State of Bicycling in Lawrence

Lawrence is a regionally recognized leader in active modes of transportation and has been a Bronze Level Bicycle Friendly Community since 2004. Our city has made progress on bicycle safety, bike infrastructure, and multimodal mobility through support from a variety of state, regional, and local plans. The Lawrence Bikes Plan fits into this larger planning context by providing an analysis of existing conditions, strategies to achieve a safer, more comfortable bicycle network, and a vision for the future of biking in Lawrence.

To begin assessing existing conditions, it is essential to first understand the relevant plans, policies, and strategies adopted by local, regional, and state authorities, as they shape the environment in which the Lawrence Bikes Plan will be updated.

Existing Plans and Policies

Kansas Active Transportation Plan

In 2023, the Kansas Department of Transportation (KDOT) completed the first Active Transportation Plan since 1995 to address the needs of Kansans who walk, cycle, use mobility assistance devices, scoot, and more. The process also produced several toolkits and resources that support the plan and advance the needs of active transportation in local communities. The plan establishes a statewide vision for Kansas to be a place where people of all ages, abilities, and backgrounds have safe and convenient options to walk, bike, roll, and use other active modes for transportation and recreation.

The Active Transportation Plan was developed around six goals:

- Safety: Reduce the frequency and severity of crashes involving pedestrians, cyclists, and other active transportation users.
- Equity: Invest in underserved communities and prioritize the needs of populations that rely on active transportation and transit to reach jobs and essential services.
- Mobility: Increase the regular use of walking, cycling, wheeling, and other active transportation modes.
- Community Health and Vibrancy: Promote active transportation activity and infrastructure to improve people's health, positively impact the environment, improve quality of life, and spur economic development.
- Culture Shift and Education: Normalize active transportation as a vital part of the overall transportation system.
- System Longevity: Maintain and preserve active transportation system investments and funding sources.

Adapt Douglas County: A Climate Action and Adaptation Plan

The Adapt Douglas County Plan was a countywide effort, developed in 2024, with input from across Lawrence, Eudora, Baldwin City, Lecompton and the unincorporated areas of Douglas County to draft a plan to mitigate greenhouse gas emissions and adapt to the impacts of climate change. While the vast energy systems we rely on are regulated at the state and federal levels, the experience of, and strategies for, living through climate change occur locally. One of the goals of

Adapt Douglas County is "Mobility" which supports the use of non-motorized vehicles (such as bicycles) as a mode of transportation as a means to improve physical health and help to lower carbon emissions within the community.

Kansas Transportation Emissions Reduction Strategy (TERS)

The KDOT Transportation Emissions Reduction Strategy (TERS) provides the framework for addressing emissions related to Kansas' transportation sector. The TERS addresses federal requirements established under the Carbon Reduction Program (CRP), a federal program created by the Infrastructure Investment and Jobs Act (IIJA), commonly referred to as the Bipartisan Infrastructure Law (BIL) and administered by the Federal Highway Administration (FHWA). Safety is the number one priority of TERS, and all KDOT investments funded under the federal CRP will be made considering safety co-benefits. KDOT has committed to investing in transportation approaches to improve traffic flow, reduce congestion, increase safety, and reduce emissions.

Transportation 2050

Transportation 2050 (T2050) is the blueprint for our future transportation system; it is a vision for a healthy, safe, and efficient transportation system which adequately serves the metropolitan region that includes Lawrence, Eudora, Baldwin City, Lecompton and all remaining unincorporated areas of Douglas County. The plan identifies future transportation needs, investments, and improvement strategies for all forms of transportation (automobile, public transit, bicycle, pedestrian, etc.) necessary to meet the transportation needs of the region through 2050.

The goal of Transportation 2050 is that people have a variety of transportation options that provides safe, accessible, convenient, healthy, and affordable travel that connect them to their destinations. This includes a connected network of pedestrian and bicycle facilities comfortable for people of all ages and abilities, supported by the Lawrence Bikes Plan, Countywide Bike Plan, Safe Routes to School Plan, Lawrence Pedestrian Plan, and Regional Pedestrian Plan.

City of Lawrence Strategic Plan

The Lawrence Strategic Plan includes five "outcome areas" that represent what our city aims to accomplish within our community. Three of these outcomes relate directly to bikeability and the Lawrence Bikes Plan. The city paired these outcomes with "commitments" related to how we will reach them including community engagement, equity and inclusion, and sustainability.

- ***Connected City****: The City of Lawrence has well-maintained, functional, and efficient infrastructure, facilities, and other assets. Connectivity supports accessible, sustainable methods for safely moving people and information throughout the community and the region. Investment in these assets reflects the City's commitment to contribute to the well-being of all people.*
- **Strong, Welcoming Neighborhoods**: All people in Lawrence live in safe, functional, and aesthetically unique neighborhoods that provide opportunities to lead healthy lifestyles with access to safe and affordable housing and essential services that help them thrive.
- **Safe and Secure**: Lawrence is a community where all people feel safe and secure and have access to trusted public and community-based safety resources.

