Transportation 2040

T2040 is the blueprint for our future transportation system. It is a vision for a healthy, safe, and efficient transportation system, which adequately serves Lawrence, Eudora, Baldwin City, Lecompton, and unincorporated areas of Douglas County.

T2040 sets regional goals and improvement recommendations for all modes of transportation (automobile, public transit, bicycle, pedestrian, etc.) to meet the region's future transportation needs through 2040. The plan unites all adopted modal plans (ex. Countywide Bikeway Plan and the Regional Pedestrian Plan) by incorporating them into a single regional transportation vision. Financial resources to implement this plan are also identified, ensuring it is financially realistic and projects selected for implementation can be afforded.

T2040 is a data-driven, performance based plan meeting the Federal Fixing America's Surface Transportation (FAST) Act requirements. It utilizes infrastructure condition and inventories, assessing performance trends, and setting performance measures. The plan includes 26 performance measures: 12 federally mandated and 14 community established.

T2040 was adopted by the Lawrence-Douglas County MPO Policy Board on March 15, 2018 after a year and a half long planning process.

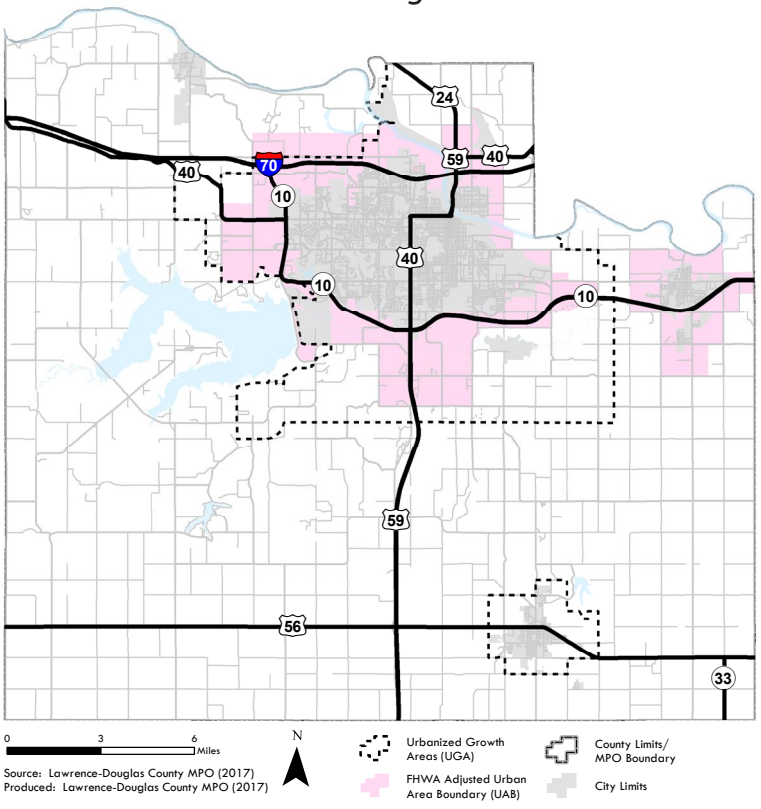
Lawrence-Douglas County Metropolitan Planning Organization (MPO)

Because transportation issues extend beyond city limits the Lawrence-Douglas County MPO serves all of Douglas County, including Baldwin City, Eudora, Lawrence, and Lecompton. The MPO brings together residents, local governments, state and federal departments of transportation, and other interested parties creating policies and developing plans reflecting our community's transportation vision.

What is a MPO?

A MPO is a federally funded transportation policy-making organization responsible for providing a comprehensive, cooperative, and continuous transportation planning process for urbanized areas with 50,000 or more people.

Planning Area



Public engagement by the numbers

1.5	36	38	9	1,600+
Years	Stakeholder Interviews	Mobile Meetings	Open Houses	Survey Responses

Community input led to the transportation vision and priorities. The community desires more transportation choices, better transportation networks, improved transit frequency, safety improvements for all users, and improvements to existing conditions of sidewalks, roadway and bicycle networks. The goals and objectives of T2040 reflect this transportation vision.

