Lawrence Pedestrian Plan: Existing Conditions Memo

Introduction

The Lawrence-Douglas County Metropolitan Planning Organization (MPO) is collaborating with the City of Lawrence to update the Lawrence Pedestrian Plan. This Existing Conditions Report is the first step in the planning process.

The first pedestrian plan for the City of Lawrence was completed as part of the MPO's Regional Pedestrian Plan completed in October 2016. It is important to document progress since 2016, review the 2020 City accessibility survey results, and pedestrian crashes between 2016 and 2020.

Existing Plan Recommendations and Progress since 2016

- Regional Pedestrian Plan completed in October 2016
- Pedestrian-Bicycle Issues Task Force report completed in February 2016

Regional Pedestrian Plan – October 2016

The Regional Pedestrian Plan has policy/program and infrastructure recommendations.[1] Progress has been made on the various recommendations. *Table 1* displays the recommendations and their status.

Table 1: Regional Pedestrian Plan Recommendations and Status

Recommendation	Status
Coordinate with university staffs on pedestrian policy and infrastructure plans When the Multi-Modal Transportation Commission was originally developed in 2017 it had a University of Kansas position. In the fall of 2019, the Multi-Modal Transportation Commission was reorganized and removed specific membership positions. This removed the designated positions for a local business, bicyclist, pedestrian, Public Transit Advisory Committee, Lawrence-Douglas County Public Health, person with a background in planning or engineering, one person with knowledge of multi-modal transportation planning and engineering, USD 497 representative, and University of Kansas student representative.	Past
Encourage pedestrian trips through wayfinding signage and an open streets event	
Reduce block length standards in subdivision design regulations	
Target resources to high-demand transit corridors The Non-Motorized Projects Prioritization Program utilized by the Multi-Modal Transportation Commission to distribute dedicated bicycle and pedestrian funding adds weighted points for projects that are near transit stops.[2]	Ongoing
Use traffic calming devices to improve pedestrian safety and comfort Two examples have occurred since 2016. The development of the 21st Street Bike Boulevard used traffic calming to optimize 21st Street to make it more comfortable for biking and walking.[3] The Neighborhood Traffic Management Program, is a comprehensive initiative that aims to maintain or improve existing neighborhood environments through the application of the 5 Es; Education,	Ongoing

[1] https://assets.lawrenceks.org/mpo/pedplan/RPP-CompleteVersion.pdf
[2] https://lawrenceks.org/wp-content/uploads/2019/10/NonMotorizedPolicy.pdf
[3] https://lawrenceks.org/bike-blvds

Encouragement, Enforcement, Evaluation and Engineering. The program reduced speed limits on neighborhood streets and will use temporary engineering solutions.[4]	
Implement a traffic safety campaign (education and enforcement) The Neighborhood Traffic Management Program is a comprehensive initiative that aims to maintain or improve existing neighborhood environments through the application of the 5 Es; Education, Encouragement, Enforcement, Evaluation and Engineering. The program reduced speed limits on neighborhood streets and will use temporary engineering solutions.[5]	Began 2020, ongoing
Establish dedicated funding source for pedestrian improvements In 2016, the first set aside funding for standalone bicycle and pedestrian projects in Lawrence was established. Furthermore, a sales tax referendum passed in November 2017 allocated a portion of the funding towards non-motorized projects for the 10-year life of the sales tax (sunsetting in April 2029). The sales tax referendum will need to be renewed by voters, so this isn't a permanent funding stream.	Completed
Form or assign responsibilities to an advisory committee The Multi-Modal Transportation Commission was established in January 2017 via resolution 7172. It was re-established in October 2019 to change the name from Transportation Commission to Multi-Modal Transportation Commission and change representation of positions.[6]	Completed
Enforce current sidewalk repair policy or establish new sidewalk repair program In 2019, the City developed a multi-year plan for the Sidewalk Improvement Program, focusing on one area for sidewalk defect and hazard mitigation each year, to assist property owners with sidewalk repair to eliminate sidewalk trip hazards. This program was developed to assist property owners in meeting their legal requirements (Kansas Statute – KSA 12-1801 and 12-1808 – and City Code – Chapter 16, Article 105) by helping identify and repair these hazards, as well as providing technical and financial assistance (where applicable).[7]	Ongoing
Implement the Safe Routes to School program During 2019-2020 a citywide Safe Routes to School Plan was developed for all public elementary and middle schools.[8]	Ongoing
Target resources to non-existing and non-compliant ADA ramps Prior to 2020, ADA ramp funding was grouped with the dedicated pedestrian and bicycle funding which was established in 2016. However, starting in 2020 dedicated funding was budgeted for ADA ramp improvements. 2020's budget was $250,000 and currently $325,000 is budgeted yearly until 2029.	Ongoing
Target resources to the priority network The Non-Motorized Projects Prioritization Program provides points to projects which improve connectivity along priority networks recognized in adopted plans are accorded the highest weight. This criterion follows the Regional Pedestrian Plan Priority network: Safe Routes to School Routes without sidewalks on either side followed by Arterial and Collector Streets without sidewalks on either side followed by Arterial Streets, Collector Streets with sidewalk on one side and SRTS routes with sidewalk on one side and finally Local streets without sidewalk on either side and Local streets with sidewalk on one side. The maximum number of points for pedestrian projects in the Non-Motorized Projects Prioritization Program is 21. The three points categories are priority network, pedestrian access to priority destinations, and safety (roadway volume and crossings). The Multi-Modal Transportation Commission then uses the scores as a factor for deciding which	Ongoing

[4] https://cdn.lawrenceks.org/wp-content/uploads/2019/10/Resolution-7272.pdf
[5] https://cdn.lawrenceks.org/wp-content/uploads/2019/10/Resolution-7272.pdf
[6] https://lawrenceks.civicweb.net/portal/members.aspx?id=38, https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/EST2LMikre9Lt3TKkVa-Jd8BXh_aTx8O-EtO_jX9BZIvcQ, https://lawrenceks.civicweb.net/document/24263/Ord9722.pdf
[7] https://lawrenceks.org/sidewalk-improvement
[8] https://lawrenceks.org/safe-routes

projects to fund with the dedicated bicycle and pedestrian funding. Other non-exclusive factors include: equity in project distribution (environmental justice areas), opportunities for parallel routes, grant funding opportunities, economies of scale, cost sharing opportunities, available funding, other relevant factors such as cultural, and social and economic benefit.	
Track and measure progress of Lawrence's pedestrian network, amenities, and programming	Ongoing
Apply for Walk Friendly Community status In April 2017, the city received a "Silver" designation from the national Walk Friendly Communities program. Scores range from Bronze (lowest), Silver, Gold, to Platinum (highest). The Walk Friendly designation is based on community efforts to expand opportunities for walking and to improve pedestrian safety across a wide range of programs and activities, from planning and design to outreach and law enforcement. As part of their assessment the Walk Friendly Communities program provided a report card, which provided reviews of the status of walking, planning, education/encouragement, engineering, enforcement, and evaluation.[9] This application needs to be resubmitted in December 2021.	Silver designation

Pedestrian-Bicycle Issues Task Force Report – February 2016

The Pedestrian-Bicycle Issues Task Force, which was created by the City Commission, completed a report in January 2016 with visions, recommendations, and priorities.[10] Many of the recommendations and priorities have been completed or are ongoing. *Table 2* displays the relevant pedestrian recommendations and priorities and their status.

Table 2: Pedestrian-Bicycle Issues Task Force Recommendation/Priority and Status

Recommendation/Priority	Status
Create a consolidated transportation commission. The Multi-Modal Transportation Commission was established in January 2017 via resolution 7172. It was re-established in October 2019 to change the name from Transportation Commission to Multi-Modal Transportation Commission and change representation of positions.[11]	Completed
Earmark 0.05% in the renewal of the infrastructure sales tax to fund standalone bicycle and pedestrian projects. A sales tax referendum passed in November 2017 allocated a portion of the funding towards non-motorized projects for the 10-year life of the sales tax (sunsetting in April 2029). The sales tax referendum will need to be renewed by voters, so this isn't a permanent funding stream.	Completed
Include funding in the Capital Improvement Plan for improving pedestrian facilities since the sidewalk improvement program was not enforced. In 2016, the first set aside funding for standalone bicycle and pedestrian projects in Lawrence was established. A portion of the 10-year sales tax referendum which passed in November 2017 allocated a portion of the funding towards non-motorized projects. Further, beginning in 2019, the City developed a multi-year plan for the Sidewalk Improvement Program, focusing on one area for sidewalk defect and hazard mitigation each year, to assist property owners with sidewalk repair to eliminate sidewalk trip hazards. This program was developed to assist property owners in meeting their legal requirements (Kansas Statute – KSA 12-1801 and 12-1808 – and City Code –	Completed

[9] https://assets.lawrenceks.org/mpo/pedplan/WFCReportCard-Lawrence.pdf
[10] https://assets.lawrenceks.org/assets/boards/pedestrian-bicycle/PBITF_Final_Report_2.29.16.pdf
[11] https://lawrenceks.civicweb.net/portal/members.aspx?id=38, https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/EST2LMikre9Lt3TKkVa-Jd8BXh_aTx8O-EtO_jX9BZIvcQ, https://lawrenceks.civicweb.net/document/24263/Ord9722.pdf

Chapter 16, Article 105) by helping identify and repair these hazards, as well as providing technical and financial assistance (where applicable).[12]	
Provide funding for standalone projects not connected to new road construction or reconstruction. As a result of Pedestrian-Bicycle Issues Task Force report, the first set aside funding for standalone bicycle and pedestrian projects was established in 2016. Additionally, a portion of the 10-year sales tax referendum which passed in November 2017 allocated a portion of the funding towards non-motorized projects.	Completed
Achieve pedestrian facilities on at least one side of every street (both sides for arterial streets). These gaps are included as projects in the Non-Motorized Projects Prioritization Program utilized by the Multi-Modal Transportation Commission to distribute dedicated bicycle and pedestrian funding.[13] The Policy provides points to projects which improve connectivity along priority networks recognized in adopted plans are accorded the highest weight. This criterion follows the Regional Pedestrian Plan Priority network: Safe Routes to School Routes without sidewalks on either side followed by Arterial and Collector Streets without sidewalks on either side followed by Arterial Streets, Collector Streets with sidewalk on one side and SRTS routes with sidewalk on one side and finally Local streets without sidewalk on either side and Local streets with sidewalk on one side.	Ongoing
Assign and develop staff and invest in tools needed to provide a coordinated approach to planning, engineering, community education, encouragement, enforcement, and evaluation.	Ongoing
Connect residents to neighborhood destinations by filling gaps in the arterial and collector street sidewalk network. These gaps are included as projects in the Non-Motorized Projects Prioritization Program utilized by the Multi-Modal Transportation Commission to distribute dedicated bicycle and pedestrian funding.[14] The Policy provides points to projects which improve connectivity along priority networks recognized in adopted plans are accorded the highest weight. This criterion follows the Regional Pedestrian Plan Priority network: Safe Routes to School Routes without sidewalks on either side followed by Arterial and Collector Streets without sidewalks on either side followed by Arterial Streets, Collector Streets with sidewalk on one side and SRTS routes with sidewalk on one side and finally Local streets without sidewalk on either side and Local streets with sidewalk on one side.	Ongoing
Include high quality pedestrian and bicycle facilities when new road construction and existing road reconstruction projects are completed. As road projects are in design the bikeway network is reviewed to determine the size of the sidewalk – a regular sidewalk or a wider shared use path. Examples of large road projects completed/in construction now with pedestrian facilities include E. 19th Street and E. 23rd Street.	Ongoing
Invest in facilities that provide safer conditions and access for seniors and people with disabilities.	Ongoing
Provide safe routes to schools (SRTS) by filling gaps, repairing, and maintaining sidewalks within the designated SRTS network. This has been ongoing by the city obtaining three safe routes to school infrastructure grants (2016, 2017, and 2020). Once all construction is completed almost 3 miles of sidewalk will be installed.	Ongoing
Actively pursue nationally accepted Walk-Friendly designations as roadmaps to progress and points of pride. In April 2017, the city received a "Silver" designation from the national Walk Friendly Communities program. Scores range from Bronze (lowest), Silver, Gold, to Platinum (highest). The	Silver designation

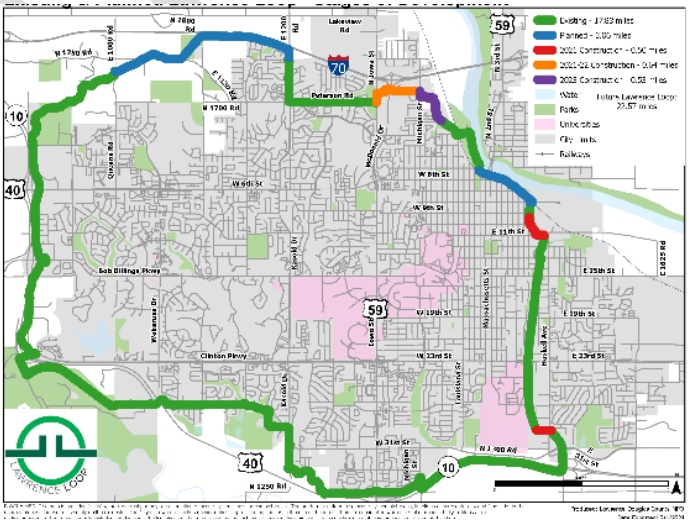
[12] https://lawrenceks.org/sidewalk-improvement
[13] https://lawrenceks.org/wp-content/uploads/2019/10/NonMotorizedPolicy.pdf
[14] https://lawrenceks.org/wp-content/uploads/2019/10/NonMotorizedPolicy.pdf

Walk Friendly designation is based on community efforts to expand opportunities for walking and to improve pedestrian safety across a wide range of programs and activities, from planning and design to outreach and law enforcement. As part of their assessment the Walk Friendly Communities program provided a report card, which provided reviews of the status of walking, planning, education/encouragement, engineering, enforcement, and evaluation.[15] This application needs to be resubmitted in December 2021.	