Progress on the strategic plan is measured using Key Performance Indicators (KPIs), some of which are based on responses from a statistically valid survey conducted by the city every few years. The

most recent survey, completed in 2022, included a key metric especially relevant for this bike planning process: the 'Percent of Residents Satisfied or Very Satisfied with Their Transportation Experience.

Satisfaction levels varied by mode of transportation, with 40% of residents reporting they were satisfied or very satisfied with their biking experience, compared to 58% for driving. Additionally, respondents identified two key priorities for city leaders over the next two years: (1) improving the availability of safe routes for children to walk or bike to school and (2) enhancing the connectivity of bicycle lanes and shared-use paths.

Land Development Code (LDC) Update

The City of Lawrence recently revised its Land Development Code (LDC), which regulates how development occurs within the community. The LDC serves as a key tool for implementing Plan 2040 (the comprehensive plan for Unincorporated Douglas County and the City of Lawrence), Transportation 2050 (T2050), and the Lawrence Strategic Plan. Key updates to the code include increased flexibility between zoning districts to promote more equitable development and support a more walkable, bike-friendly environment. Additionally, the definition of 'bicycle' was updated to include e-bikes, and bicycle parking design standards were expanded to better accommodate cargo bikes and tricycles. The updated LDC goes into effect April 1, 2025.

City of Lawrence Plan Preparation & Design Criteria

The Plan Preparation & Design Criteria sets the standard for bikeway design. The City of Lawrence recognizes the Guide for the Development of Bicycle Facilities AASHTO and Urban Street Design Guide NACTO as best practices. In 2023, Appendix H: Bicycle & Pedestrian Design Guidelines were included in the criteria.

Progress on previous recommendations

The Lawrence Bikes Plan, approved in 2019, provides recommendations on non-infrastructure policies and programs to advance the vision for the Lawrence Bikes Plan. The vision is stated as, “A bikeway network that supports safe and comfortable riding for all”

The following table outlines the recommendations related to Education and Encouragement, Engineering and Enforcement Operations, and Evaluation with the progress made towards these recommendations.

Figure 1: Lawrence Bikes Plan Recommendations and Status

Education and Encouragement	
Recommendations	**Status**
Continue and expand the Lawrence Safe Routes to School (SRTS) programs	Lawrence Safe Routes to School Plan was adopted in 2020, amended in 2023, and plans to be amend in the fall of 2025. Numerous SRTS sidewalk projects have been constructed,

	annual circulation and encouragement maps are produced and on bike education continues annually in USD 497 schools.
Develop a bicycle friendly driver education program to be incorporated into driver training.	Due to changes in community leadership, this program was eliminated. There have been discussions about captive audiences, but they did not materialize into training programs. No new leadership has been identified.
Produce and maintain a Rideability Map	Last updated/produced in 2022 and planned for update in 2025, if prioritized in staff workplans.
Support programs: Education about proper riding behaviors	Bicycle education for youth remains a focus in the local school district, with all 4th and 5th graders in Lawrence public schools completing a bicycle education unit as part of their physical education classes. However, opportunities for older children and adults are less consistent. The Lawrence Bicycle Club offers a weekly beginner ride during the warmer months, and local bike shops host maintenance clinics to promote a culture of cycling. However, bicycle courses previously offered by the City are no longer available
Support programs: Bike Share	In fall 2018, the City partnered with the University of Kansas and VeoRide to launch a bikeshare program. The planning and implementation process provided valuable insights; however, the program ended in 2020. Discussions about bikeshare programs often also include electric scooter initiatives
Support programs: Bicycle Cooperative	The local bicycle co-op, Lawrence Unchained, has gone through a number of changes since the last bike plan update. After closing temporarily, the name and equipment was transferred to a new operator. The co-op received a large community grant from the Lawrence St. Patrick's Day Parade Committee in 2024.
Support programs: Bicycle Friendly Businesses	The City of Lawrence has two Bicycle Friendly Businesses in the community. Namely, Anderson Rentals and BG Consultants.
Support programs: Community Bike Events and Weekly Club Rides	Lawrence is home to two main cycling clubs, the Lawrence Bicycle Club and Lawrence Central Rotary, both of which organize weekly and special rides throughout the year. The Lawrence Bicycle Club hosts a weekly beginner ride to encourage new cyclists, while Lawrence Central Rotary holds an annual Community Bike Ride to promote family-friendly cycling. The City has also hosted a safety fair featuring cycling education, and local bike shops actively support these clubs and events in various ways.