Existing conditions and identified needs

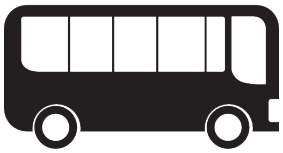
Regional land use and development patterns provide insights into the community's economic health, environmental sustainability, and transportation needs. Land use impacts travel demand; higher intensity land uses generate more trips on the transportation networks. Travel demand guides necessary transportation investments.

The region is comprised of many forms of transportation including non-motorized (bicycle and pedestrian), transit, road and bridge, and freight.

Estimates	Population	Employment
2016	119,891	62,045
2040	161,935	81,985

Bicycle
16 miles of bike lanes, 43 miles of bike routes, 5 miles of shared lane markings, 50 miles of shared use path throughout the county

Pedestrian
428 miles of sidewalk, 8,798 curb ramps throughout the county



Transit
Over 3 million fixed route riders in 2016 throughout Lawrence on the combined Lawrence Transit/KU on Wheels system

Road & Bridge
1,463 roadway centerline miles, 293 bridges throughout the county

Planned and Identified Needs

	Estimated Need	Entity	Description
People who bicycle	$31,209,926	Countywide	Bicycle infrastructure
	$2,397,000	Lawrence	Identified programmed bikeway projects
People who walk	$4,770,810	Countywide	Sidewalk maintenance on the priority network
	$14,776,590	Countywide	Sidewalk installation on both sides of the street on the priority network
	$2,497,000	Countywide	Sidewalk installation on one side of the street on the priority network
	$4,428,000	Countywide	Repair or construct ADA curb ramps
	$533,000	Lawrence	Identified programmed pedestrian projects
People who ride transit	$193,282,400	Lawrence	24 yrs of $6.75 million annual Lawrence Transit operations at current level of service
	$14,315,500	Lawrence	24 yrs of $500,000 annual Lawrence Transit night service operations
	$28,634,500	Lawrence	24 yrs of $1 million annual Lawrence Transit Sunday service operations
	$86,400,000	Lawrence	24 yrs of $3.6 million annual KU on Wheels operations
	$5,000,000	Lawrence	Bus transfer hub development
	$4,000,000	Lawrence	Transit technology for Lawrence Transit/KU on Wheels
	$12,000,000	Lawrence	Lawrence Transit vehicle replacement
	$37,223,700	Lawrence	KU on Wheels vehicle replacement
	$21,781,600	Countywide	24 yrs of $760,700 annual other human service transportation providers operations & capital expenses
People who drive	$480,000	Lawrence	Currently identified and approved unfunded traffic calming
	$15,167,065	Lawrence	Minor/major pavement rehabilitation (improve 55-65 PCI to ideal 100 PCI)
	$30,020,683	Lawrence	Pavement preservation work (improve 66-85 PCI to ideal 100 PCI)
	$35,000,000	Lawrence	Intelligent Transportation Systems (ITS) implementation
	$2,700,000	Countywide	Replace 4 functionally obsolete bridges
	$1,102,216,405	Countywide	Identified programmed roadway projects
	$98,719,242	Countywide	Identified illustrative roadway projects
Total	$1,747,553,421		

Note: Transit operations includes a 1.5% annual inflation rate. These estimates are not exclusive, but have been identified in the planning process.
Source: Lawrence-Douglas County MPO (2017), Regional Pedestrian Plan (2016), Countywide Bikeway System Plan (2014), Lawrence Transit (2017), and Lawrence Public Works Department (2017)

Access & Choices

Goal

Enhance transportation options and choices for improved system performance

Objectives

- Improve regional connectivity (urban/rural) of all modes of the transportation networks including access to desired destinations
- Enhance transit service, amenities and facilities