Infrastructure

- Installation of several years' worth of Kansas Department of Transportation (KDOT) funded Transportation Alternatives (TA) sidewalk and bike projects including the tunnel under Iowa/19th Streets and 9.75 miles of new sidewalk.
    - Safe Routes to School projects
        - 2016 – 0.4 mile
        - 2017 – 1.68 miles
        - 2020 – 0.90 miles
    - The Lawrence Loop has several committed projects funded by TA grants as shown in *Figure 1*.
        - 2021 Construction – E. 29th Street from the Haskell Rail Trail to Haskell Lane and from E. 11th Street to E. 9th Street along Delaware Street and northeast of Hobbs Park – .50 miles
        - 2021-2022 Construction – Michigan Street to Peterson Road (including tunnel under McDonald Road) – .64 miles
        - 2023 Construction – Michigan Street to Sandra Shaw Park .53 miles

Figure 1: Existing and Planned Lawrence Loop - Stages of Development



- Sidewalks as part of larger road projects
    - Kasold Dr. (6th St. to Bob Billings) – completed in 2017 – 1 mile
    - Kasold Dr. (Clinton Pkwy to Hyvee) – completed in 2018 – 0.2 mile
    - 19th St. (O'Connell Rd. to Harper St.) – under construction 2020/2021 – 0.54 mile
    - Queens Rd. (6th St. to North City Limits) – planned 2021 – 0.75 miles
    - 23rd St. (Haskell Ave to East City Limits) – planned 2021/2022 – 2.01 miles

[15] https://assets.lawrenceks.org/mpo/pedplan/WFCReportCard-Lawrence.pdf

- The enforcement of the Sidewalk Improvement Program which led to 83 miles of sidewalk being repaired in year 1 and 2. Year 3 of the program is in progress in 2021.[16]
- It is a City policy for residential streets to have streetlights at intersections and in each cul-de-sac. Streets with the most traffic generally have more lights than residential streets. On average, the city has about 11.5 streetlights for each mile of street. The City pays a per light fee. An internal city audit was conducted in 2009 which provided additional information about the street lighting program. [17]

Recognition

- In April 2017, the city received a "Silver" designation from the national Walk Friendly Communities program. Scores range from Bronze (lowest), Silver, Gold, to Platinum (highest). The Walk Friendly designation is based on community efforts to expand opportunities for walking and to improve pedestrian safety across a wide range of programs and activities, from planning and design to outreach and law enforcement. As part of their assessment the Walk Friendly Communities program provided a report card, which provided reviews of the status of walking, planning, education/encouragement, engineering, enforcement, and evaluation.[15] The lowest category was evaluation and suggested expanding to automated pedestrian counts and conducting more road safety assessments (building off the 2015 road safety assessment of 19th Street from Barker Avenue to Iowa Street) or more informal walk audits.[18]

Advisory Structure

- The Multi-Modal Transportation Commission (MMTC) was established in January 2017 via resolution 7172. This was a direct outcome of the Pedestrian-Bicycle Issues Task Force report and the Regional Pedestrian Plan. It was re-established in October 2019 to change the name from Transportation Commission to Multi-Modal Transportation Commission and change representation of positions.[19]
- The MMTC works to advance the health, safety, and welfare of all residents of the City of Lawrence through strong multi-modal transportation planning. Multi-modal transportation planning facilitates access to transportation for all residents of the community and has been shown to be an effective tool in reducing energy dependency and traffic congestion.

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[16] https://lawrenceks.org/sidewalk-improvement
[17] https://assets.lawrenceks.org/assets/lks/files/street-light-report_0.pdf
[18] https://assets.lawrenceks.org/mpo/corridor/19thStRSA.pdf
[19] https://lawrenceks.civicweb.net/portal/members.aspx?id=38,
Resolution No. 7172 - https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/EST2LMikre9Lt3TKkVa-Jd8BXh_aTx8O-EtO_jX9BZIvcQ,
and Ordinance No. 9722 https://lawrenceks.civicweb.net/document/24263/Ord9722.pdf, and Bylaws - https://lawrenceks.civicweb.net/document/24261/MMTC_Bylaws_9_17_2019.pdf

- The MMTC's 2021 workplan and 7 goals can be viewed at https://lawrenceks.civicweb.net/document/73860/MMTC_Calendar_8_2_2021.pdf?handle=61106305F6C74F8B80B9550E23A666AB.
- The MMTC allocates the dedicated pedestrian/bicycle funding using the Non-Motorized Projects Prioritization Program.
- The MMTC reviews transportation projects and provides recommendations to the City Commission.

Programs

- Dedicated city pedestrian/bicycle funding,
- Enforcement of the Sidewalk Improvement Program,
- Establishment and implementation of the Neighborhood Traffic Management Program,
- Development and implementation of the Lawrence Safe Routes to School Plan,
- Improvement of the right-of-way management program,
- Signal coordination and pedestrian crossing time updates.

Dedicated city pedestrian/bicycle funding

Prior to 2016, bicycle and pedestrian projects, including sidewalks, were only included in larger Capital Improvement Program (CIP) projects, or funded through grant programs. In 2016, the first set aside funding for standalone bicycle and pedestrian projects in Lawrence was established. Furthermore, after the sales tax referendum passed in November 2017, the city allocated a portion of the funding towards non-motorized projects for the 10-year life of the sales tax (sunsetting in April 2029). The sales tax referendum will need to be renewed by voters. This budgeting reflects a recommendation from the Pedestrian-Bicycle Issues Task Force. Further, the line item in the city budget is not a permanent source of funding. Beginning in 2020, there is dedicated ADA ramp funding. Prior to 2020, the ADA ramp funding was part of the overall pedestrian and bicycle funding.

Municipal Services and Operations (MSO) anticipates receiving $300,000 of Community Development Block Grant (CDBG) per year beginning in 2021 and will use a portion of these funds to complete sidewalk gaps and reconstruct ramps to meet ADA requirements. Additionally, as Lawrence Transit implements bus stop improvements, sidewalk adjacent to bus stops are improved to meet ADA standards. In the current city budget $100,000 is programmed for Sidewalk Hazard Urgent Repair in 2021 and 2022.

Table 3 displays the anticipated funding available for bicycle and pedestrian projections including set aside sales tax funding, funded sidewalk hazard urgent repair, anticipated Community Development Block Grant (CDBG) funding per year, and awarded Kansas Department of Transportation (KDOT) grants for bicycle and pedestrian projects. Since the first set aside bicycle and pedestrian projects in 2016, it is projected there will be over to $20.3 million available for bicycle and pedestrian related projects by the end of 2029.

Table 3: Anticipated Bicycle and Pedestrian Funding

	2016	2017	2018	2019	2020	2021	2022
Dedicated Pedestrian and Bicycle Funding	$ 200,000	$ 450,000	$ 200,000	$ 600,000	$ 500,000	$ 675,000	$ 675,000
Dedicated ADA Ramp Funding	Included in pedestrian/bicycle funding				$ 250,000	$ 325,000	$ 325,000
Sidewalk Hazard Urgent Repair	-	-	-	-	-	$ 100,000	$ 100,000
Community Development Block Grant (CDBG) Sidewalk	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 300,000	$ 300,000
KDOT Administered Grants*	-	-	$ 2,057,000	$ 394,000	-	$ 2,276,000	-
Total	$ 300,000	$ 550,000	$ 2,357,000	$ 1,094,000	$ 850,000	$ 3,676,000	$ 1,400,000

	2023	2024	2025	2026	2027	2028	2029
Dedicated Pedestrian and Bicycle Funding	$ 675,000	$ 675,000	$ 702,000	$ 730,080	$ 759,283	$ 789,655	$ 821,241
Dedicated ADA Ramp Funding	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000
Sidewalk Hazard Urgent Repair	-	-	-	-	-	-	-
Community Development Block Grant (CDBG) Sidewalk	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000
KDOT Administered Grants*	$ 564,000	-	-	-	-	-	-
Total	$ 1,864,000	$ 1,300,000	$ 1,327,000	$ 1,355,080	$ 1,384,283	$ 1,414,655	$ 1,446,241
						Grand Total	$ 20,318,258

*Safe Routes to School infrastructure, 19th/Iowa tunnel, Lawrence Loop segments (8th St - 11st St, 29th St, Peterson Rd to Michigan St, Michigan St to Sandra Shaw Trail), and the Naismith Drive Mobility Enhancement projects. Only awarded grants as of 8.30.21 are included in this table.
**As Lawrence Transit implements bus stop improvements, sidewalk adjacent to bus stops are improved to meet ADA standards.
***Additional City and private roadway and other capital projects may also have replaced or completed sidewalk gaps, since these sections were part of larger projects, they are not tracked separately.

The Multi-Modal Transportation Commission allocates the yearly funding towards pedestrian and bicycle facilities utilizing the Non-Motorized Projects Prioritization Program to determine which projects the dedicated bicycle and pedestrian infrastructure funding will prioritize.[20] The Program assigns points to projects based on priority networks, pedestrian access to priority destinations, safety, adopted plan priorities, and bicycle demand model. Safe Routes to School routes receive points based on the type of road and sidewalk presence (none on either side or only on one side). This policy was used to select projects for the dedicated bicycle and pedestrian funding in 2018 and 2019. Beginning in 2020, the policy was used to annually develop a five-year plan for non-motorized projects.

Enforcement of the Sidewalk Improvement Program

Lawrence contains 486+ miles of sidewalks, and many of those miles of sidewalks are in poor condition. In 2019, the City developed a multi-year plan for the Sidewalk Improvement Program, focusing on one area for sidewalk defect and hazard mitigation each year, to assist property owners with sidewalk repair to eliminate sidewalk trip hazards. This program was developed to assist property owners in meeting their legal requirements (Kansas Statute – KSA 12-1801 and 12-1808 – and City Code – Chapter 16, Article 105) by helping identify and repair these hazards, as well as providing technical and financial assistance (where applicable).[21] Additionally, as part of the program, the City is improving ADA sidewalk ramps along the target routes.

Financial Assistance is available for qualifying property owners who utilize the city's contractor and submit the appropriate assistance documents. Find more information about income-based assistance, cost-sharing or out-of-zone assistance at https://lawrenceks.org/sidewalk-improvement/#FinancialAid.

[20] https://lawrenceks.org/wp-content/uploads/2019/10/NonMotorizedPolicy.pdf

[21] https://www.ksrevisor.org/statutes/chapters/ch12/012_018_0001.html, https://www.ksrevisor.org/statutes/chapters/ch12/012_018_0008.html, https://assets.lawrenceks.org/city-code/chapter16.pdf

Sidewalk Hazards fall into one of seven categories:

1. Vertical Separation - Part (or all) of one piece of sidewalk that is one-half inch or higher than the piece next to it.

2. Horizontal Separation – A gap or opening of one-half inch or greater between concrete panels or bricks, or between a cracked concrete panel.

3. Deterioration – Spalling, scaling, cracking or delamination of sidewalk causing deterioration that may catch the foot.

4. Peaking and/or Dipping – Area in the sidewalk where adjacent concrete panels peak or dip more than three inches in relation to the established sidewalk grade.



5. Vegetative Obstruction – Overgrown trees (including tree roots), plants, shrubs, grass or any other vegetation that hinders or prevents the use of the sidewalk. If it is determined that a street tree root (or any other City infrastructure) is the cause of the hazard, the city will be responsible for repairing the hazard.


6. Loose & Depressed Bricks– Sidewalks that have broken, missing, loose, raised or depressed bricks will be marked as a hazard for repair.



7. Non-Level Brick Cross Slope– Sidewalks made of brick that are not level from side-to-side will be marked as a hazard for repair.

Through the Sidewalk Improvement Program, the City provides extensive technical help as well as financial assistance for qualifying property owners. Financial assistance includes income-based assistance, cost-sharing grant, and out-of-zone financial assistance.[22]

To begin the enforcement of the Sidewalk Improvement Program, the city was divided into eight zones. Year 1 inspected the northwest section of the city bounded by Bob Billings Parkway, Wakarusa Drive, and the Bauer Farm development north of 6th Street and Folks Road. Year 1 repaired 432 hazards. Year 2 of the program was bounded on the north by West 23rd Street, on the west by Iowa Street. The southern boundary was the South Lawrence Trafficway/K-10 to Michigan Street and 31st Street to Louisiana Street. The zone was bounded on the east by Barker Avenue, Vermont Street, Montana Street and Louisiana Street. Year 2 repaired 1,036 hazards. 83 miles of sidewalk in year 1 and 2 combined.

