MARC
MID-AMERICA REGIONAL COUNCIL

Transportation Improvement Program

2020–2024

Mid-America Regional Council
Transportation Department

MPO Self-Certification

The Kansas Department of Transportation, the Missouri Department of Transportation and the Mid-America Regional Council certify that the metropolitan transportation planning process is being carried out in accordance with all applicable requirements including:

1. 23 U.S.C. 134, 49 U.S.C. 5303, and this subpart;
2. In nonattainment and maintenance areas, sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) and (d)) and 40 CFR part 93;
3. Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21;
4. 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
5. Section 1101(b) of the Fixing America's Surface Transportation Act (Pub. L. 114-357) and 49 CFR part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects;
6. 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
7. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38;
8. The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance;
9. Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
10. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

Michael Moriarty
Chief of Transportation Planning
Kansas Department of Transportation

Date 10/28/19

David Silvester
Kansas City District Engineer
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Date 11/1/19

David A. Warm
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Date 10/24/19

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Introduction

Decisions about transportation investments in metropolitan areas require collaboration and cooperation among different levels of government and individual jurisdictions. The Transportation Improvement Program (TIP) documents how the Kansas City region prioritizes the limited transportation resources available for the various needs of the region. It includes a staged, five-year list of surface transportation projects proposed for federal, state and local funding within the metropolitan area. Inclusion in the TIP represents a major milestone in the project development process that enables a project to receive and expend federal funds.

Before discussing the process by which the TIP is developed and analyzed, it is important to gain familiarity with the metropolitan transportation planning process and the key elements developed by the process. A good place to begin is with the Mid-America Regional Council (MARC).

The Mid-America Regional Council

The Mid-America Regional Council (MARC) serves as the association of city and county governments and the metropolitan planning organization (MPO) for the bistate Kansas City region.

MARC seeks to build a stronger regional community through cooperation, leadership and planning. Through MARC's leadership, area jurisdictions and diverse community interests sit down together to address the region's problems and identify the opportunities for cooperative solutions. These efforts, in turn, enhance the effectiveness of local government.

As a voluntary association, MARC strives to foster better understanding and cooperation on issues that extend beyond the jurisdiction of a single city, county or state. These issues include transportation, early education, aging, emergency services, public safety and 911, environmental issues and additional programs.

MARC's Board of Directors consists of 33 locally elected leaders representing the nine counties and 119 cities in the bistate, metropolitan Kansas City.

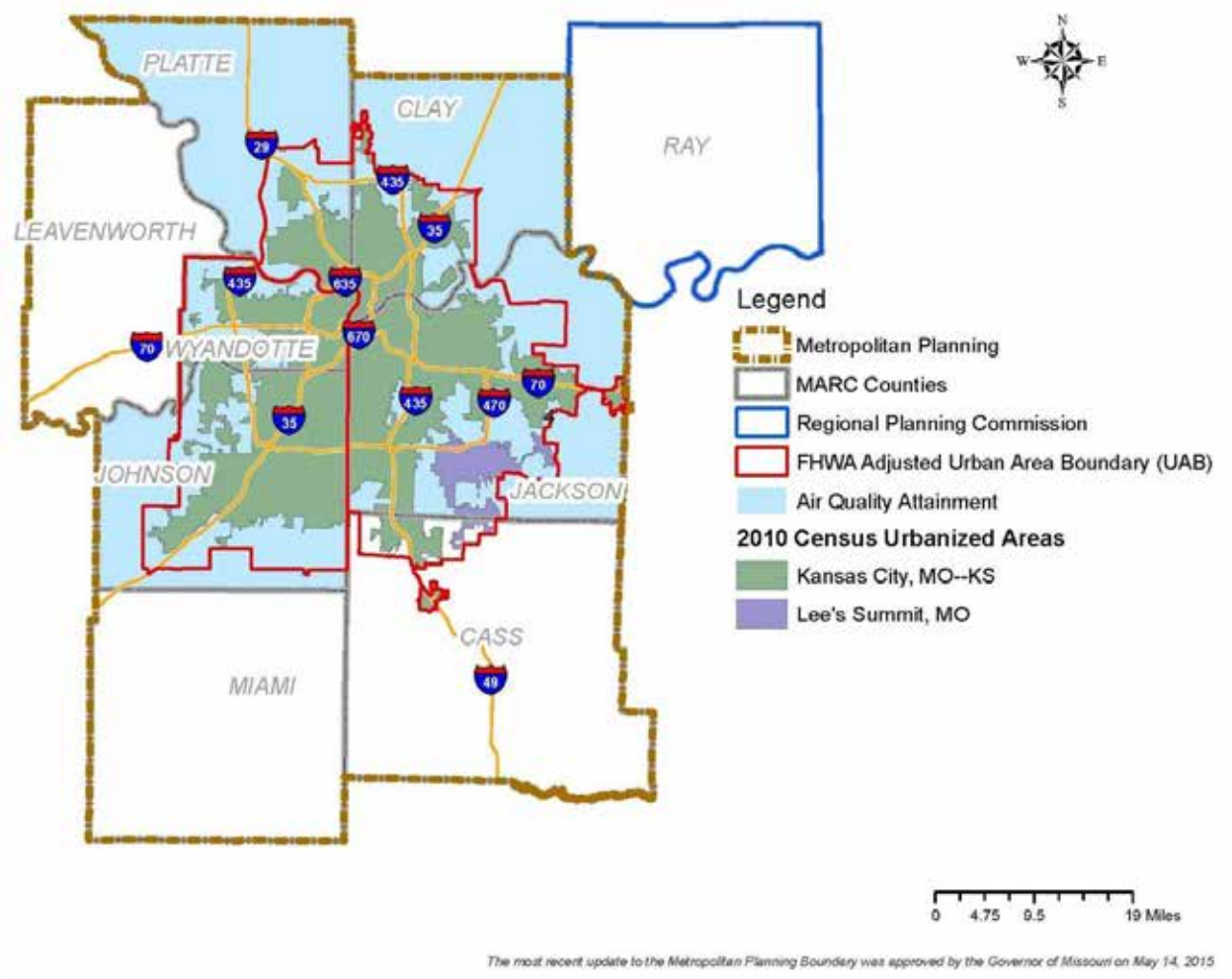
MARC plays an active leadership role in strengthening the metropolitan community by providing:

- A forum for addressing regional objectives and diverse community issues.
- Long-range planning and public policy coordination.
- Technical assistance and services that enhance the effectiveness of local government.

MARC serves as the MPO for the bistate Kansas City region. Its current planning jurisdiction consists of eight counties (Cass, Clay, Jackson and Platte counties in Missouri, and Johnson, Leavenworth, Miami and Wyandotte counties in Kansas), home to a population of approximately 1.99 million.

As the designated MPO for the Kansas City region, MARC is responsible for the development of plans and programs that provide for the development and integrated management and operation of transportation systems and facilities that will function as a multimodal transportation system for a geographic area that is projected to be urbanized within the next 20 years. MARC's current jurisdiction for metropolitan transportation planning consists of the entirety of Cass, Clay, Jackson, and Platte counties and a small portion of Lafayette County in Missouri and the entirety of Johnson, Leavenworth, Miami and Wyandotte counties in Kansas. This area encompasses a population of approximately 1.99 million people.

Figure 1: MARC Regional Boundaries



The Transportation Improvement Program (TIP)

The TIP is developed by MARC in cooperation with Kansas (KDOT) and Missouri (MoDOT) departments of transportation, local governments and public transportation agencies. Under federal law, the TIP must:

- Cover a period of no less than four years.
- Be updated at least every four years.
- Be approved by the MPO and the governors of Kansas and Missouri.
- Be consistent with the approved metropolitan transportation plan.
- Conform with the State Implementation Plan (SIP) for air quality, if the region is designated a non-attainment or maintenance area.
- Demonstrate that proposed transportation investments are financially realistic and achievable.
- List all federally funded and regionally significant projects regardless of funding source.
- Cover all modes of travel.

The TIP also includes specific listings for each project or phase (e.g., preliminary engineering or construction) that include:

- Sufficient descriptive material for project identification.
- Estimated total project cost.
- The amount of federal funds proposed to be obligated during each program year.
- Identification of the agencies responsible for the project.
- Identification of projects that implement required Americans with Disabilities Act (ADA) plans.

Relationship to the Transportation Planning Process

As the MPO for the Kansas City region, MARC is responsible for developing and maintaining three key products of the metropolitan planning process in addition to the TIP. The TIP is the implementation arm of the documents described below:

- Metropolitan Transportation Plan (MTP) directs the transportation decision-making process in ways that help achieve regional goals. The plan, Transportation Outlook 2040, serves as a blueprint for the management of the region's transportation system through the year 2040. It describes the current and evolving surface transportation needs of the metropolitan area and broadly categorizes transportation investments ranging from road and transit improvements to projects that enhance bike, pedestrian and freight movement.
- Unified Planning Work Program (UPWP) describes the transportation planning activities MARC and other agencies propose to undertake during the next fiscal year. The UPWP promotes a unified regional approach to transportation planning in order to achieve regional goals and objectives. It serves to document the proposed expenditures of federal, state and local transportation planning funds, and provides a management tool for MARC and funding agencies in scheduling major transportation planning activities, milestones and products.
- Congestion Management Process (CMP): Urban areas with a population of more than 200,000, like the Kansas City area, are known as Transportation Management Areas (TMAs). TMAs must develop a CMP that both identifies and evaluates projects and strategies aimed at reducing traffic congestion and increasing the mobility of people and goods.