Strategies

- Continue deployment transit amenities (shelters, benches, real time information, etc.) based on the Transit Amenities Policy
- Coordinate land use and transportation planning to reduce transportation costs and develop land that encourages multimodal transportation through coordinated review of land use plans
- Develop tools to educate and encourage trips by walking through programs like wayfinding signage or open streets events
- Ensure the multimodal networks provide access to employment and commercial opportunities
- Implement existing plans:
    - Bus Transfer Location Analysis
    - Coordinated Public Transit-Human Services Transportation Plan (CPT-HTSP)
    - Countywide Bikeway Plan and Regional Pedestrian Plan
    - Safe Routes to School program
    - Transit Comprehensive Operations Analysis (COA)
- Develop in accordance with the Major Thoroughfares map including improving East/West connections throughout Lawrence
- Improve multimodal facilities and amenities to improve connections between modes
- Integrate multimodal elements in project planning, design, construction, and maintenance, consistent with the Complete Streets Policy
- Plan and implement an Americans with Disabilities Act (ADA) Transition Plan to reduce barriers to access
- Prioritize bicycle and pedestrian improvements based on plan priorities
- Provide meaningful public involvement in the transportation planning process.
- Track and measure progress of infrastructure, amenities, and programming related to bikeability and walkability.

Performance Measures

1. Percentage of people who have access within a ¼ mile to the bikeway network
2. Percentage of public streets with sidewalks on at least one side
3. Percentage of public streets with bikeway network
4. Unlinked Passenger Trips per Vehicle Revenue Hour for demand response and fixed route service
5. Percentage of population with access within a ¼ mile to a bus stop for fixed route transit

Mobility & Prosperity

Goal

Efficient movement of people, goods, and freight

Objectives

- Implement strategies that address system performance
- Improve reliability, capacity and competitiveness for regional freight

Strategies

- Deploy technology and other alternative strategies to relieve congestion
- Encourage safe and efficient traveling through the multimodal networks
- Establish a Right of Way management process that reduces the impacts to mobility
- Expand intercity and commuter transit options based on demand
- Implement relevant portions of the Statewide Freight Plan
- Implement the 10-Year Parking Operations and Development Plan
- Implement the Regional Intelligent Transportation System Strategic Deployment Plan strategies to maximize network capacity and improve efficiencies
- Plan and implement citywide multimodal wayfinding
- Revise and strengthen Traffic Impact Study requirements to include multimodal analysis
- Strengthen and implement access management for all users
- Improve project development processes between local, regional, state and federal agencies to reduce costs and increase project delivery time.

Performance Measures

6. *Percent of the person-miles traveled on the Interstate and Non-Instate NHS that are reliable
7. Average commute times

Note: See Chapter 6 for detailed strategies and Appendix F for the System Performance Report. * indicates a federally required performance measure.

Preservation, Safety, & Security

Goal

Prioritize preservation, safety, and security of the transportation network

Objectives

- Support projects and policies that improve safety and security
- Preserve and enhance transportation infrastructure and assets

Strategies

- At a minimum maintain existing conditions
- Continue a transparent and coordinated transportation planning process that encourages participation and performance based planning
- Design and build roadways for the safety of all users
- Design or retrofit collector and local streets for the safety of all users
- Enhance multimodal friendliness and minimize crashes and injuries of bicyclists through design
- Facilitate, develop, and distribute safety education programming/materials for all users
- Maintain an inventory of transportation infrastructure and assets and track transportation system performance
- Maintain and improve roadway pavement and bridge conditions
- Maintain and improve bikeway networks conditions
- Prioritize crash (vehicle and non-motorized) hot spots for safety improvements
- Maintain and improve the existing pedestrian networks conditions and enforce sidewalk repair policy or establish a sidewalk maintenance program
- Use traffic calming to improve safety and implement a traffic safety campaign

Performance Measures

9. *Number of fatalities
10. *Rate of fatalities per 100 million VMT
11. *Number of serious injuries
12. *Rate of serious injuries per 100 million VMT
13. *Number of non-motorized fatalities & non-motorized serious injuries
14/15. *Percentage of NHS & Non-NHS bridges by deck area classified as in Good and Poor condition
16. *Percentage of revenue and non-revenue vehicles met or exceeded their Useful Life Benchmark
17. *Percentage of assets with a condition rating below 3 on the FTA Transit Economic Requirements Model scale
18/19. *Percentage of pavements of the Interstate System & Non-Interstate NHS in Good and Poor condition
20. Percentage of pavement of non-NHS major roads (collector and above) in Good and Poor condition

Sustain & Enhance

Goal

Minimize adverse social, economic, and environmental impacts created by transportation

Objectives

- Promote density to reduce transportation costs
- Reduce environmental impacts of transportation
- Reduce single occupancy vehicle trips