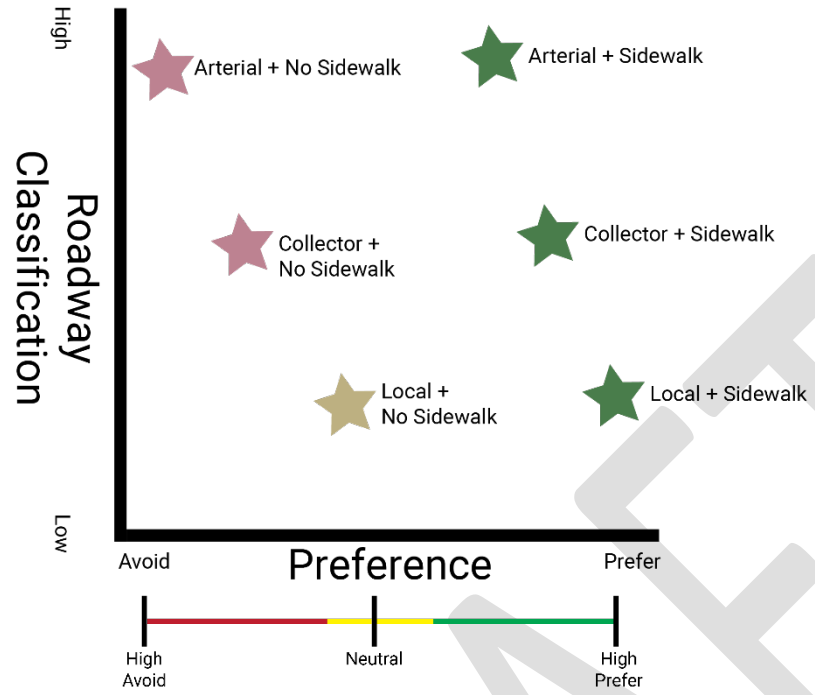
The 3rd year of the Sidewalk Improvement Program began in 2021 using a different data-driven process than the previous two phases incorporating public feedback about the program. Staff utilized a shortest path analysis in GIS, which analyzes routes that take the shortest path between identified origins and destinations. The model generates route paths from pedestrian origins to destinations, while adding value for:

- Route preference (Ex: local road with sidewalk vs. arterial with no sidewalk)
- Destination type and distance (Ex: schools weighted over retail)
- Transportation Disadvantaged Populations (Block groups with higher than average: minorities, single-parent households, zero vehicle households, less than a high school diploma, Ages under 18 and over 65, low-moderate income)

These values were calculated within the model to produce a prioritized list of routes. *Figure 2* shows the higher preference for routes with sidewalks, especially local roads with sidewalks.

[22] https://lawrenceks.org/sidewalk-improvement

Figure 2: Route Preference



The destinations utilized in the weighting process are shown in *Table 4*.

Table 4: Destination Weighting

Facility Category	Within 1/8 mile	Within 1/4 mile	Within 1/2 mile
Schools K-12	12 (720)	8 (480)	4 (240)
Park Entry Points, Public Attraction, Public Transit Stops	6	4	2
Public Government Institution, Health, Daycare, Higher Education, Non Profit, Retail	3	2	1

Transportation Disadvantaged Population data was evaluated and weighted 25%. The Transportation Disadvantaged Population characteristics includes households with a person who has a disability, people who have less than a high school education, minorities, single parent households, zero vehicle households, population under 18 and over 65, and low-moderate income households. The City average was found for each topic except for income (see *Table 5*). One point was assigned if the block group was equal to or 20 percent higher than the Lawrence average. Two points were attributed if the block group was 20 percent to 40 percent of the Lawrence average. Three points were assigned if the block group was greater than 40 percent higher than the Lawrence average. Low-moderate income data is the Community Development Block Grant (CDBG) identified low-moderate income areas. A block group is low-moderate income if the low-moderate income percentage for the block group is 51.0%. The 27

block groups that are considered low-moderate income were stratified into 3 groups of 9 and the highest percentage of low-moderate income were assigned three points, then two points, and lastly one point. Transportation Disadvantaged Population scores which are higher reflect areas of additional priority to provide improved multi-modal trip making for areas with transportation disadvantages.

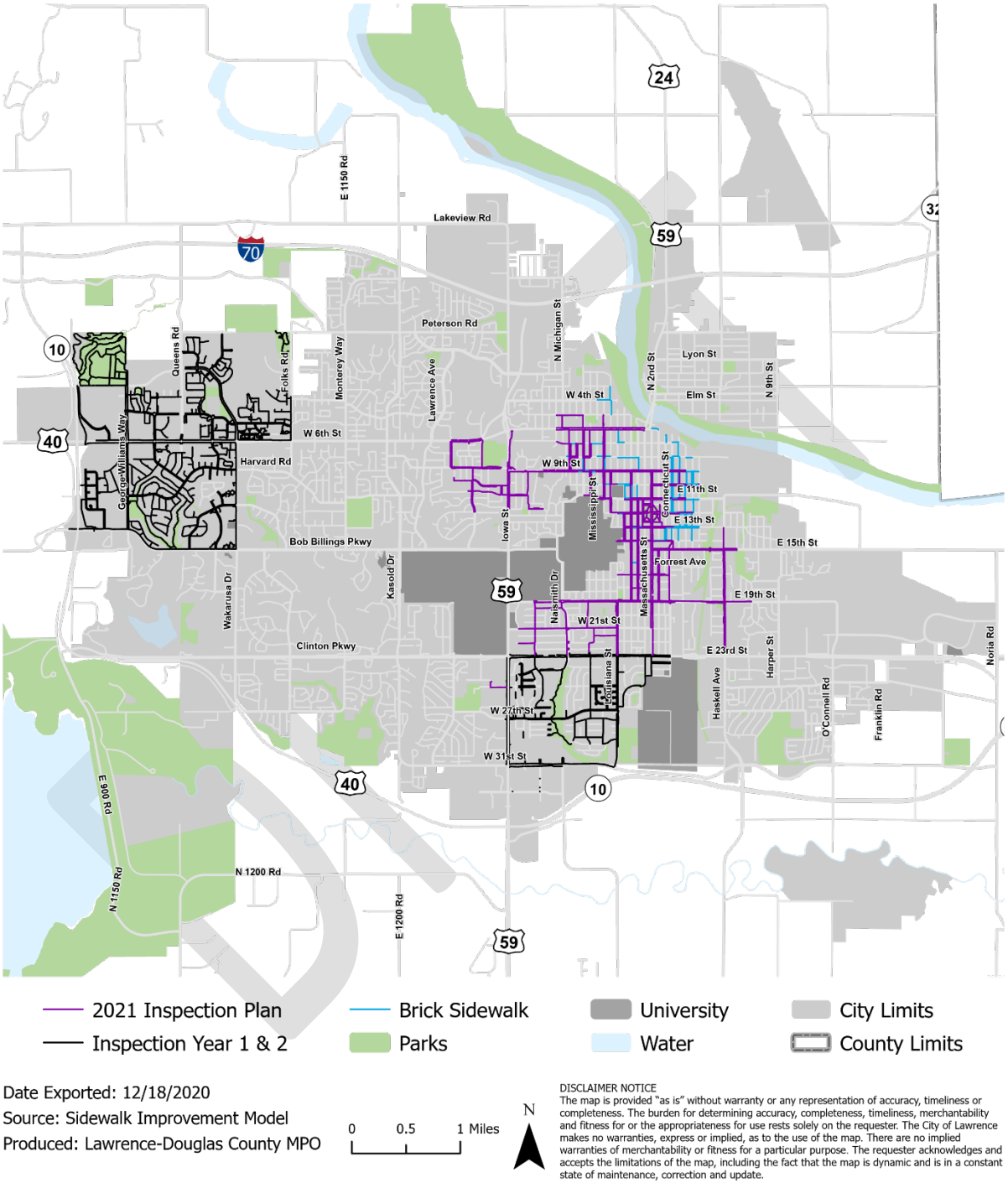
Table 5: Transportation Disadvantaged Population Scoring

Topic	Lawrence Average	1 Point	2 Points	3 Points
Low-moderate CDBG income		51.0% to 62.4%	62.5% to 78.9%	Greater than 79.0%
Minority	14.7%	14.7% to 34.6%	34.7% to 54.6%	Greater than 54.7%
Households with an individual with a mobility disability	19.7%	19.7% to 39.6%	39.7% to 59.6%	Greater than 59.7%
Less than high school diploma	4.6%	4.6% to 24.5%	24.6% to 44.5%	Greater than 44.6%
Single parent household	32.0%	32.0% to 51.9%	52.0% to 71.9%	Greater than 72.0%
Households without vehicles	7.6%	7.6% to 27.5%	27.6% to 47.5%	Greater than 47.6%
Youth (under 18)	16.3%	16.3% to 36.2%	36.3% to 56.2%	Greater than 56.3%
Senior citizens (65+)	10.5%	10.5% to 30.4%	30.5% to 50.4%	Greater than 50.5%

Source: 2018 American Community Survey 5-year Estimates for all metrics except income and 2015 American Community Survey 5-year Estimates for CDBG Income. Points were assigned based on the percentage of each measure per block group. Then one point was assigned if the block group was equal to or 20 percent higher than the Lawrence average. Two points were attributed if the block group was 20 percent to 40 percent of the Lawrence average. And three points were assigned if the block group was greater than 40 percent higher than the Lawrence average. Low-moderate income data is the Community Development Block Grant (CDBG) identified low-moderate income areas. A block group is low-moderate income if the low-moderate income percentage for the block group is 51.0%. The 27 block groups that are considered low-moderate income were split into 3 groups of 9 and the highest percentage of low-moderate income were assigned three points, then two points, and lastly one point. The FFY21 TIP Transportation Disadvantaged Population was created using the county average, since the MPO is countywide. This analysis was developed for the sidewalk improvement area discussion in October 2020; therefore, it only uses the Lawrence average. Updated on 9/9/2021 to include 53 block groups.

Figure 3 displays the 2021 inspection plan in purple (1/8th of the remaining uninspected sidewalks). Years 1 and 2 are shown in black. The blue lines represent brick sidewalks which were not part of the inspection process. A community stakeholder group is working on brick sidewalks and street standards.

Figure 3: 2021 Sidewalk Improvement Program



Following City Commission approval of the data-driven approach on January 5, 2021, staff began the inspection process.[23] The inspections revealed conditions were worse than expected. Many segments of

[23] https://lawrenceks.civicweb.net/Portal/MeetingInformation.aspx?Org=Cal&Id=652

sidewalk (block-end to block-end) may need to be reconstructed and not spot-repaired. This discovery led to a two-project approach to fixing the sidewalks.

The first project will be a continuation of the Sidewalk Improvement Program repair project which addresses the sidewalk segments where spot-repairs are warranted. These repair projects will be constructed in the fall of 2021.

The second project will be a new project to design and reconstruct sidewalk segments where spot-repairs are not feasible. While the sidewalk data is still being analyzed to determine the scope of the project, approximately 90 blocks (single side) are on the list to be reconstructed. There is no budget for this project and the total cost for reconstruction of these blocks is estimated between $6-$13 million. Reconstruction of these blocks would likely require a resolution from the City Commission. Although these priority routes were known to be in poor condition, the magnitude of the problem was not foreseen, and the implications of full design and reconstruction were not contemplated. Nonetheless, future inspection phases will utilize the data-driven process.

Establishment and implementation of the Neighborhood Traffic Management Program

The City of Lawrence's Neighborhood Traffic Management Program, which was established via Resolution 7272, is a comprehensive initiative that aims to maintain or improve existing neighborhood environments through the application of the 5 Es; Education, Encouragement, Enforcement, Evaluation and Engineering.[24]

Program Efforts

The Neighborhood Traffic Management Program uses a comprehensive approach to address unsafe driving on the City's neighborhood streets:

- Speed limit reductions on many neighborhood streets
- Community outreach and media campaign
- Traffic law enforcement and education
- Temporary engineering solutions
- Evaluation with each approach

Neighborhood Traffic Management Pilot Program

Lawrence is taking a fresh approach to addressing traffic-related concerns within residential areas throughout the city. This pilot program aims to improve the quality of life by reducing speeding and cut-through traffic on local and collector streets. Other concerns related to traffic safety involving pedestrians, bicyclists and motorists may also be addressed with this program.

Managing local traffic to enhance safety can be accomplished through a wide range of strategies including enforcement, education, or physical infrastructure changes. Tools to implement these strategies include automated speed radar signs, curb extensions/neckdowns, chicanes, speed cushions,

[24] https://cdn.lawrenceks.org/wp-content/uploads/2019/10/Resolution-7272.pdf

traffic circles or mini roundabouts, raised pedestrian crosswalks, signage, and more. Each of these strategies and tools are evaluated on a case-by-case basis and will consider type of street, surrounding land use, and existing traffic volumes of all modes.

Safer Neighborhood Speeds Campaign

The City of Lawrence launched the Safer Neighborhood Speeds education campaign in January 2021. With fewer students on university campuses due to the pandemic, the launch of the campaign emphasized neighborhood and K-12 school engagement with some university outreach. The Fall 2021 effort will focus on reaching university students. The campaign's overarching goal is to improve safety on neighborhood streets in Lawrence and focuses on reminding people driving to slow down, look out for others, and stop for people wanting to cross the street. *Figure 4* displays the Safer Speed designs used on yard signs and stickers.

Figure 4: Safer Speed Yard Signs and Stickers

The program included a pre-campaign and post-campaign survey. Of the 240 post-campaign survey respondents (not the student specific post-campaign survey), 88% had seen the Safer Neighborhood Speeds campaign and 85% were aware of the speed limit reduction prior to taking the survey. Two out of three respondents who were familiar with the campaign reported first seeing it on yard signs. Since seeing the campaign, respondents reported their driving behavior has changed in the following ways:

- 40% say they drive more slowly.
- 40% say they set aside or ignore distractions more often.
- 49% say they stop more often for people who want to cross the street.

When asked about the impact of the campaign, survey respondents who expressed an opinion stated the following:

- 10% agreed or strongly agreed that people are driving more slowly since before the campaign, whereas 26% were unsure.
- 32% perceive the campaign to be somewhat or very successful. Of the 43% who thought it was unsuccessful, respondents overwhelmingly asked for stronger police enforcement of speed limits. The remaining 25% of respondents were unsure.
- 50% would like the City to continue or expand traffic safety outreach and education efforts, whereas 19% are unsure.