Engineering and Enforcement Operations	
Recommendations	**Status**

Establish data driven processes: asset management/ bikeway maintenance	The City continues to improve asset management processes and systems working towards implementing the Strategic Asset Management Plan.-
Include wayfinding.	In 2023 and 2024 the City developed a which was delayed due to shifts in budget priorities.
Establish data driven processes: Bikeway Level of Comfort model, and crash report analysis	The Vision Zero Transportation Safety Plan and dashboard enhance public access to crash data and safety improvement projects, providing greater transparency on the impact of safety measures. This helps illustrate the benefits of improvements and highlights the risks faced by vulnerable road users.
Establish data driven processes: multimodal counts (active users and parked bikes)	Since the last bike plan, manual bicycle and pedestrian counts have not been conducted. The Neighborhood Traffic Management Program invested in automated counters to create parity between modes, but the data collected has yet to be validated. Due to staffing constraints, further attention is needed to ensure accurate and reliable counts.
Enforce the rules of the road for bicycle riders and drivers to improve the safety for all road users.	The Lawrence Police Department implemented a traffic concern reporting form online which allows community members to report areas where they encounter speeding, aggressive driving, or other dangerous behaviors. The department compiles these reports and uses them to target enforcement in the community.
Modify development code to support bicycle friendly end of-trip amenities and bike parking. Apply regulations to retrofit existing developments.	An update to the Land Development Code was recently adopted by the City Commission and will go into effect April of 2025. The code has an updated bicycle definitions and revised bike parking requirements. These changes will impact all new development and major redevelopment of existing properties.

Evaluation	
Recommendations	**Status**
Collect SRTS travel tally and bicycle/pedestrian counts.	Lawrence-Douglas County Public Health and their partners at USD 497 have continued to collect travel tallies semiannually, once in the spring and once in the fall. This data is organized and shared with partners on the SRTS team. The most recent counts from Fall 2024 show an average of 3% of students at Lawrence Elementary and Middle Schools bike to school with Liberty Memorial Central Middle School having the highest percentage with up to 7.4% of students biking. Full travel tallies are shown in Figure 2. Overall, there is a higher percentage of students walking to school than biking.
Coordinate with the Neighborhood Traffic Management Program (NTMP).	General bicycle safety is improved by all traffic calming measures and the complete streets policy ensures that bicycles are a consideration in safety updates.

Track plan performance through annual performance measures (PMs).	PMs will be updated as part of the Bike Plan planning process.
Apply to national 3rd party organizations to evaluate bicycle progress.	In 2024 the City of Lawrence once again applied for the Bicycle Friendly Community designation from the League of American Bicyclists. The City received a bronze ranking from the League. The City has also been evaluated by People For Bikes, a national organization supporting bicycling. These national organizations and programs can be an excellent way to gain a different perspective on our bicycling infrastructure but can also lack regional specificity and context. For example, while Lawrence's bicycle infrastructure has continued to grow and improve over the last 20 years, so has the baseline expectations of the League. Meaning the City of Lawrence has held the same bronze designation since 2004.

Figure 2: 2024 Safe Routes to School Walking & Biking Travel Tally

N = 15 schools	Total Children Polled	Percent Biking	Percent Other Active Modes
Billy Mills Middle School	138	1.4%	14.8%
Cordley Elementary	218	2.8%	23.4%
Deerfield Elementary	356	3.9%	14.3%
Hillcrest Elementary	354	1.0%	13.5%
Langston Hughes Elementary	541	4.2%	18.5%
Liberty Memorial Central Middle School	75	7.0%	22.5%
New York Elementary	175	2.3%	20.1%
Prairie Park Elementary	312	5.8%	10.7%
Quail Run Elementary	317	1.0%	15.9%
Schwegler Elementary	225	1.6%	14.3%
Southwest Middle School	567	1.8%	12.4%
Sunflower Elementary	415	5.7%	22.4%
Sunset Hill Elementary	293	1.6%	33.3%
West Middle School	524	1.5%	17.8%
Woodlawn Elementary	167	3.0%	14.0%
Grand Total	**4677**	**3.0%**	**17.8%**

