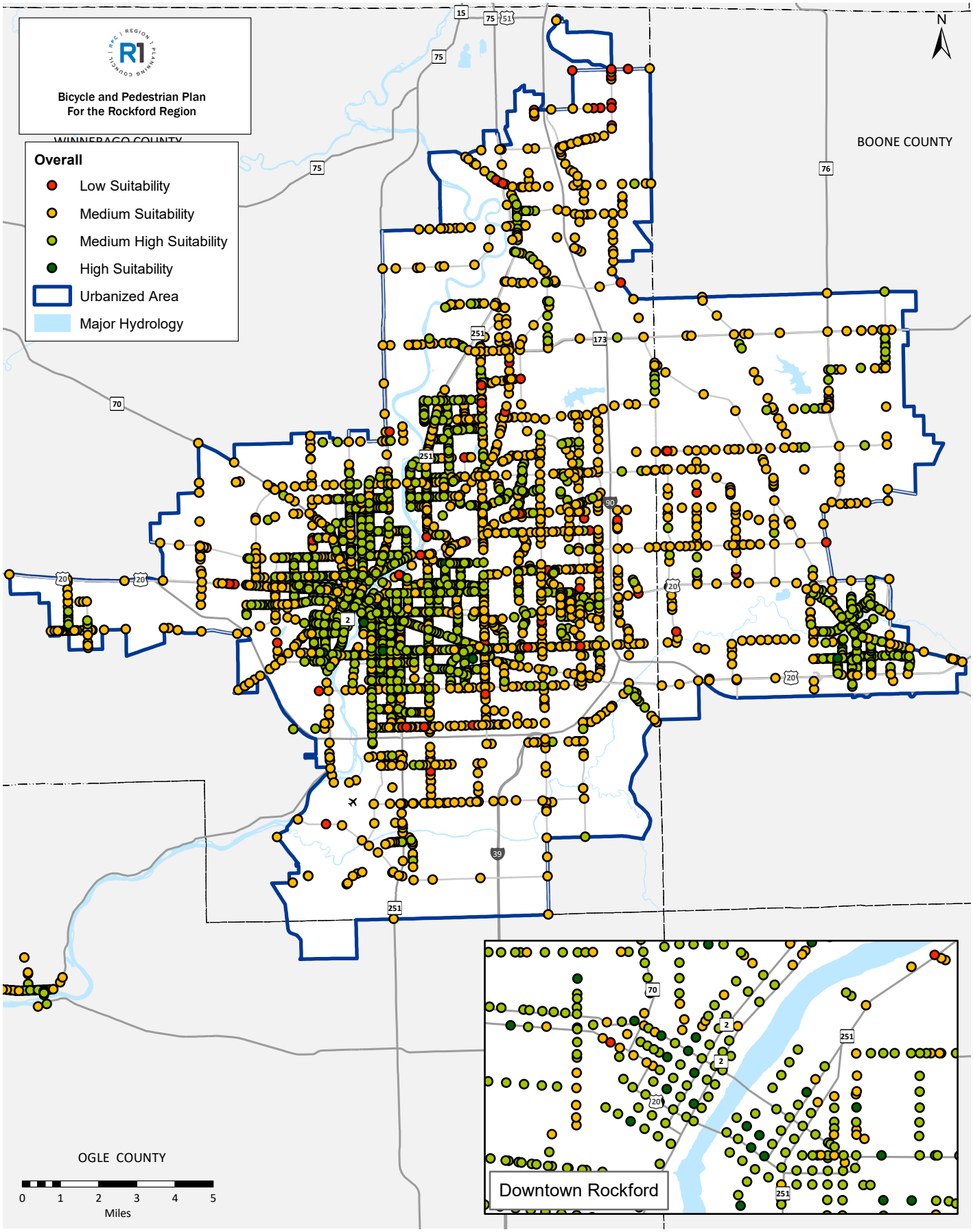
Table C-5 and Map C-4 illustrate the results of the analysis, based on factor scores and weights. The results of the composite scores of roadway characteristics and pedestrian space factors produced four different categories of overall roadway network suitability. The product of each segment's score fell into one of four categories: high (76-100 points), medium-high (51-75 points), medium (31-50 points), or low suitability (0-30 points).