The campaign was refreshed in August 2021 to specifically reach university students as they return to town for in-person classes. The campaign will conclude with a short survey targeted specifically at university students. [Update tense and add results once completed.]

Neighborhood Streets Speed Limit Reduction

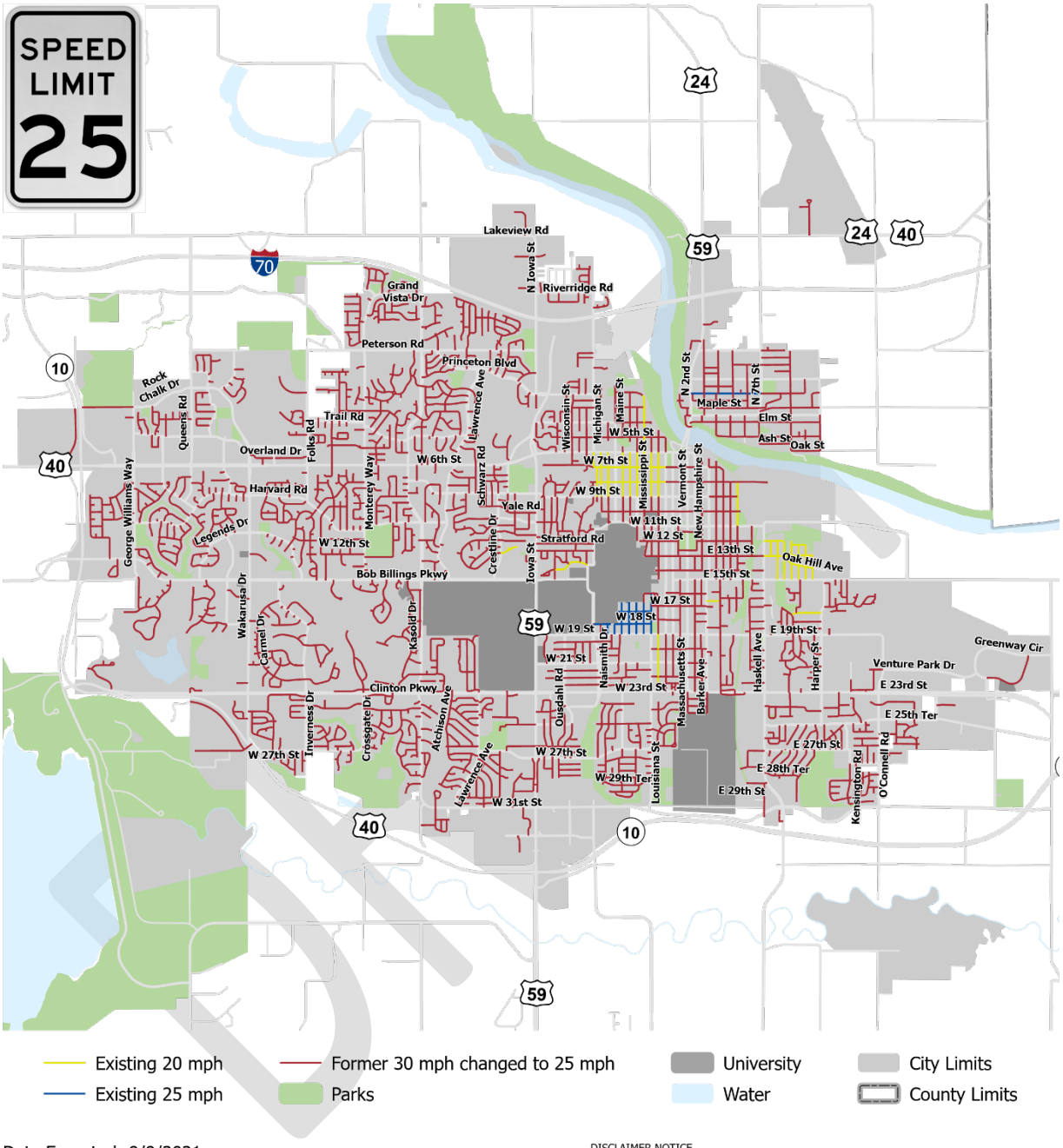
In February 2020, the City posted an online survey asking residents "which speed limit would you prefer as the standard for residential streets in Lawrence?" More than half of the 551 responses indicated a preference the speed limit be lowered from the existing 30 mph. In March 2020, the Multi-modal Transportation Commission voted unanimously to forward a recommendation to City Commission to change the local speed limit to 25 mph. In October 2020, the City Commission approved Ordinance No. 9812 to lower the speed limit.[25]

The City installed 25 mph speed limit signs on all neighborhood streets in Lawrence that are not already posted at 25 mph or less. Any Lawrence neighborhood street that is classified as a "local" street with a current speed limit of 30 mph is included in this project.[26] See *Figure 5* to view the locations.

[25] https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/EUdrieuAELRAiePAvxeZWQ8BZnCSvxry_GYad6cBHveFrQ

[26] https://lawrenceks.org/mso/safer-speeds

Figure 5: Speed Reductions



The Lawrence Police Department enforced the updated speed limit as part of the Neighborhood Traffic Management Program. The enforcement approach was data-driven with speed data collected throughout the city. Enforcement was completed in a phased approach, with Lawrence Police Department first focusing on education and informing drivers about the new speed limits. Lawrence Police Department officers had discretion on the issuance of citations during all phases.

According to the 240 post Safer Neighborhood Speeds Campaign survey respondents, since the 25 mph speed limit signs were installed:

- 46% of respondents report driving slower always or very often, with an additional 26% sometimes doing so.
- 5% report noticing others drive slower always or more often, and 31% sometimes doing so, with 64% reporting others never or rarely drive slower.

Many respondents requested police enforcement of speed limits, while a few community members voiced concern over increased enforcement. Three-quarters of respondents reported not yet noticing the speed limit enforcement efforts in their neighborhoods, although the survey launched within one-month of speed enforcement starting.

The Neighborhood Traffic Management Program is a continuous program which will evaluate on an ongoing basis the impacts of speed reductions and traffic calming. Residents can submit traffic safety concerns at https://lawrenceks.org/traffic-safety.

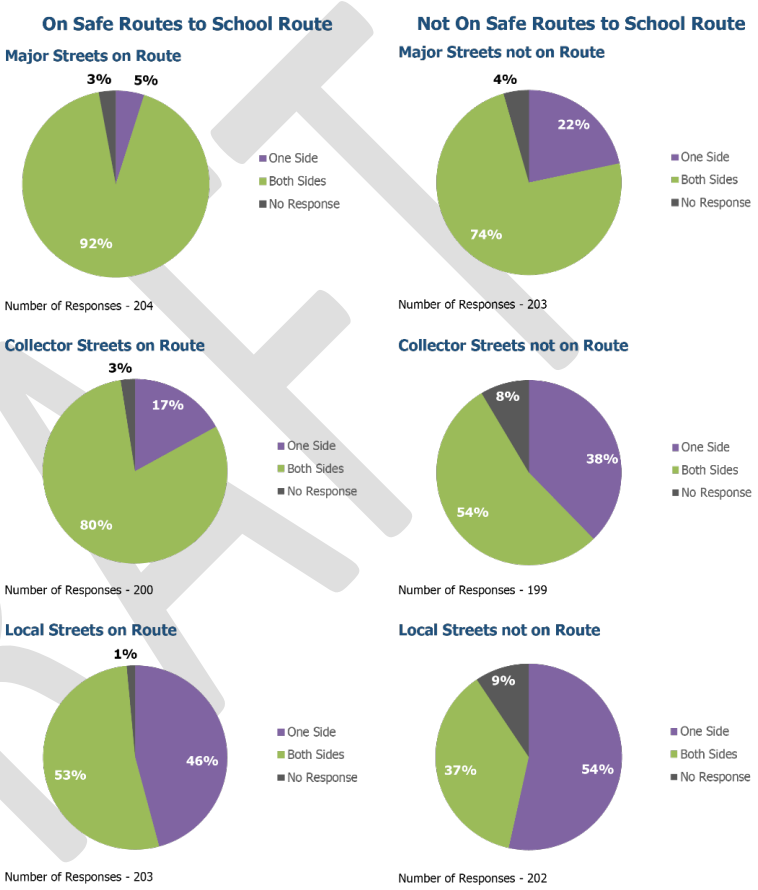
Development of the Lawrence Safe Routes to School Plan

In Lawrence, the Safe Routes to School (SRTS) program is called Be Active Safe Routes.[27] Safe Routes to School is a national program using comprehensive approaches to improving walking and biking for all kids. In addition to improving safety, Be Active Safe Routes benefits communities by reducing traffic congestion and air pollution, increasing the opportunity to be physically active and building community cohesion. The goal of the program is to develop safe routes for all and improve the health and well-being of children by encouraging them to safely walk and bicycle to school.

[27] https://lawrenceks.org/safe-routes

The Lawrence SRTS initiative began in 2014 as collaborative effort between the Lawrence-Douglas County Public Health (LDCPH), USD 497, the City of Lawrence, the Lawrence-Douglas County Metropolitan Planning Organization (MPO) and parents. This Working Group provided the framework for developing the holistic SRTS program, which includes bicycling and walking engagement, encouragement, education, equity, evaluation, and engineering. During the 2019-2020 school year the plan was developed for all USD 497 Lawrence Public School Elementary and Middle Schools. Although input was garnered from each school, this Plan is a citywide plan. Individual school plans should be developed utilizing the template found in the Plan and should identify which of the Safe Route to School strategies the individual school wants to employ to bolster the school's Safe Routes to School efforts. Though the plan was delayed due to the COVID-19 pandemic it was completed in November 2020.

Figure 6: Public Feedback on Priorities for City Funding Sidewalk Gaps from Safe Routes to School Community Engagement

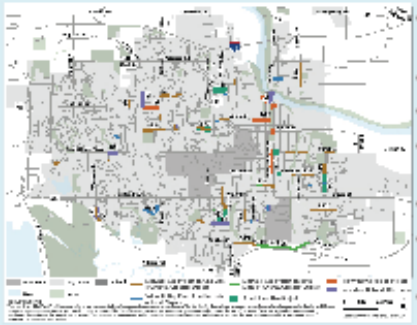
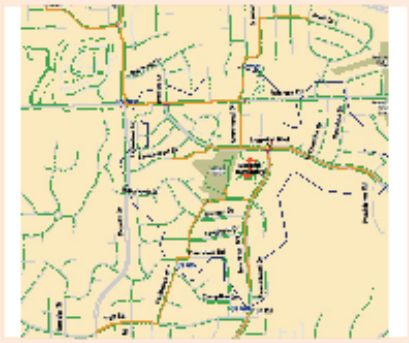
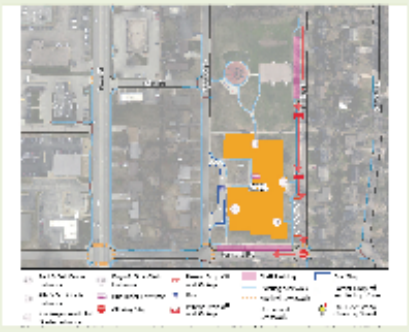


*These questions were asked regarding dedicated city funding to fill gaps. The City of Lawrence Land Development Code requires sidewalk on both sides of the street for new development.

Through the development of the plan the community was engaged in the Parent Survey and a specific feedback packet for each school. The school specific feedback packet asked questions about sidewalk preferences along safe routes to school routes and along streets that are not safe routes to school routes for prioritizing city funding of sidewalk gaps for the Safe Routes to School program. *Figure 6* displays the results of the questions. Respondents thought sidewalk should be located on both sides of the street for all street types. For roads that are not safe routes to school routes, the results indicated a strong desire (74%) to have sidewalks on both sides of major streets regardless of route status. A majority of respondents (54%) felt sidewalk should be on both sides of collector streets. Conversely, many respondents (54%) felt sidewalk should be installed only on one side of local streets. It is perceived respondents indicated city funded sidewalk should only be installed on one side of local streets due to the immense need for sidewalk across the city. Additionally, local streets have lower posted speeds and lower traffic volume which are more comfortable, thus city resources should be distributed across the city.

Through the development of the plan, it became obvious more than one type of map was needed. *Figure 7* displays the elements, uses, developer, and updates for each of the maps. Infrastructure maps are used for planning the infrastructure – where sidewalk needs to be installed, etc. Encouragement maps show the route students should utilize to walk or bike to school. Encouragement maps only show routes which have sidewalk. As projects are completed as identified on the infrastructure map the Infrastructure map and Encouragement maps will display the same information. The last map is a Traffic Circulation map. Prior to the development of this map the procedures for drop off and pick up were communicated individually by each school and were not consistent. The Encouragement and Traffic Circulation maps are located on the Lawrence-Douglas County Public Health's Be Active Safe Routes webpage – beactivesaferoutes.com. The Infrastructure maps are located in Appendix G in the plan on the City's website – Lawrenceks.org/safe-routes.

Figure 7: Safe Routes to School Maps

	Elements	Use	Developer	Updates
Infrastructure  Located: lawrenceks.org/safe-routes	• Establishes routes • Existing crossing guards • Streets • Existing sidewalks • Designated school zones • Posted speed limits • Existing bike facilities • Project listings - separate from the map	City infrastructure planning – determine sidewalk/bike gap projects	SRTS Working Group with USD 497 input	Routes planning & evaluation every 5 years except as necessary due to school boundary change or request from USD 497. The map may be updated to reflect the actual environment (built projects, crossing improvements, etc.) in the intervening years.
Encouragement*  Located: beactivesaferoutes.com	• Simple walking/ biking route map for students and parents • Shows existing infrastructure (sidewalk, crossings, etc) • Includes safety user information, student bus pass info, nearest bus stop on middle school maps	Schools and parents walking and biking to/from school	SRTS Working Group	As necessary, based on known changes to the built environment or items shown on the map.
Traffic Circulation  Located: beactivesaferoutes.com & USD 497 student handbooks and/or websites	• Entrances to school • Drop off/pick up • No parking zones • ADA entrances • Bus pick up/drop off • Crosswalks • Bike racks • Written traffic procedure if applicable	Schools and parents for drop off/ pick up procedures	USD 497 with City's technical guidance upon request	As necessary, based on known changes to the built environment or items shown on the map.