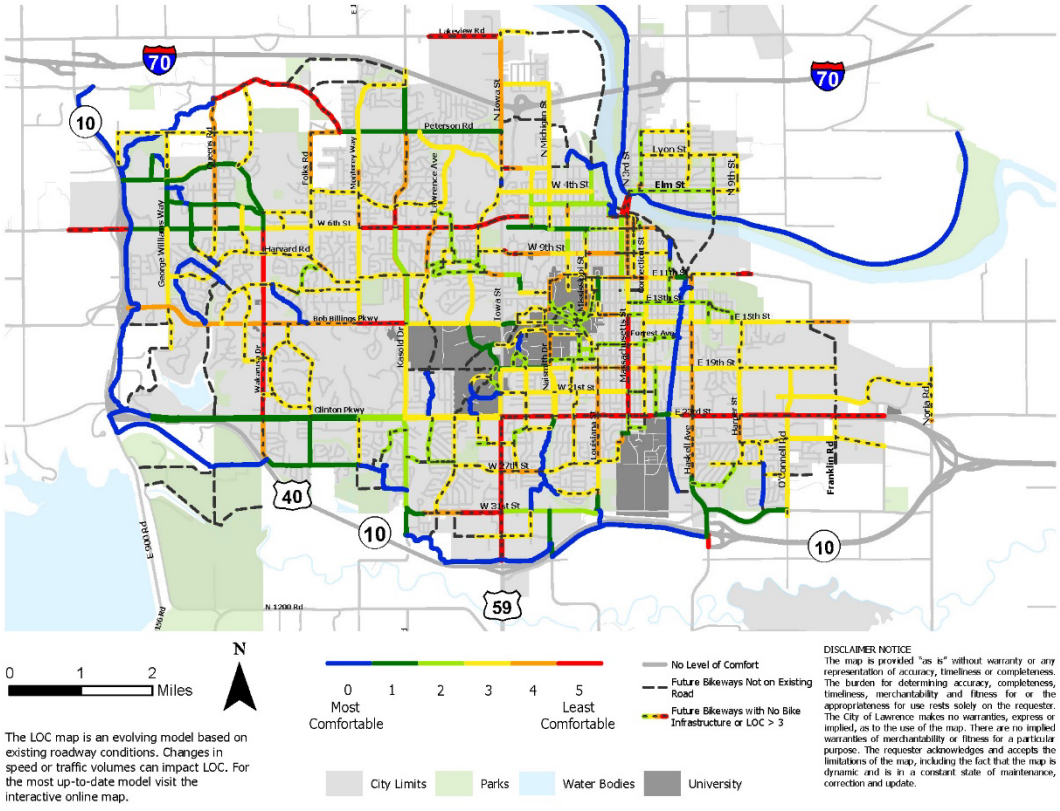
Level Of Comfort

Level Of Comfort (LOC) and perception of safety is impacted by the bikeway type and characteristics of the roadway. The 2019 Lawrence Bikes Plan worked to translate these levels of comfort into a tool to better guide engineers and others in the development of bikeways. The resulting guidance is shown in Figure 3. The previous goal was to increase the milage of bikeway that met a comfort level of 3 or higher.

Figure 3: Lawrence Bikes Plan Level of Comfort by bikeway type

	Existing Facility Type	0 (most comfortable)	1	2	3	4	5 (least comfortable)
major separation	shared use path	not side path	side path, <=13,000 vehicles, <=45 mph	side path, <=20,000 vehicles, <=45 mph	side path, > 20,000 vehicles OR > 45 mph		
major separation	protected bike lane/cycle track		<=13,000 vehicles, <=45 mph	<=20,000 vehicles, <=45 mph	>20,000 vehicles OR >45 mph		
minor separation	buffered bike lanes		<=4,000 vehicles, <=30 mph	<=6,000 vehicles, <=30 mph	<=13,000 vehicles, <=30 mph	<= 20,000 vehicles, <=45 mph	>20,000 vehicles OR >45 mph
minor separation	conventional bike lanes		<=4,000 vehicles, <=25 mph	<=8,000 vehicles, <=25 mph	<=13,000 vehicles, <=35 mph	<= 20,000 vehicles, <=40 mph	>20,000 vehicles OR > 40 mph
shared street	bicycle boulevards		<=1,500 vehicles, <=25 mph	<=3,000 vehicles, <=25 mph			
shared street	marked shared lanes		<=1,500 vehicles, <=25 mph	<=5,000 vehicles, <=25 mph	<=8,000 vehicles, <=30 mph	<= 13,000 vehicles, <=35 mph	
	no facility type			<=3,000 vehicles, <=25 mph	<=6,000 vehicles, <=30 mph	<=13,000 vehicles, <=40 mph	>13,000 vehicles OR > 45 mph

Figure 4: 2021 Lawrence Bikes Plan Level of Comfort



Bikeway Implementation – Current Practice

The bikeway network in Lawrence is developed in four distinct ways:

- Implementation of the Complete Streets policy;
- Standalone Bicycle & Pedestrian projects developed and prioritized out of the Bike Plan as part of the Non Motorized Project Prioritization;
- Private development and;
- Street maintenance projects that integrate bikeways (most often pavement markings).

The City's Complete Streets Policy applies to capital projects and includes a checklist tool to evaluate the multimodal improvements considered as part of the project. Many miles of bikeway have been established from the Complete Streets policy, including Shared Use Path on Wakarusa Dr., and E 23rd St.

Since 2016, designated funding for bicycle and pedestrian projects has been included in the city budget. The city uses the Non-Motorized Prioritization Policy to develop the 5-year Bike/Ped Capital Improvement Program (CIP). Projects from the Priority & Secondary network on the Lawrence Bike Plan are scored and a 5-year plan is developed. This funding has allowed the city to increase the milage of the bicycle network more quickly and address projects not associated with roadway improvements. Examples of these bikeways include: the 21st St. Bicycle Blvd. and the planned buffered bike lane on 9th S.