Strategies

- Continue to follow emerging technologies and market driven transportation (automatic vehicles, electric vehicles, rideshare)
- Coordinate decision making to balance land use and environmental impacts
- Employ site design requirements that encourage pedestrian travel and non-single occupancy vehicle trips
- Explore alternative transit energy sources
- Explore transit operations and technologies that minimize environmental impacts
- Implement Travel Demand Management (TDM) strategies to reduce single occupancy vehicle trips
- Incorporate and evaluate the distribution and impacts of transportation programs, projects, and services

Performance Measures

21. Percentage change in density of urban area
22. Average cost of transportation per household
23. Daily Vehicles Miles Traveled (VMT) per Capita
24. Percentage of sensitive lands
25. Percentage of single occupancy vehicles
26. Percentage of mode choice

Note: See Chapter 6 for detailed strategies and Appendix F for the System Performance Report. * indicates a federally required performance measure.

Funding

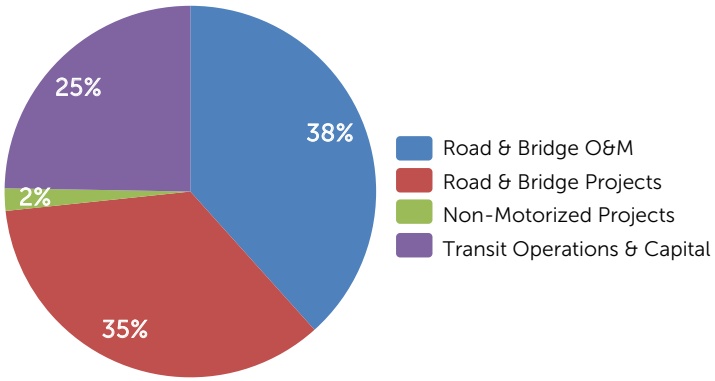
T2040 includes a financial analysis demonstrating how the plan can be implemented with available resources. The plan places a high priority on Operations and Maintenance (O&M) and preservation of the existing transportation system; therefore, the plan subtracts the O&M expenses "off the top" from the available revenue before projects are selected.

This financial analysis sets funding priorities for three separate categories: non-motorized, transit, and road and bridge. Each category includes an analysis of historical revenues, historical O&M expenditures, and projections based on the historic values adjusted for inflation.

T2040 projects $1.503 billion in funding for transportation O&M and projects addressing transportation needs throughout Douglas County between 2017 and 2040. Road & bridge O&M accounts for the largest percentage of funding programmed in this plan displaying the community's commitment to preserve our existing transportation network.

Projected Transportation Revenues 2017-2040

Road & Bridge O&M	$576,441,148
Road & Bridge Projects	$525,775,257
Non-Motorized Projects	$29,251,069
Transit Operations & Capital	$371,532,800
Total	$1,503,000,274