*Eventually the SRTS Encouragement map will have the same routes as the infrastructure map once sidewalk/bike gap projects are constructed.

The plan also called for revisions to the School Area Traffic Control Policy which was last updated in July 2008 (Res. 6777).[28] Resolution 7390 passed on August 17, 2021, updated the School Area Traffic Control Policy (SATCP) to include:

- Addition of middle schools.
- Addition of new traffic control devices: Pedestrian Hybrid Beacons and Rectangular Rapid Flashing Beacons.
- Evaluation criteria for Adult Crossing Guards uses the same technical criteria to establish guards but adds criteria to install crossing guards in "potential locations" and allows existing crossing guard locations that meet 80% of the criteria to have an additional year for evaluations. The policy also prioritizes guards on established safe routes and establishes evaluation schedule to adapt to changes in the built-environment and school boundaries. Re-evaluate criteria for guards that meet 80% warrants, prior to removal.
- New criteria to install crossing guards in potential locations.
- Addition of Safe Routes to School Maps for Encouraging kids to walk and wheel, Planning for Infrastructure improvements and Traffic and Parking Circulation on the school site.
- Establishes processes to request elements and to allow evaluation by the SRTS Working Group, which includes the City of Lawrence, USD 497, Lawrence – Douglas County Metropolitan Planning Organization and Lawrence – Douglas County Public Health).[29]

The School Area Traffic Control Policy can be found at: https://assets.lawrenceks.org/mso/Lawrence_School_Area_Traffic_Control_Policy.pdf.

Another outcome of the Safe Routes to School Plan is the development of a Memorandum of Understanding (MOU) with USD 497. This MOU creates a formalized Safe Routes to School Working group between the City and USD 497 to operationalize Safe Routes to School work. The MOU was approved by the City Commission on August 17, 2021, and by USD 497 on July 12, 2021.[30]

The SRTS Working Group will be the point of contact for Safe Routes to School questions from parents, promoting walking and biking to school days, communicating with Schools, and assist in developing the SRTS Circulation and Encouragement Maps. Members of the SRTS Working Group have varying responsibilities in this process coordinated by the Working Group, which will be formed and staffed by the city.

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[28] https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/ERnTKWdY8MpBoGvxGfelbF8BFH5E58sTapcJ5R_8MWb6fA

[29] Resolution No. 7390 - https://lawrenceks-my.sharepoint.com/:b:/g/personal/webmaster_lawrenceks_org/EQqymabIKUBFqs-OVJsVzNwB0gxi6GtgMPD6K5uQGX7ydQ

[30] https://lawrenceks.civicweb.net/document/75353#page=128&zoom=100,0,0 and http://go.boarddocs.com/ks/usd497/Board.nsf/goto?open&id=C4UJN84D88B6

Improvement of the right-of-way management program

In June 2019, the City established a new right-of-way permit process for the temporary use of the public right-of-way.[31] The public right-of-way includes the entire street, which typically includes the sidewalk. The regulation applies to all temporary users of the right-of-way, including organizations with an agreement (including franchise agreements – typically utility companies) with the City, use the right-of-way on a temporary basis to place barricades, construct, reconstruct, relocate, or maintain facilities permanently located within the right-of-way. A component of the administrative regulations includes temporary traffic control requirements and permits for placement of barricades, cones or equipment that may impact pedestrian, bicycle, or vehicular traffic. If pedestrian accommodations are not correctly followed the temporary traffic control permit will be revoked and the use of the right-of-way must stop. This is monumental because the previous policy did not require a temporary traffic control permit only that temporary traffic control must be used; therefore, when pedestrian accommodations were done incorrectly there was no recourse when signage was not installed correctly as shown in Figure 8.

Figure 8: Incorrect Pedestrian Accommodations in Work Zones

The Temporary Traffic Control Plan must at a minimum have a detour route, including a pedestrian detour route, if appropriate. In work zones where there is sidewalk on the opposite side of the work area, signage is required to be placed prior to the work stating the need to cross the street early. At the site of the sidewalk obstruction a specific type of sign which extends the entire width of the pathway is required. *Figure 9* provides examples of appropriate signage in work zones.

Figure 9: Appropriate Signage in Work Zones

Early warning sign placed to the side of the sidewalk (where it is safe to cross) to allow access to local businesses

Pedestrian barricade placed across the entire pathway at location of closure

[31] https://lawrenceks.org/mso/row-management and https://lawrenceks.org/wp-content/uploads/2021/03/Right-of-Way-Regulations.pdf

If the work zone does not have sidewalk on the opposite side of the road and therefore people can't be routed to the other side of the street, there are additional requirements. Pedestrian detour routes should not be much longer than the original route and should be preserved in the urban and commercial area. A safe, convenient, and accessible travel path which replicates, as nearly as practical, the most desirable characteristics of the existing sidewalk. A smooth, continuous, hard surface should be provided through the entire length of the pedestrian facility. There should be no curbs or abrupt changes in grade or terrain. The width of the existing pedestrian facility should be provided if practical. 60" path is preferable but if not feasible then a minimum of a 48" path with 60"x60" passing zones every 200'. When pedestrian and vehicle paths are rerouted to a closer proximity to each other, consideration should be given to separating them by a temporary traffic barricade. *Figure 10* displays examples of an accessible travel path which replicates the existing condition sidewalk and a temporary traffic barricade to separate pedestrian and vehicle paths.

Figure 10: Appropriate Pedestrian Detours When No Opposite Sidewalk Option

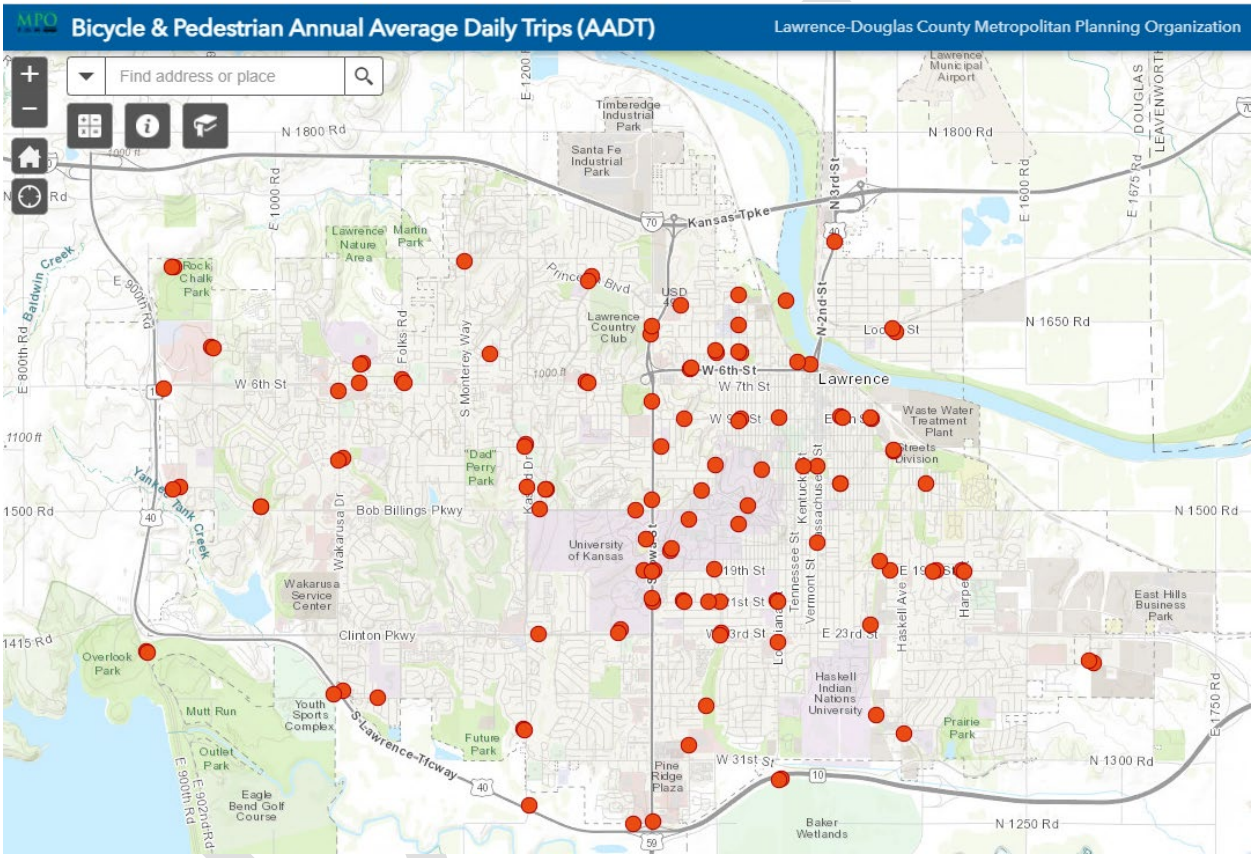
Signal coordination and pedestrian crossing time updates

In 2020-2021, changes were implemented to traffic signal timing on 6th Street (Massachusetts Street to George Williams Drive), Iowa Street (6th Street to 34th Street), and 23rd/Clinton Parkway (Harper Street to Inverness Drive). A consultant studied user data, vehicle travel times and intersection geometrics to improve operations, safety, and minimize vehicle delay along the principal arterial streets (ex. 6th Street and George Williams Way – 6th street has the prioritization). As part of this study the most recent standards from the Institute of Transportation Engineers, Federal Highways Administration, and Manual on Uniform Traffic Control Devices were reviewed for vehicle and pedestrian clearance timings. Based on this review, the vehicle "Yellow" and "Red" and pedestrian "Walk" and flashing "Don't Walk" clearance times were modified, often resulting in increased clearance times for users. Additionally, updated traffic signal coordination plans were developed, and a new schedule deployed throughout the study corridors. As part of the evaluation, the overnight "flash" operations of many signals were changed to more typical operating conditions relying on vehicle and pedestrian detection devices to activate the signal. The removal of "flash" operations provides safety benefits, particularly for pedestrian users who can use the signals to cross major streets safely.

The following corridors will have work completed on them in 2021-2022: N 2nd Street (6th Street to I-70), 19th Street (Iowa Street to Haskell Avenue), 9th Street (Iowa Street to Kentucky Street), Bob Billings (Iowa Street to K-10).

Counts

The Lawrence-Douglas County MPO conducts volunteer collected bicycle and pedestrian counts every September (except for 2020 and 2021 due to COVID-19) since 2009. These counts require three two-hour counts per location (10 am – Noon and 5 pm – 7 pm on a Tuesday through Thursday and one count from Noon to 2 pm on Saturday). In 2020-2021 the MPO conducted a pilot with Municipal Services and Operations (MSO) and Parks and Recreation to test using automated and video counting technology. Mixed results were obtained. These results have not been incorporated into the online interactive map. To view more count documentation or view the map go to https://lawrenceks.org/mpo/bikepedcount.



2020 City Accessibility Survey Results

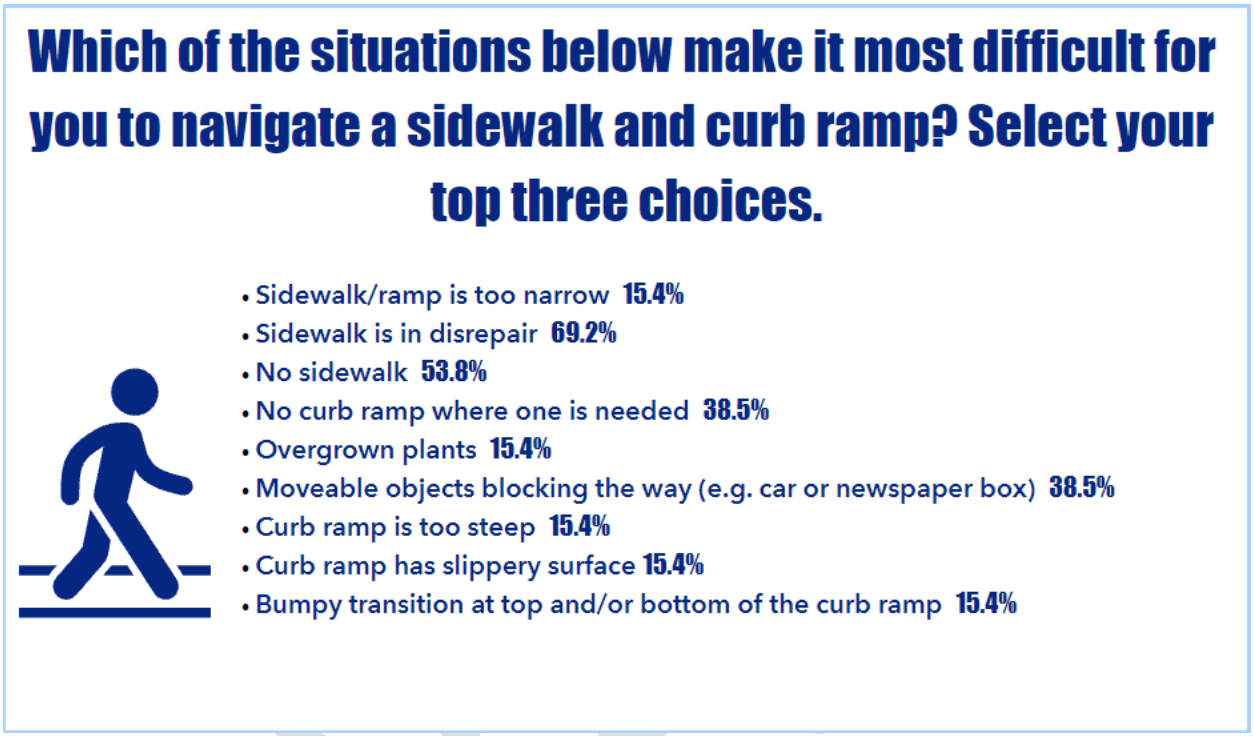
Each year, the City of Lawrence receives Community Development Block Grant (CDBG) funds from the US Department of Housing and Urban Development (HUD) to assist low and moderate-income residents. The City has historically earmarked these funds for housing improvements, social service agency capital projects, public infrastructure, and public services.