Private development can add to the overall network as well. Depending on the location in town, these developments can facilitate important connections on the network. Examples of these bikeways include the Shared Use Path connecting the Naismith Valley Trail to 31st S. and Shared Use Path connecting Lawrence Ave. At Clinton Pkwy. to Crestline/Becker Dr.

Lastly street maintenance funds can be used to expand the bikeway network. While ongoing maintenance is officially exempted from the Complete Streets policy, the city still tries to apply the same principles when completing these projects. However, since the scale and budget of maintenance projects do not provide for reconstructing the curb, improvements are limited within the current widths and therefore are most often pavement markings. These pavement markings often do not meet the LOC goals for the system but fit within the Plans "next best' facilities. Examples of these bikeways are the miles of marked shared lanes and bike lanes on 9th S., N Iowa St., Princeton Blvd. and Lawrence Ave.

> "***Next Best"*** Bikeways as described in the 2019 Lawrence Bikes Plan: "There are times the desired bikeway type is not feasible due to limited funding and/or scope of the maintenance project; thus, streets should be retrofitted with next best facility for the time being. Then in the future, when there is a major roadway project or a standalone bicycle/pedestrian project the facility can be improved to the ideal bikeway. The idea is it is better to do something and create a connected bikeway network than to do nothing, e.g. the next best facility."

Bicycle Network

Since the Lawrence Bike Plan was adopted in 2019 there has been significant progress constructing bikeways. Those bikeways established since the last plans adoption are highlighted in gray in Figure 5 and shown by mileage in Figure 6.

Figure 5: Lawrence Bikeways Network with bikeway changes since 2019 highlighted

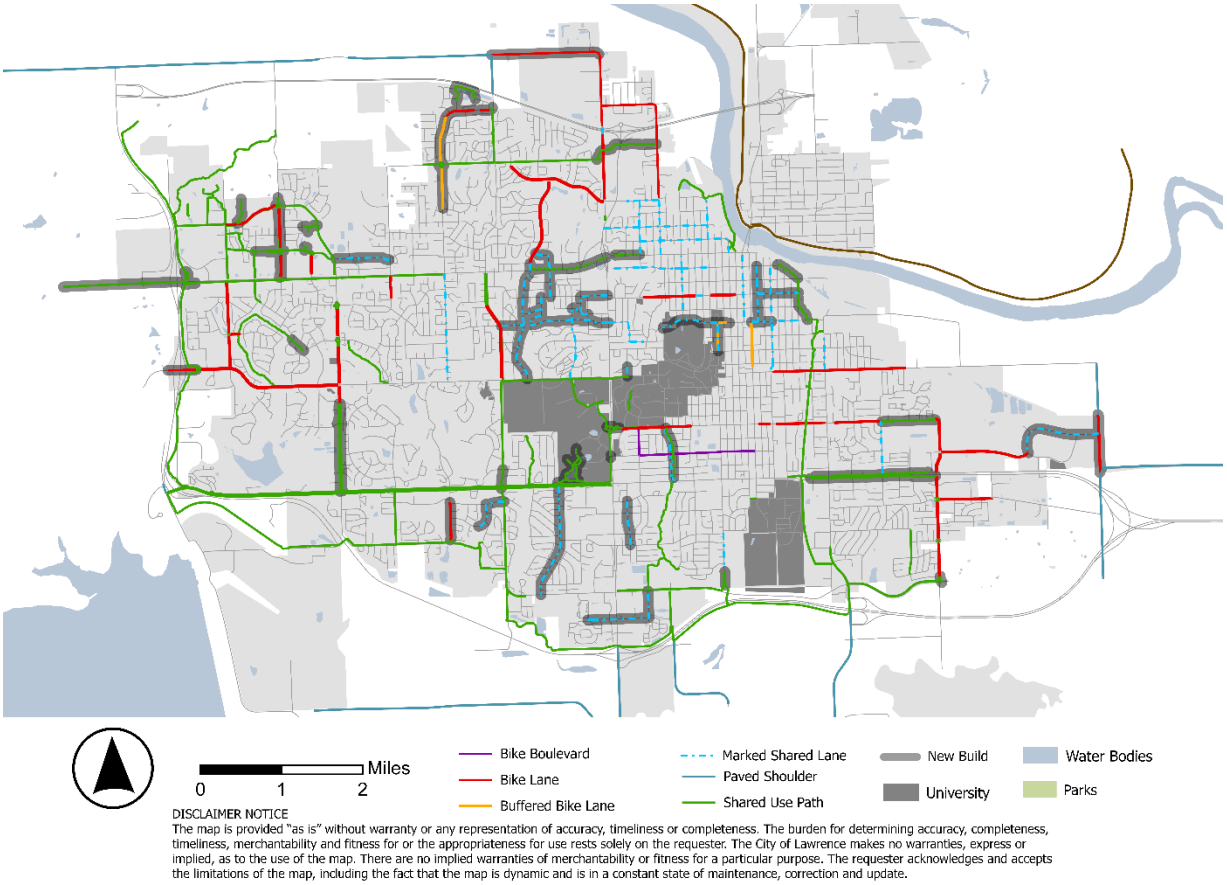


Figure 6: Miles of bikeway type (2019 & 2024)