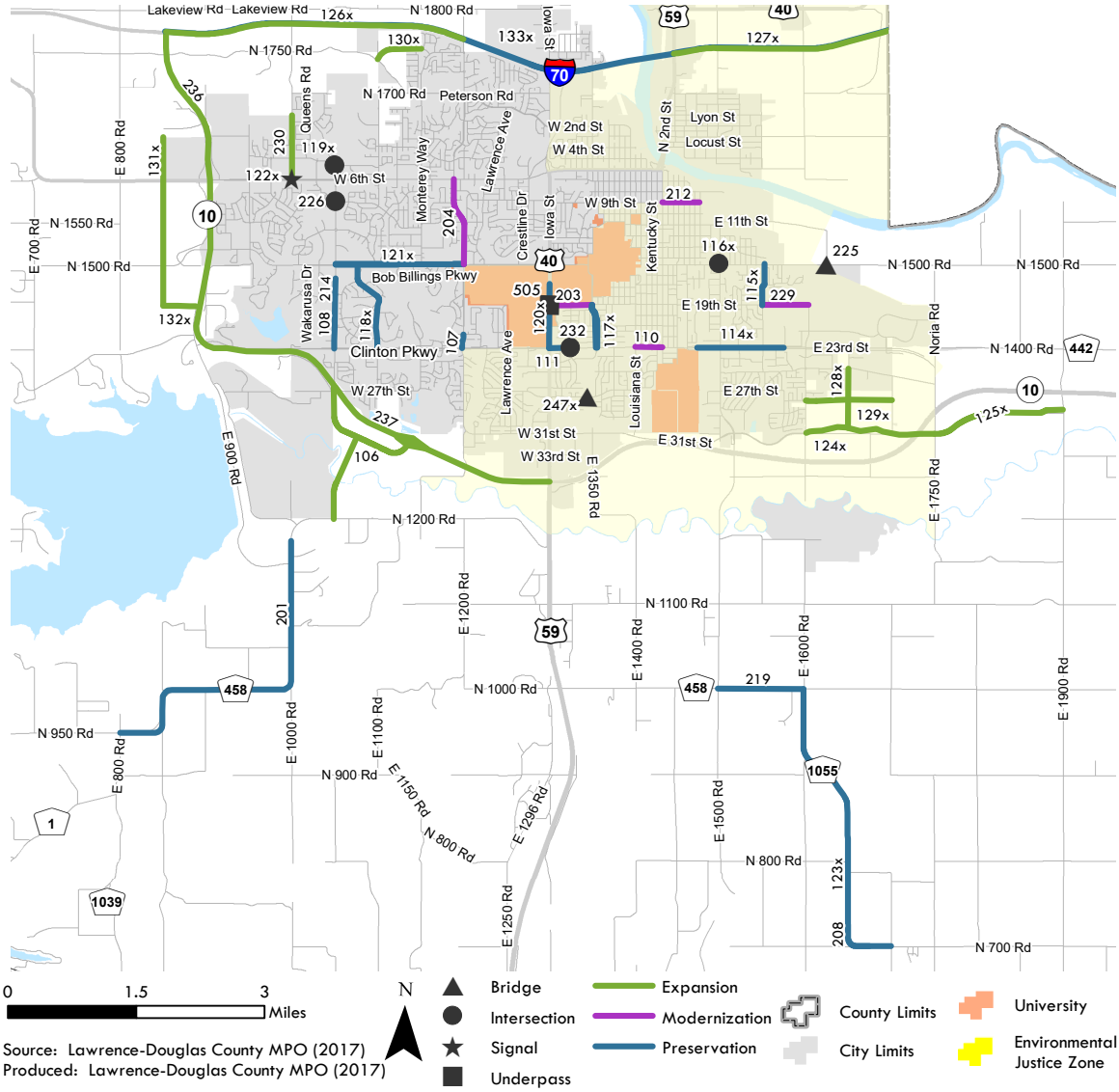


Prioritizing transportation needs

Our transportation needs ($1.7 billion) exceed the anticipated available funding for transportation projects ($1.5 billion). The following factors were used to evaluate transportation needs and in selecting projects:

- Outputs from the travel demand model forecasting daily traffic volumes testing the potential effects of roadway projects.
- Plan 2040 (the comprehensive plan for Lawrence and unincorporated Douglas County) and transportation mode specific plans to understand transportation improvements that coordinate with land use and development.
- Input and feedback from residents, stakeholders, and local governments to understand project preferences.

Regional Mapped Projects



Source: Lawrence-Douglas County MPO (2017)
Produced: Lawrence-Douglas County MPO (2017)

Note: Project 243 (US-56: Eisenhower St to 1st St) is located in Baldwin City and outside the frame of this map.

106 - Wakarusa Drive Extension

107 - Kasold Reconstruction (Clinton Pkwy to HyVee)

108 - Wakarusa Drive Reconstruction (18th to Clinton Pkwy)

110 - W 23rd Street 2-Way Left Turn Lane (Louisiana St to Massachusetts St)

111 - 23rd Street Resurfacing (Iowa St to Ousdahl Rd)

201 - Route 458 3-R Improvements (E 800 Rd. and N 1175 Rd.)

203 - 19th St. Reconstruction (Naismith Dr. to Iowa St.)

204 - Kasold Dr. (W. 6th St. to Bob Billings Pkwy.)

208 - Route 1055 at North 700 Curve

212 - 9th St. Reconstruction (Massachusetts St. to Delaware St.)

214 - Wakarusa Dr. Reconstruction (South)

219 - Route 458 Improvements (E 1500 Rd. to E 1600 Rd.)