In preparation for the 2021 program year (August 2021-July 2022) the City gathered public input on Public Service needs and activities. The results aided staff beyond funding allocations and will help guide prioritization in the City's upcoming ADA Transition Plan.

The survey many questions including if participants have a disability, what barriers people have encountered to accessing any city owned facility or building, what destinations are most important to fix

for increased accessibility, and others. Two questions are pertinent to the pedestrian plan: “which of the situations below make it most difficult for you to navigate a sidewalk and curb ramp” and “which of the situations listed below make it most difficult to navigate a traffic signal”. *Figure 11* shows the results.

Figure 11: Relevant 2020 City Accessibility Survey Results

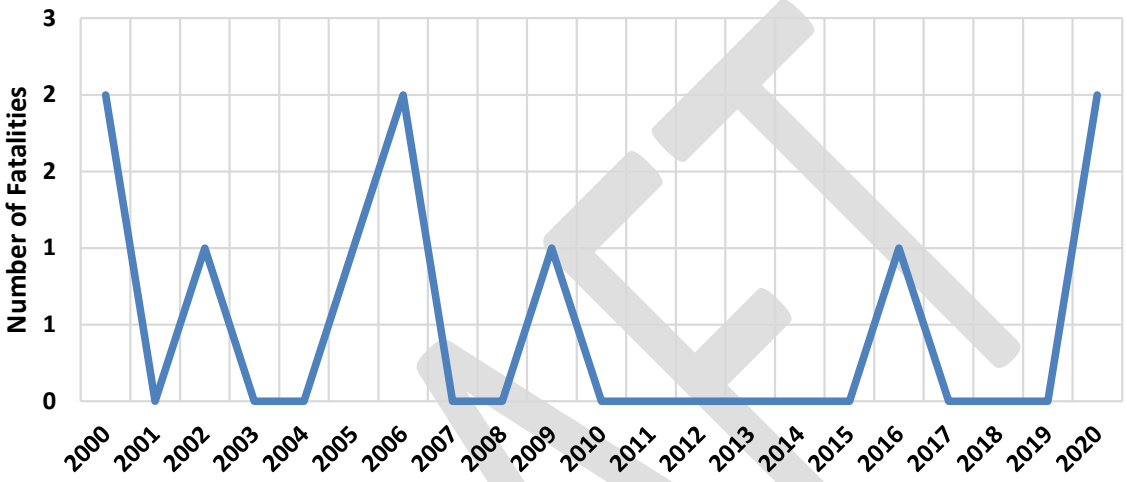


The full survey results can be found at:
https://experience.arcgis.com/experience/733b7e53885e4da9ad23bebd5c6ddc48/

Crash History

Crash data was provide within Lawrence from the Kansas Department of Transportation. As shown in *Figure 12,* zero to two pedestrian fatalities have occurred each year since 2000.

Figure 12: Historic Lawrence Pedestrian Fatalities (2000-2020)



Source: Kansas Department of Transportation (2021)

Pedestrian crashes between 2016 and 2020 were evaluated in detail below. One fatality pedestrian fatality occurred in 2016 and two occurred in 2020. A comparison of the crash severity of pedestrian and motor vehicle crashes in Lawrence notes some striking differences. *Table 6*, shows that pedestrian crashes had a significantly higher proportion of serious injuries at 13.7% while 0.5% of motor vehicle crashes involved a serious injury. This is also true for injuries that are not considered serious, 82.2% of pedestrian crashes resulted in other injuries where only 14.1% of motor vehicles crashes resulted in other injuries. Most motor vehicle crashes, 82.2%, were property damage only incidents. The percentage of crashes with fatalities for both pedestrian and motor vehicle crashes were 2.1%, and 0.1%, respectively. This indicates pedestrian crashes are more likely to result in a death than motor vehicle crashes.

Table 6: Lawrence Pedestrian/Motor Vehicle Crash Severity (2016-2020)

	Total	5-Year Average	5-Year Average %
Property Damage Only - Pedestrian	3	0.6	2.1%
Other Injury - Pedestrian	120	24.0	82.2%
Serious Injury - Pedestrian	20	4.0	13.7%
Fatality - Pedestrian	3	0.6	2.1%
Total	**146**	**29.2**	
Property Damanage Only - Motor Vehicle	8,466	1,693.2	85.3%
Other Injury - Motor Vehicle	1,404	280.8	14.1%
Serious Injury - Motor Vehicle	48	9.6	0.5%
Fatality - Motor Vehicle	9	1.8	0.1%
Total	**9,927**	**1,985.4**	

Source: Kansas Department of Transportation

Road Classification

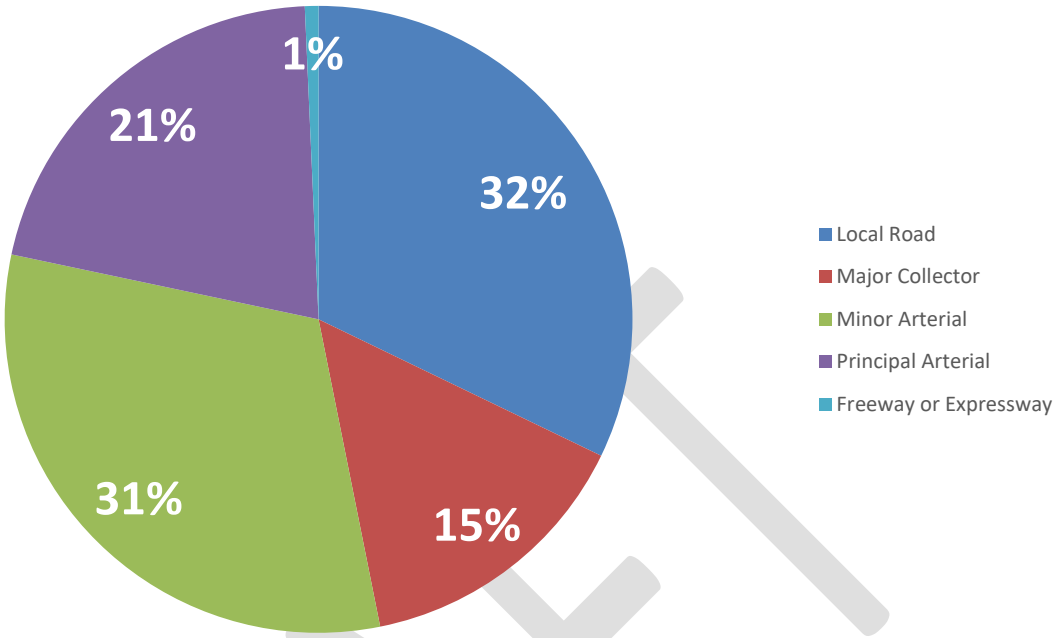
Figure 13 displays the types of road classifications pedestrian crashes occurred on. Crashes occurred 68% of the time on higher classified roads (Freeway or Expressway, Principal Arterial, Minor Arterial, and Major Collector). These higher classified roads have higher speeds and more vehicles than local roads.

As shown in Figure 13*, t*he speed of a roadway limits the driver's field of vision.[32] The field of vision is the amount of space a person can view while driving down the road. The faster you drive the less you can view. Thus, faster speeds lead to more crashes as drivers are not able to view pedestrians soon enough to avoid a crash. According to the AAA Foundation for Traffic Safety the average risk for death of a pedestrian increases as the speed of the vehicle increases (*Table 7*).[33]

[32] Speed as a Safety Problem. https://www.ite.org/technical-resources/topics/speed-management-for-safety/speed-as-a-safety-problem/

[33] Impact Speed and a Pedestrian's Risk of Severe Injury or Death. AAA Foundation for Traffic Safety. https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/

Figure 13: Road Classification by Pedestrian Incident (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 14: Field of Vision Based on Speed of Driver[32]

Table 7: Average Risk of Pedestrian Severe Injury or Death Based on Vehicle Miles per Hour Speed[33]

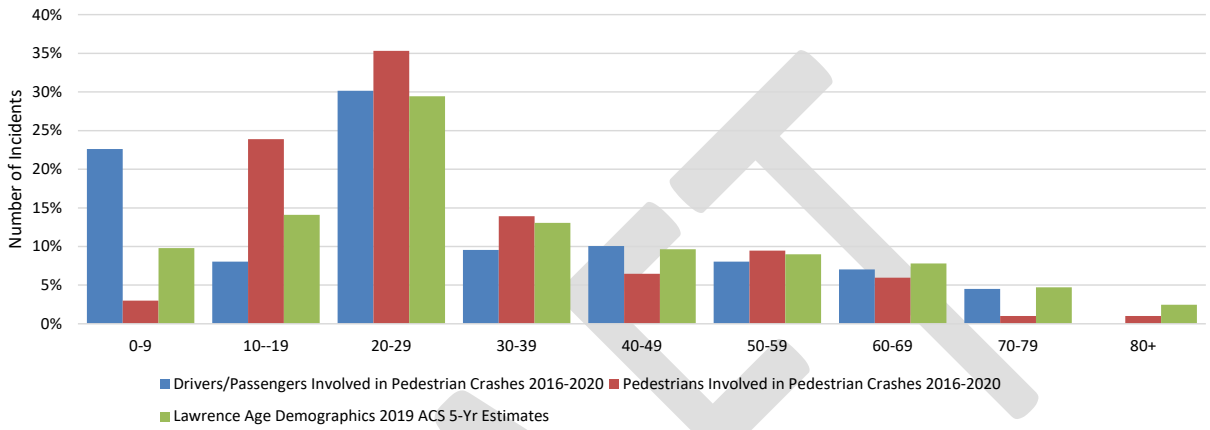
	Severe Injury	Death
10.0%	16 mph	23 mph
25.0%	23 mph	32 mph
50.0%	31 mph	42 mph
75.0%	39 mph	50 mph
90.0%	46 mph	58 mph

Age of Pedestrians and Drivers

Data in *Figure 15* shows the age group highest at risk for pedestrian crashes both as a pedestrian and a driver is the age group 20-29. In Lawrence, a large percentage of the overall population is within this age group. To understand if these proportions of incidents were notably higher than we would expect, we compared Lawrence's demographics with the number of pedestrian incidents in each age group. While the age group 20-29 accounts for 29% of the population, the age group is involved in a higher

percentage of pedestrian incidents, both as the pedestrian and as the driver. This suggests education targeted at this age group may be appropriate. Although the 20-29 age group accounts for the majority of pedestrian crashes the three pedestrian fatalities were 29 years old, 58 years old, and 61 years old. This suggests the pedestrian environment needs to be evaluated to be comfortable for all age groups especially as people are aging.

Figure 15: Age of Pedestrians and Drivers Involved in Pedestrian Incidents Compared to Lawrence Demographics (2016-2020)



Source: Kansas Department of Transportation (2021) & US Census American Community Survey 2019 5-Yr Estimates (S0101)
Note: The vehicle information includes all people in the vehicle when it is in a crash, which is why there are non-driving age people included.

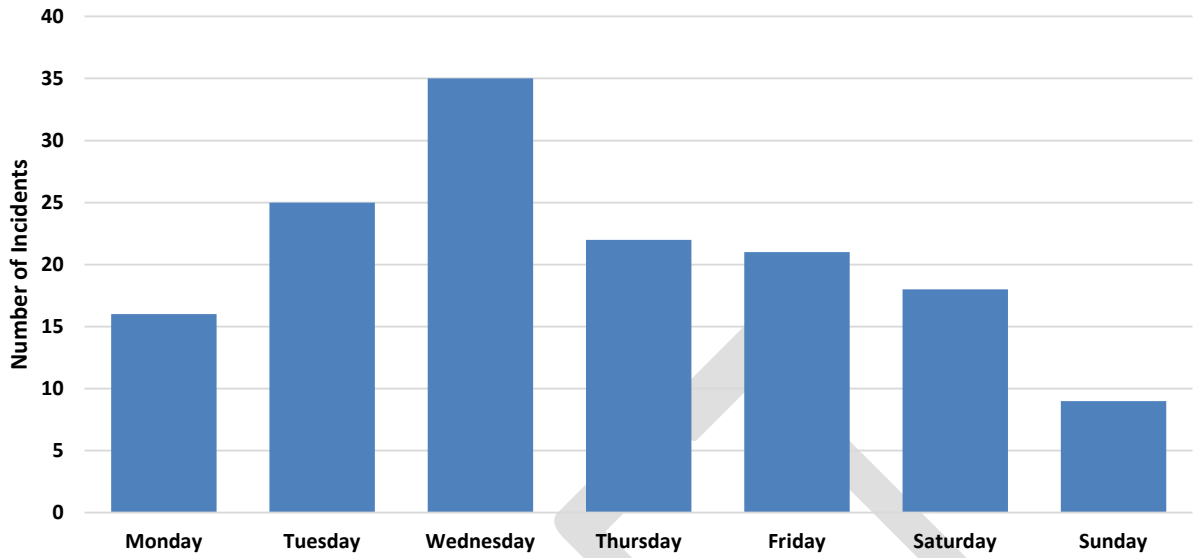
"Crash" versus "Accident"

The word "crash" may be new to some people to describe the event in which a bicycle rider or pedestrian collides with a motor vehicle, in a way that can result in bodily harm and/or property damage. Historically, these events were called accidents. The term accident implies heavy doses of chance, unknown causes, and the connotation that nothing can be done to prevent them. Crashes are preventable. Bicycle rider and pedestrian crashes are not random events. They fall into a pattern of recurring crash types and occur because the parties involved make mistakes. The mistakes can be identified and counteracted through a combination of education, skill development, engineering, and enforcement measures that can substantially reduce crash occurrences. There is a continuing need to establish the mindset that bicycle riders and pedestrians are worthy and viable users of our transportation system.