	2019	2024
Protected Bike Lanes	0	0
Buffered Bike Lanes	0.39	1.16
Conventional Bike Lanes	16.9	19.54
Marked Bike Boulevards	0	1.58
Marked Shared Lanes	11.3	21.05
Shared Use Path	54.33	67

Safety

Consistently, local and national trends show that safety is a major factor in whether people choose to ride their bikes and where. The City received grant funding to pursue a Vision Zero Transportation Safety Action Plan. Vision Zero is a national movement aimed at eliminating all traffic related fatalities and serious injuries through the use of the Safe Systems Approach shown in Figure 7. The Plan included a public engagement process, crash data analysis to create a High Injury Network (HIN) and Vulnerable Road Users (VRU) HIN, recommendations for policies and projects to reduce fatal and serious injury crashes, and a public dashboard that tracks crash data.

Figure 7: US DOT Safe Systems Approach

Key Definitions:	
High Injury Network (HIN) are areas where dangerous crashes are concentrated and can include corridors and intersections throughout the community. The HIN is based on crash density, crash severity, and crash frequency.	**Vulnerable Road Users (VRUs) are people who walk, bike, roll, or use assistive mobility devices.**

The HIN shown on Figure 8 was developed by compiling five years of crash data for all modes to identify corridors in the community that are over-represented in fatal and serious injury crashes. For example, in Lawrence 65% of all fatal and serious injury crashes occur on only 6.5% of the roadway network. A HIN was also created for people who walk, bike, roll, or use assistive mobility devices, collectively referred to as Vulnerable Road Users (VRUs) shown in Figure 9. identifies intersections and corridors with the most crashes affecting cyclists and pedestrians.

The public dashboard will make crash information available to the public and can be filtered to specific travel modes and types of collision. These data sets will be used to help prioritize future safety improvements. While Vision Zero aims to protect all modes of transportation, cyclists and

pedestrians are overrepresented in these serious crashes and will benefit greatly from the community wide effort. The plan development process and documents can be found online.