225 - Culvert 1500-1624 Replacement

226 - Harvard Rd & Wakarusa Dr Roundabout

229 - 19th St. Reconstruction (O'Connell Rd. to Harper St.)

230 - Queens Rd. (W. 6th St to North City Limits)

232 - W 23rd St & Ousdahl Rd Intersection

236 - K-10/South Lawrence Trfwy West Leg (KA-3634-02)

237 - K-10/South Lawrence Trfwy West Leg (KA-3634-03)

243 - US-56 Improvements from Eisenhower St. to 1st St.

505 - 19th St. & Iowa St. Pedestrian and Bicycle Underpass

114x - 23rd St (Haskell Bridge to FF St)

115x - Harper St (15th to 19th St)

116x - 15th & Haskell Intersection

117x - Naismith Dr (19th to 23rd St)

118x - Inverness Dr (Bob Billings Pkwy to Clinton Pkwy)

119x - Overland & Wakarusa Intersection

120x - Iowa St. (Irving Hill to 23rd St.)

121x - Bob Billings Pkwy. (Kasold Dr. to Wakarusa Dr.)

122x - 6th St & Queens Rd Intersection: New Traffic Signal

123x - Route 1055 3-R Improvements (Vinland to Rte. 458)

124x - 31st St. Extension (O'Connell Rd. to Noria Rd.)

125x - 31st St. Extension (Noria Rd./E 1750 Rd. to Rte. 1057/E 1900 Rd.)

126x - I-70/Kansas Turnpike Widening to 6 Lanes (K10/ Lecompton Interchange E - MM197 to MM201)

127x - I-70/Kansas Turnpike Widening to 6 Lanes (Eastern Interchange - MM204 - to DG/LV Line - MM 206)

128x - Franklin Rd. Extension (E 25th. St to E 31st St.)

129x - E 28th St. Extension (O'Connell Rd. to E 1700 Rd.)

130x - Hunters Hill Dr. Extension (Hill Song Cir. to N 1750 Rd.)

131x - E 850 Rd. Construction (Future N 1650 Rd. to Future N 1457 Rd.)

132x - N 1457 Rd. Construction (E 900 Rd to E 850 Rd)

133x - I-70/Kansas Turnpike Surfacing (K10/Lecompton Interchange E - MM 197 to to DG/LV Line - MM 206)

247x - 27th St Bridge @ Naismith Valley Park

Environmental justice and environmental mitigation evaluation

Desired transportation investment priorities were evaluated to ensure they are not disproportionately affecting the environmental justice (EJ) populations (minority and/or low-income populations) and the environment. 19 mapped investment priorities are located within the EJ zone. 6 projects include a multimodal aspect, whether it is bike lanes, sidewalk, shared use path or a pedestrian/bicycle underpass. Unprogrammed, non-motorized funding will be spent on projects not included in the EJ analysis, but that continue to improve access, mobility, and safety for bicyclists and pedestrians.

54% of the mapped project investments are in the EJ zone. Transit access (households living within a ¼ mile of a bus stop), zero vehicle households, and easy access to the bikeway network (live within a ¼ mile of the network) in the EJ zone were reviewed to determine if there are any disparate or adverse impacts resulting from transit services included in T2040.

The environmental impacts of the road and bridge projects were evaluated based on their potential infringement on floodplains, wetlands, threatened and endangered species, historic resources, or other environmentally sensitive areas. A deeper evaluation of potential environmental impacts will be conducted by local governments as projects are designed and implemented.

Next steps

Local governments will implement the multimodal projects and strategies. KDOT will use T2040 to guide future investment priorities within Douglas County when developing its statewide transportation program.

The MPO staff will conduct annual performance reporting to track progress towards meeting our goals and can be found in Appendix F.

T2040 will be updated every 5 years assuring it remains relevant for our region. The plan will be updated or amended by 2023 to reflect completed projects or changes in priorities.

For more information

- Visit our website: www.lawrenceks.org/mpo
- Email us: mpo@lawrenceks.org
- Sign up to receive email updates: www.lawrenceks.org/subscriptions (Transportation Planning List)

LAWRENCE - DOUGLAS COUNTY
MPO
METROPOLITAN PLANNING ORGANIZATION