Time, Day, Month of Crash

Figure 16 shows Sunday and Monday have the fewest number of incidents while Wednesday has a highest number of pedestrian incidents.

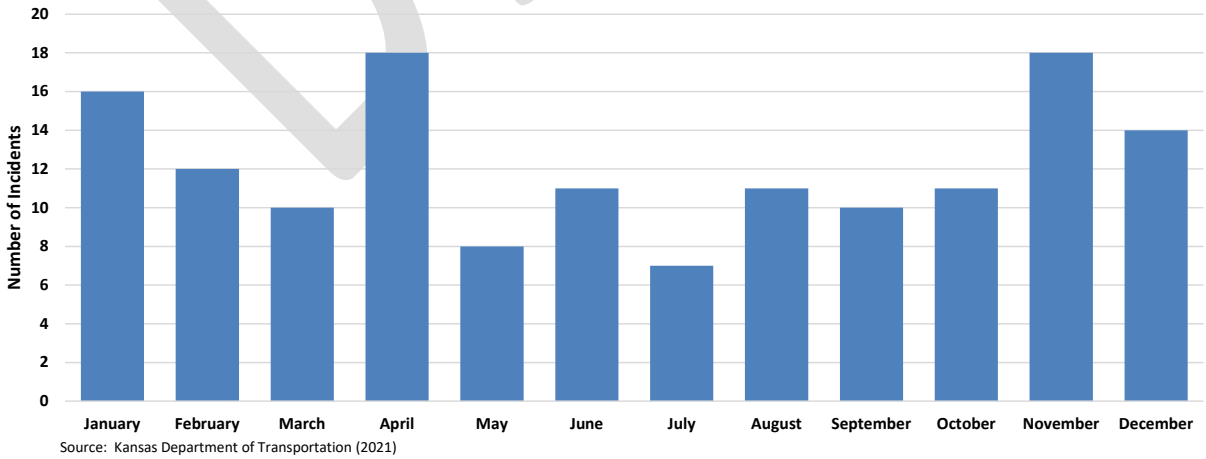
Figure 16: Pedestrian Incidents by Day of the Week (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 17 demonstrates the months of April and November had the highest number of pedestrian incidents. Overall, summer months June and July had the lowest numbers of incidents than other months. The low attendance of universities during the summer months is likely to account for this dramatic decrease in pedestrian incidents for June and July. The data demonstrated in *Figure 15* about the age of pedestrians and drivers, coupled with this data, suggests targeted education at the university-level at the beginning of each semester may improve pedestrian safety, given that many young drivers come to town during that time. However, the data may also suggest a higher number of crashes happen simply because there are more people in town. A comparison with monthly weather conditions (temperature, precipitation, snowfall) is inconclusive due to various factors in the cause of pedestrian incidents.

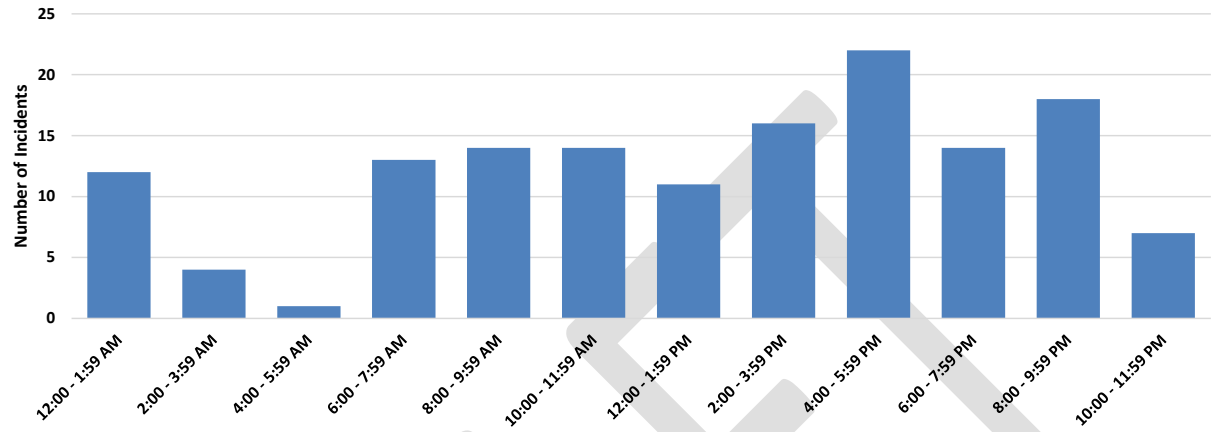
Figure 17: Pedestrian Incidents by Month of the Year (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 18 shows the peak travel times between 4:00 – 5:59 PM accounted for the largest proportion of pedestrian crashes and should be the focus of enforcement and other activities. This trend demonstrates an increase in crashes during hours that coincide with the end of a typical school day and the afternoon commute.

Figure 18: Individuals involved in Pedestrian Crashes by Time of Day (2016-2020)

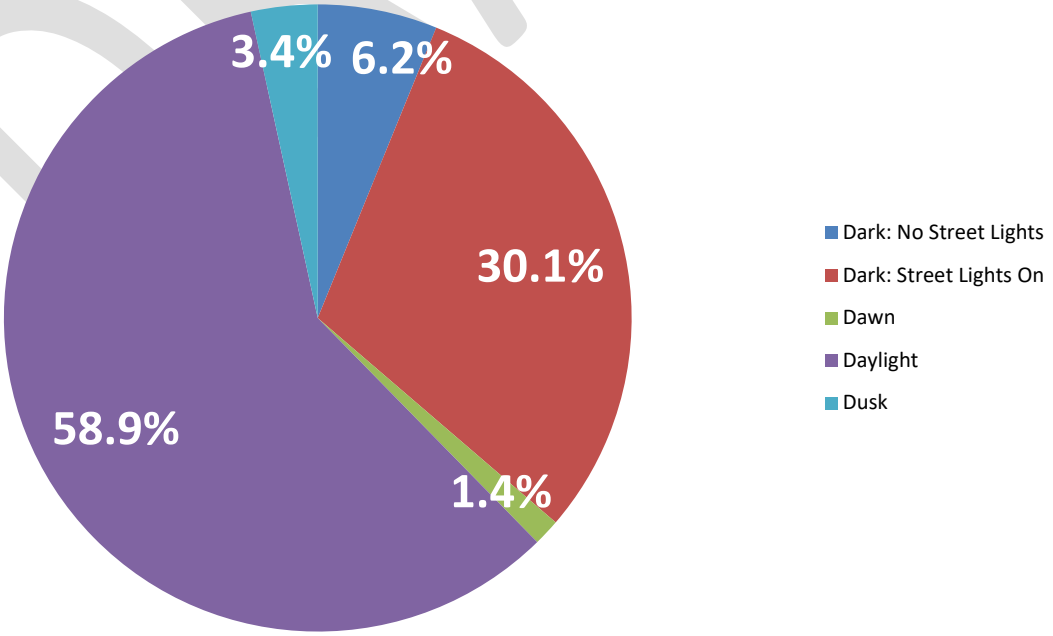


Source: Kansas Department of Transportation (2021)

Light, Weather, and Surface Condition

Shown in *Figure 19*, many pedestrian incidents occurred in Daylight, 58.9%, followed by "Dark: Street Lights On" at 30.1%. Only 6.2% of incidents occurred in "Dark: No Street Lights" and the Dawn and Dusk categories together accounted for 4.8% of all incidents.

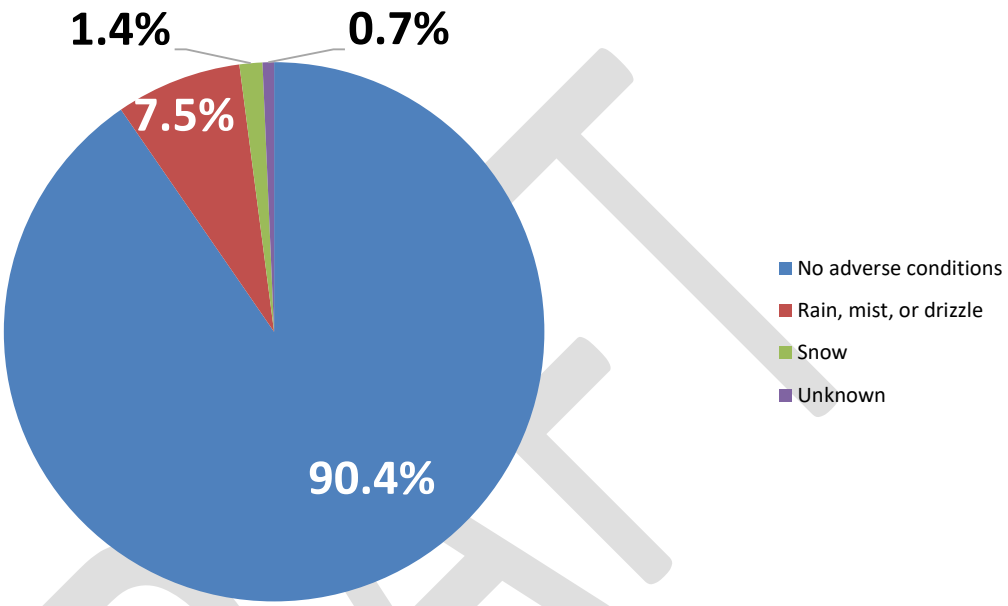
Figure 19: Number of Pedestrian Incidents by Light Conditions (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 20 demonstrates, the majority, 90.4%, of pedestrian crash incidents occurred in clear conditions. Rain was the next significant category, with an occurrence in 7.5% of pedestrian crash incidents. The remaining categories combined for slightly over 2% of all incidents. Since most pedestrian crash incidents occurred in clear weather conditions, this suggests inclement weather had very little effect on the likelihood of a pedestrian crash.

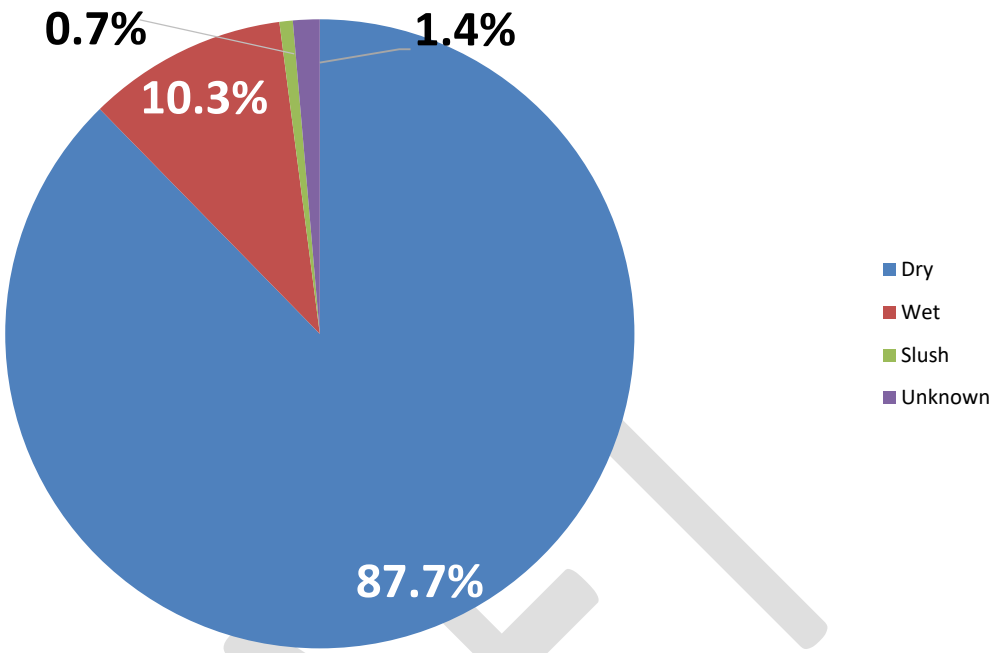
Figure 20: Number of Pedestrian Incidents by Weather Conditions (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 21 indicates 87.7% of pedestrian crash incidents occurred under dry surface conditions, followed by wet conditions at 10.3%. The rest of the categories combined accounted for slightly more than 2% of all incidents. Since the number of pedestrian crash incidents is substantially higher in dry conditions, this suggests inclement weather discouraged pedestrians from walking, or encouraged more caution from drivers and pedestrians alike.