Figure 8: Lawrence Vision Zero- High Injury Network

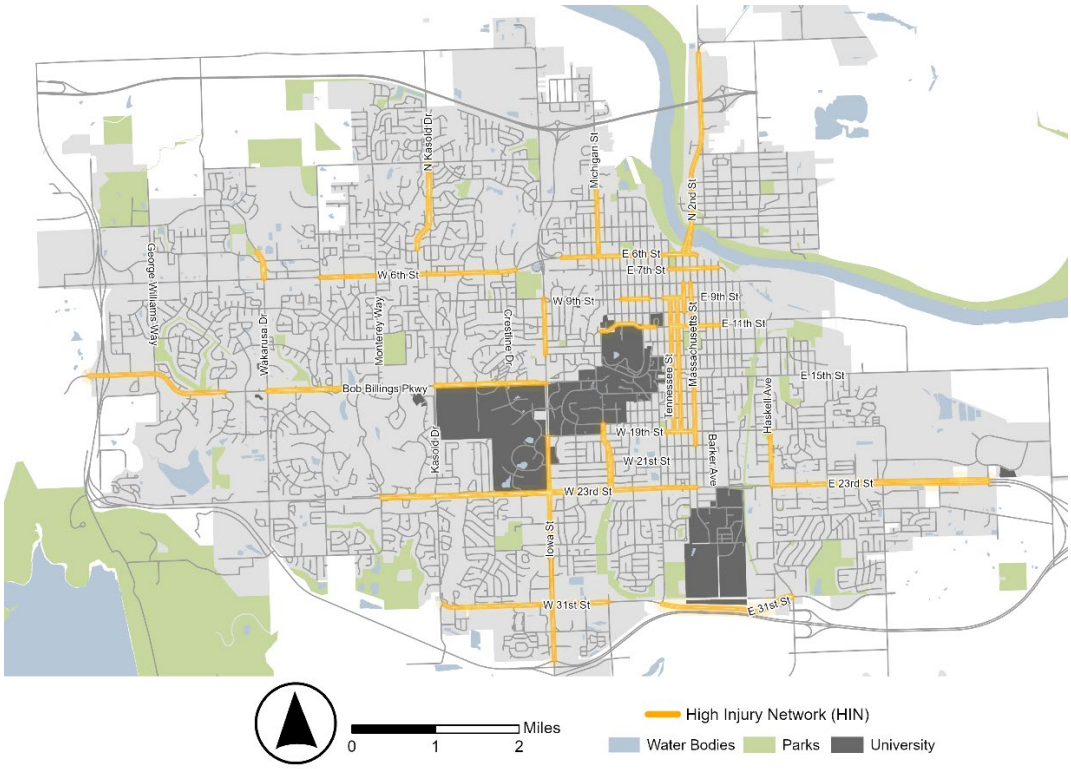


Figure 9: Lawrence Vision Zero – High Injury Network for Vulnerable Road Users

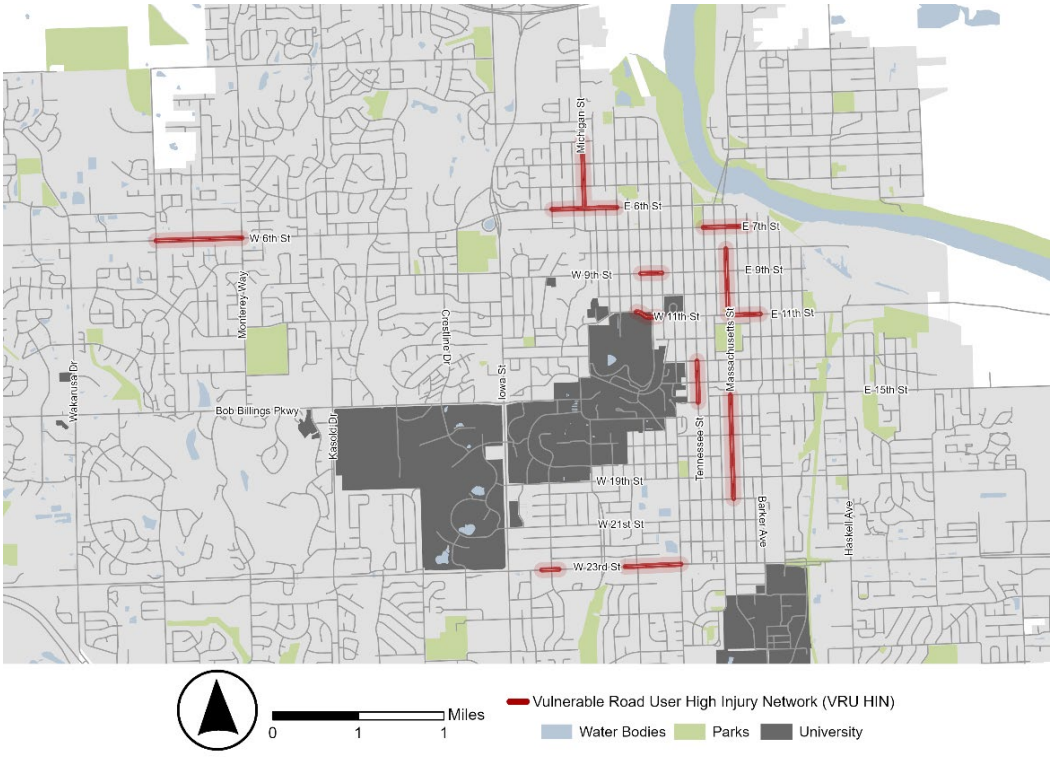


Figure 10: Lawrence Bicycle Crash History

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
All Crashes	25	22	25	18	27	16	9	14	19	20	15
Serious Injury	2	1	0	0	2	0	0	0	2	2	0

The Kansas Motor Vehicle Accident Report Coding Manual defines serious injury as any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred. Includes severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the accident scene, or inability to leave the accident scene without assistance.

Bicycle Usage

Bicycle & Pedestrian Counts were conducted by volunteers at locations across the city. Volunteers use the standardized National Bicycle and Pedestrian Documentation (NBPD) Project method created by Alta Planning and Design and the Institute of Transportation Engineers (ITE). The manual counts were last conducted in 2020 and bicycle data collected between 2013-2019 is shown on Figure 11.