Table C-5: Intersection Analysis

Score	Class	Number	Percent of Total
76-100	High Suitability	22	0.7%
51-75	Medium High Suitability	1548	46.2%
31-50	Medium Suitability	1705	50.9%
0-30	Low Suitability	73	2.2%
	Total Intersections	3348	100.0%

Source: Regional 1 Planning Council

Map C-4: Intersection Analysis Results



Source: Regional 1 Planning Council

Appendix D

Literature Reviews/ Case Studies

The Bicycle Master Plan (2020)

This document is the 2018 Bicycle Master Plan, it provides recommendations to the Planning Board and Montgomery County Council for implementing the vision of the plan. It evaluates progress made in advancing the goals and objectives of the plan as well as recommendations for bikeways and bicycle parking, and bicycle-supportive programs and policies. The Bicycle Master Plan sets forth a transformative vision for transportation in Montgomery County, encouraging people of all ages and bicycling abilities to meet their daily needs by bicycle.

Urbana Pedestrian Master Plan (2020)

The purpose of this plan is to promote walkable communities within the City of Urbana in order to become a more economically vibrant, healthy and sustainable community. This plan is pedestrian focused as the City of Urbana has made significant investment in bicycle planning and infrastructure, it has not made the same investments in pedestrian planning.

Boulder Low-Stress Walk and Bike Network Plan (2019)

This plan outlines the vision of the City to create a network of low-stress facilities to help people of all ages and abilities to walk and bike safely and comfortably throughout the community. The plan identifies methods to assess the comfortability of existing pedestrian and bicycle facilities in Boulder and references how to priorities needed improvements to the active transportation environment.

Lexington Area Bicycle and Pedestrian Master Plan (2018)

This plan was an update to the previous bicycle and pedestrian plan for the Lexington Area MPO. The plan outlined how the MPO and local governments will prioritize, fund and implement policies and create infrastructure in order to support bicyclists and pedestrian.

Appendix E
Connections to Regional Plans & Studies

Federal

Federal Highway Administration

Bicycle and Pedestrian Planning Program (2019)

The purpose of this guidance is to identify references to certain Federal legislation, was well as other relevant guidance and reference materials, related to bicycling and walking safety and accommodation.

State

Illinois Department of Transportation

Complete Streets Policy (2010)

In order to comply with the Illinois Complete Street Law, the Illinois Department of Transportation revised the design criteria. The policy provides bicyclists and pedestrians full consideration in the planning and development of transportation facilities in order to accommodate all roadway users.

Illinois Bike Transportation Plan (2014)

The Plan provides recommendations and action items designed to enhance Illinois Department of Transportation's ability to provide safe and cost-effective accommodations for cyclists across Illinois. The recommendations address a variety of topics including facility design and maintenance, network gaps, grant funding programs, safety education and enforcement, and internal governance and coordination. In addition, the plan includes performance measures designed to evaluate progress towards implementation.

Regional

Metropolitan Planning Organization

2050 Metropolitan Transportation Plan Organization for the Rockford Region (2020)

This plan addresses the transportation system in Boone County, Winnebago County, and northern Ogle County, providing an innovative and sustainable framework for the region's transportation network over the next 20 – 30 years. The purpose of this plan is to identify the region's transportation vision, strategies, and priorities for the transportation system including highways, bridges, public transit, freight, and bicycle and pedestrian facilities.

2021 Greenways: A Greenways Plan for Boone, Ogle and Winnebago Counties (2021)

The purpose of the Greenways Plan is to promote a regional greenway network that protects natural and cultural resources in a manner which supports equal access to green space; provides alternative forms of transportation and recreational benefits; enhances environmental and scenic qualities; and stimulates sustainable, equitable economic development.

2023 Infrastructure Priorities Playbook (2023)

State lawmakers representing Northern Illinois have requested that elected and appointed local government leaders work with Region 1 Planning Council (R1) to develop a list of priority infrastructure funding needs to be considered by the Illinois General Assembly. The Infrastructure Priorities Playbook booklet that identifies the infrastructure projects for active transportation, bridges, public transportation, recreation roadways, vertical infrastructure, and water management. The Infrastructure Priorities Playbook booklet that identifies the infrastructure projects for bridges, bicycle, pedestrian, public transit, roadways, vertical infrastructure, and water management.

Local

City of Rockford

Complete Streets Policy (2017)

The Plan identifies the need for Rockford to develop safe, efficient, accessible and integrated multimodal transportation that focused on the need and desire for access, mobility, economic development and aesthetics while providing for the health and well-being for people of all ages and abilities.

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