Figure 21: Pedestrian Incident Surface Conditions (2016-2020)

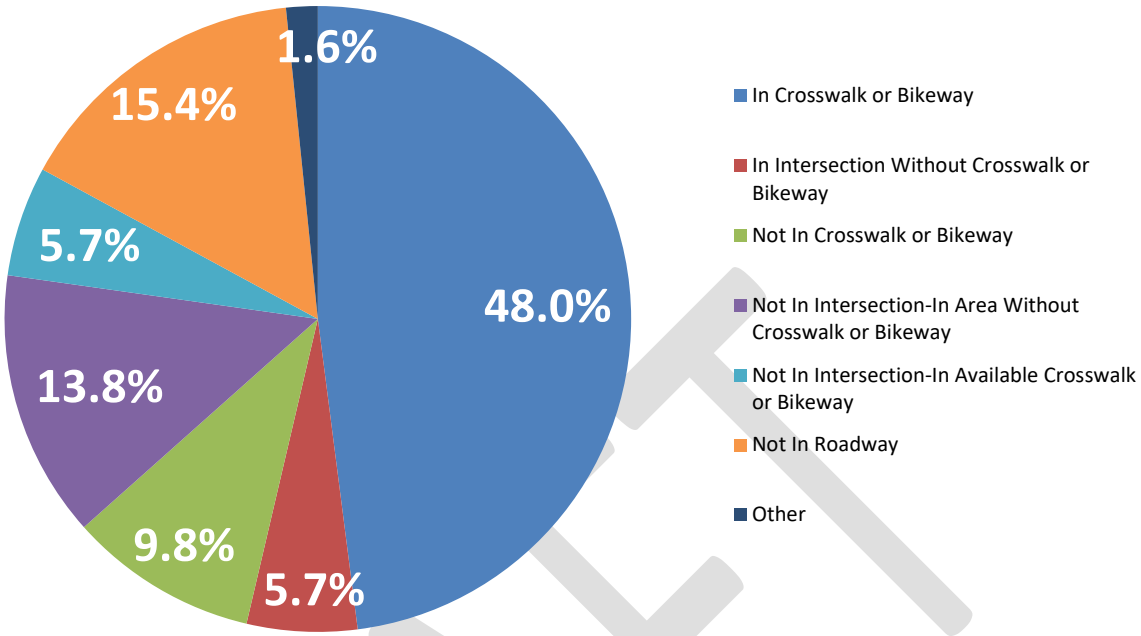


Source: Kansas Department of Transportation (2021)

Location of First Harmful Event and Pedestrian Action

Figure 22 demonstrates the majority of pedestrian crash incidents by location of first harmful event occurred "in crosswalk or bikeway" – 48%. The next highest locations were "not in roadway" – 15.4% and "not in intersection – in area without crosswalk or bikeway" – 13.8%. "Not in crosswalk or bikeway" was 9.8%. Interestingly, the "in intersection without crosswalk or bikeway" and "not in intersection- in available crosswalk or bikeway" were both 5.7%. This data is important because almost half of all pedestrian incidents occur when a pedestrian is using a marked crosswalk/bikeway. When pedestrians are using a marked crosswalk there is the expectation that the crossing is safe; however, this is not always the case. Driver education/enforcement may need to be conducted to educate on the importance of crosswalks.

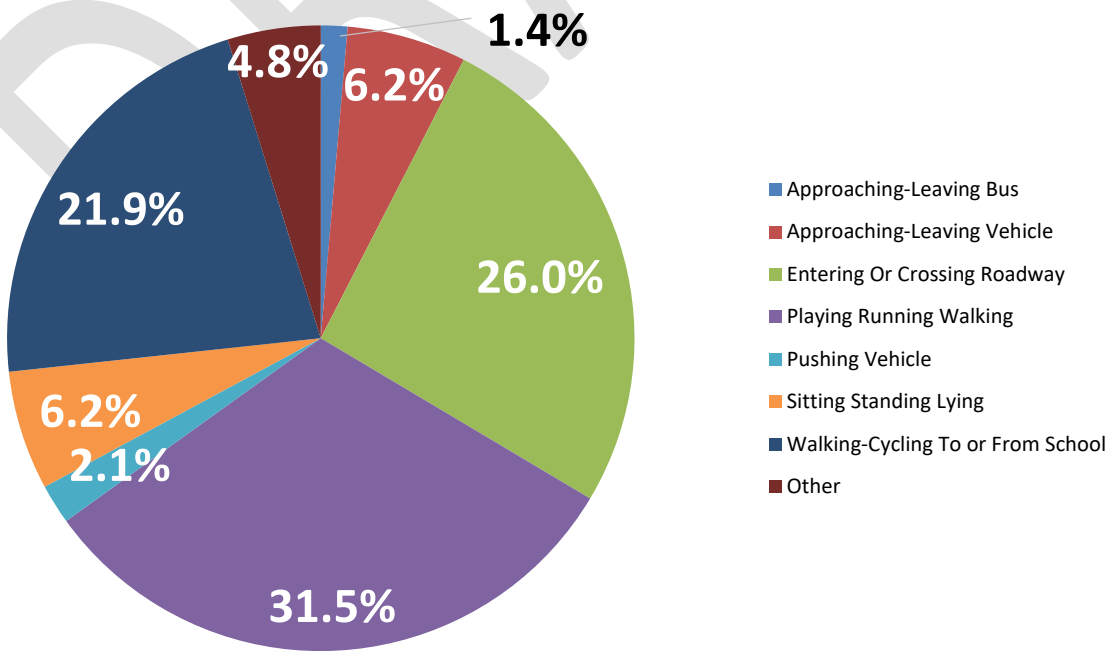
Figure 22: Location of First Harmful Event in Pedestrian Crashes (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 23 shows the greatest number of pedestrian-related contributing circumstances for pedestrian crashes were "playing, running, or walking" – 31.5%, and "entering or crossing roadway" – 26% of all incidents. A smaller proportion of pedestrian related actions include "walking-cycling to and from school" – 21.9%.

Figure 23: Pedestrian Incidents by Pedestrian Action (2016-2020)

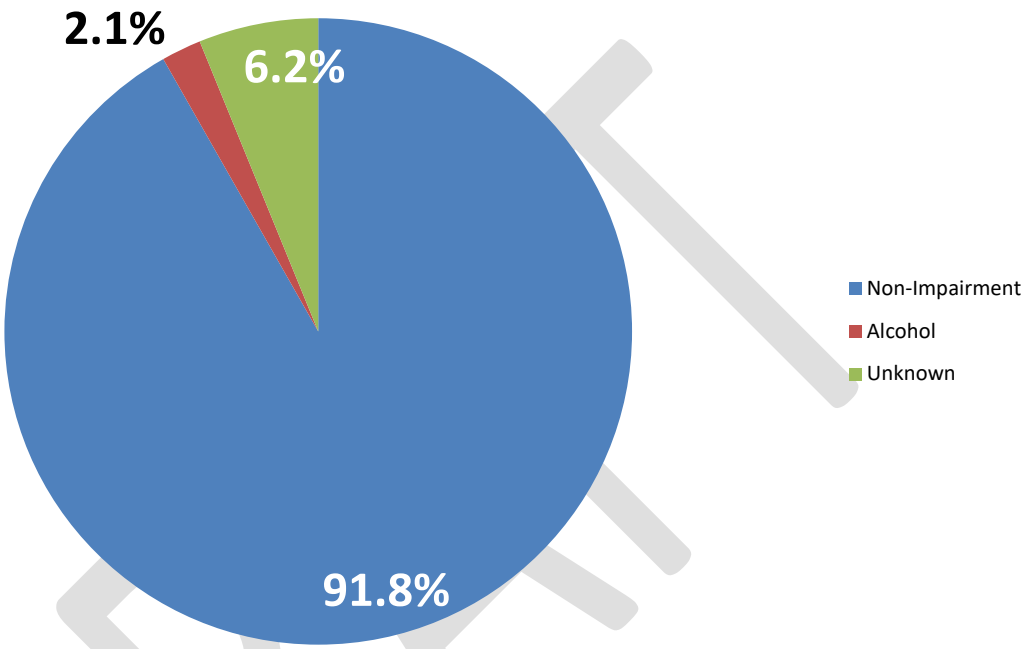


Source: Kansas Department of Transportation (2021)

Driver and Pedestrian Impairment

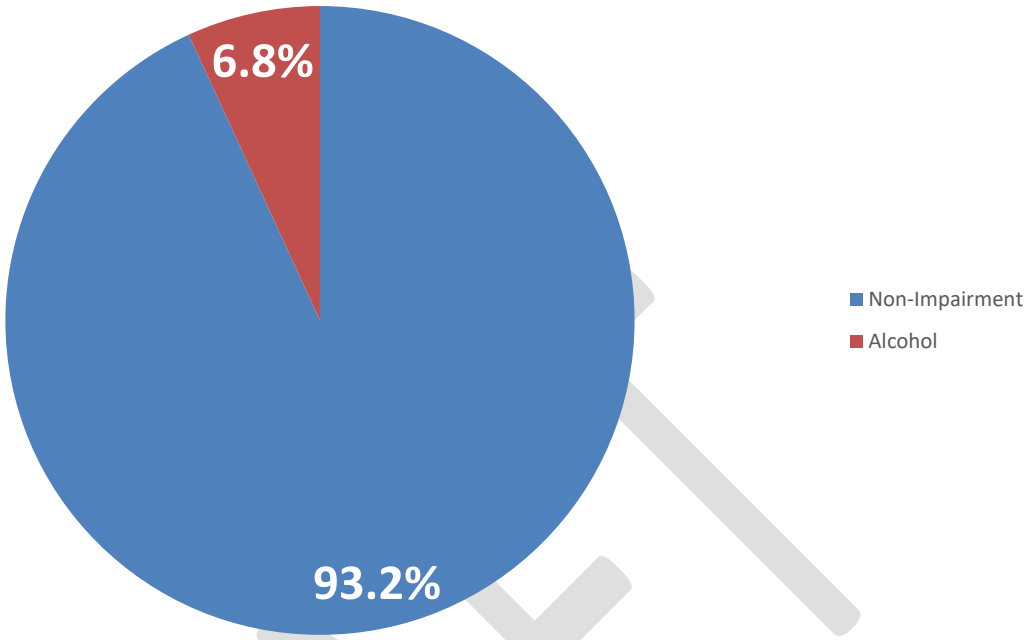
Figure 24 shows over 91% of pedestrian incidents by drivers were unimpaired. Only 2.1% of pedestrian incidents involved drivers impaired by alcohol. *Figure 25* demonstrates over 93% of pedestrian incidents involved pedestrians who were unimpaired while the remaining 6.8% occurred when alcohol was involved.

Figure 24: Driver Impairment - Pedestrian Incidents (2016-2020)



Source: Kansas Department of Transportation (2021)

Figure 25: Pedestrian Impairment - Pedestrian Incidents (2016-2020)



Source: Kansas Department of Transportation (2021)

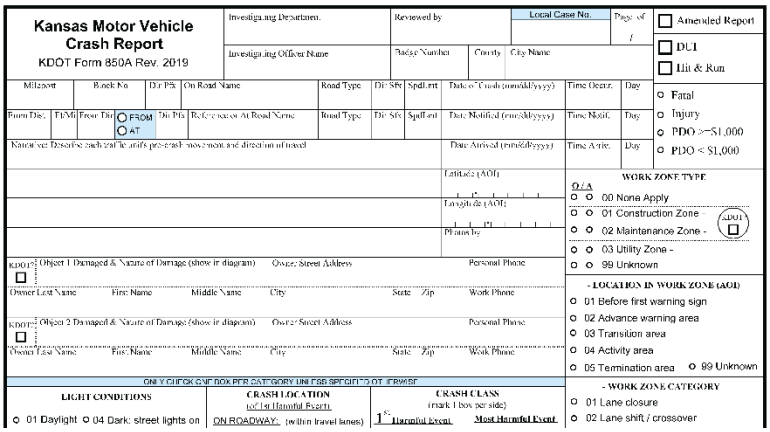
Strengths and Limitations of the Pedestrian Crash Data

The data that is currently collected and was made available to the MPO staff during this study process contains valuable information about the demographics of individuals involved in the crash, specific locations of crashes occurring at an intersection or midblock, and weather conditions. *Figure 26* shows the information collected through a Kansas Motor Vehicle Accident Report Form. However, missing, or incomplete motor vehicle accident report forms limit the ability of the MPO to accurately analyze and plan for improvements to the pedestrian network.

State crash reports are only filed if the crash includes a motor vehicle. There is a local Lawrence ordinance that requires any injury accident over $50 to be reported to the Lawrence Police Department. However, the ordinance doesn't have a standard for how that is documented. Some officers take the verbal report and thank the caller; others at their discretion file an information report. Information reports are unable to be easily queried for bicycle/pedestrian related information.

KU collects crash data when reported to KU Public Safety using the state crash reporting form.

Figure 26: 2019 KDOT Crash Report Form


Kansas Motor Vehicle Crash Report
KDOT Form 850A Rev. 2019

Source: https://www.ksdot.org/burtransplan/prodinfo/lawinfo.asp

Crashes which occur in KU parking lots do not confirm to the state crash reporting form so for the last few years they have been doing driver exchanges instead of using the form to report parking lot crashes.

Crash Data Conclusion

The preceding crash data shows certain demographics and locations within Lawrence should be targeted to reduce the number of pedestrian injuries and deaths. Pedestrians in the age group of 20-29 are involved in a larger percentage of incidents than one would expect when compared with Lawrence's demographics. This data reveals the need to target this age demographic for safety education. Almost half of crashes occurred in marked crosswalks/bikeways and 26% of crashes occurred when pedestrians were either entering or crossing the roadway. This indicates driver education may be needed to educate on the importance of pedestrians in crosswalks especially on higher speed roads. Additionally, the comparison of injury and fatalities between pedestrian and automobile accidents suggests more could be done to educate drivers and pedestrians alike of the serious risks of injury that pedestrians face when involved in a crash.