Figure 11: Bicycle Counts Annual Average Daily Traffic

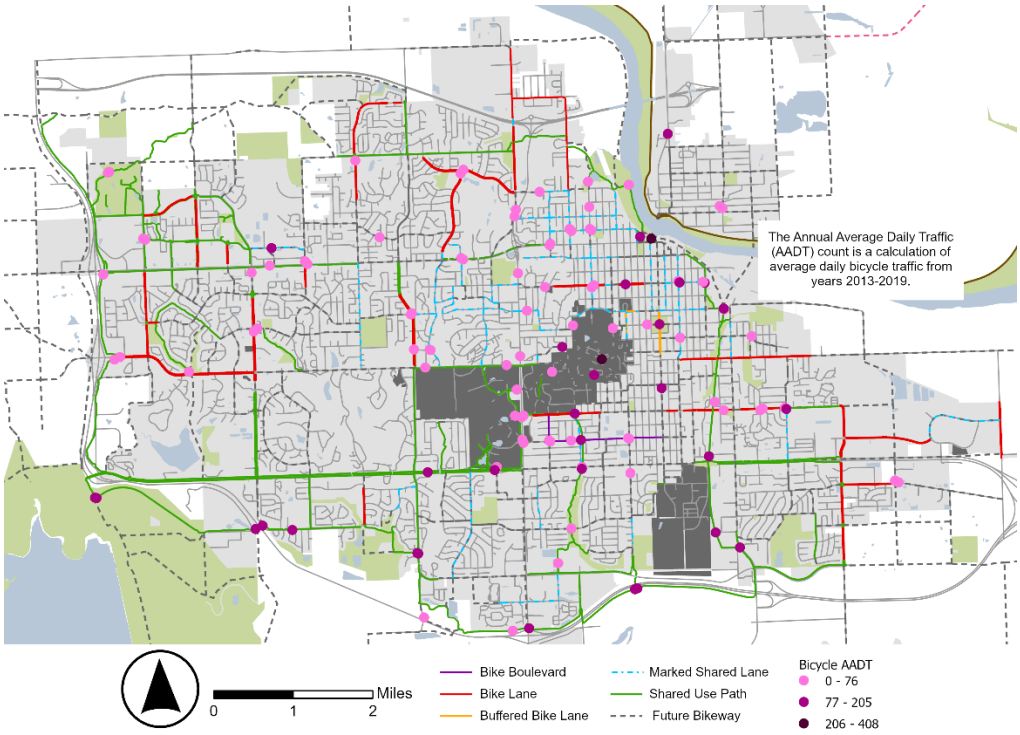
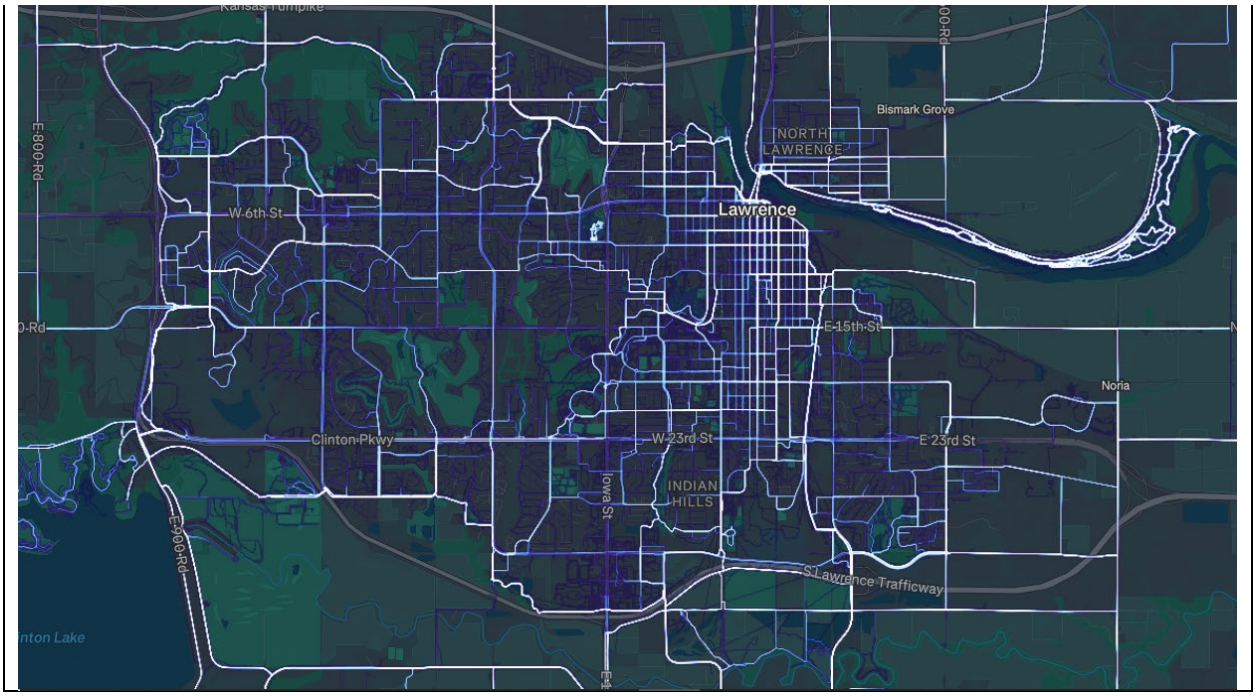


Figure 12 is a heatmap generated by data from the Strava ride tracking application. The map shows the routes tracked by various cyclists over the last year. This data can help show where cyclists are riding most frequently in Lawrence and highlight where there might be gaps in the network or underserved areas. The application does tend to be used more by recreational cyclists which can skew the results slightly.

Figure 12: Strava Bicycle Heatmap



Bicycle Parking

The CIty of Lawrence completed bicycle parking studies in the Downtown Commercial district in 2010 and 2016, as well as an update memo in 2020. Bicycle parking on private property is guided by the Land Development code and MSO design guidelines. Both have been updated recently but it may take time to see implementation. The city also maintains an online interactive map with bicycle parking and repair stand information.