Figure 2: Transportation Improvement Program Development

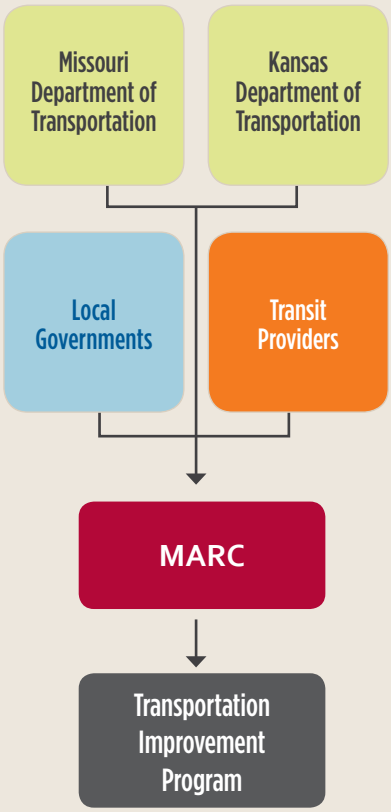


Table 1: Schedule of Key MARC Products in the Metropolitan Planning Process					
Time Frame	**UPWP**	**TIP**	**MTP**	**CMP**	**PPP**
	1 Year	**5 Years**	**30 Years**	**30 Years**	**N/A**
Contents	Plans activities, studies and tasks to be undertaken within a year	Lists of transportation improvements	Identifies regional transportation goals, policies, strategies and major projects	Defines and identifies congestion and develops appropriate strategies to reduce or mitigate congestion.	Creates framework to guide the public participation process in transportation planning projects at MARC
Update Requirements	Annually	Every two years	Every five years (four years if in non-attainment for air quality)	Process is continuous	Every three years

The current federal transportation law, the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94), maintains and expands the requirement first established under SAFETEA-LU — the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users law — to consider the following factors in the transportation planning process:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users.
- Increase the accessibility and mobility of people and for freight.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned-growth and economic-development patterns.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
- Enhance travel and tourism.

The 2020–2024 Transportation Improvement Program has been developed through a coordinated process consistent with the planning documents and factors described.

The TIP and Public Involvement

MARC provided opportunities for interested parties to get involved in the development of the TIP, and also seeks to engage and involve members of the community who have not traditionally been involved. It is MARC's goal to have a significant and ongoing public involvement process that ensures early and continuous involvement in all major transportation decisions. MARC's public participation goals and strategies are outlined in the Public Participation Plan. This document acts as a framework that guides the public participation process in transportation planning projects at MARC, such as the TIP.

Participation is encouraged as early as possible in the development of the TIP and is most effective well before the draft document is circulated. The development of the MTP is the earliest and most relevant point for public participation, because this is the stage where funding priorities are established. The public will have the opportunity to review and comment on all TIP amendments and updates.

The TIP and Financial Planning

The TIP includes a financial plan that demonstrates how the approved projects and programs can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the projects and programs, and recommends any additional financing strategies for needed projects and programs. The financial plan of the 2020–2024 TIP was developed by MARC in cooperation with the Kansas and Missouri departments of transportation, local public transportation agencies and local government entities. Each funding program is financially balanced against available funds for FY 2020–2024.

The FAST Act requires that the financial plan for the TIP contain system-level estimates of the costs and revenue sources that are reasonably expected to be available to adequately maintain and operate the multimodal transportation system.

Financial constraint *ensures that there will be enough funds to implement proposed improvements — and to operate and maintain the entire system — by comparing costs with available financial resources. Only projects that have realistic or reasonably available funding sources will be included in the TIP.*

Through the use of financial constraint, the TIP becomes a program of committed projects designed to achieve regional mobility and improved air quality, while addressing the economic, environmental and system preservation goals of the region. In effect, the TIP serves as the region's spending plan for federal and state transportation improvement funding.

The TIP and Performance Management

The FAST Act continues the performance- and outcome-based program established under MAP-21. The objective of this program is to invest resources in projects that collectively make progress toward the achievement of national goals. The legislation requires the U.S. Department of Transportation (USDOT), in consultation with states, MPOs and other stakeholders, to establish performance measures in these areas:

- Transit State of Good Repair
- Safety
- Infrastructure Condition
- System Performance & Freight

The TIP and other plans are required to include information regarding these performance measures.

MARC has actively tracked a number of performance measures since the adoption of the region's metropolitan transportation plan, Transportation Outlook 2040, in 2010. These measures and the resulting trends help to indicate regional progress towards achieving the goals set forth in the plan, informing decisions and guiding investment priorities for the regional transportation network.

The TIP and Air Quality

The federal Clean Air Act of 1990 (CAA), requires that transportation projects meet air quality standards in order to be eligible for federal funding. This law requires all transportation plans, programs and projects to conform to regulatory mobile source emissions budgets for transportation-related pollutants in non-attainment and maintenance areas. Under the CAA, each state environmental agency must develop a plan called the State Implementation Plan (SIP). The SIP describes how the state will meet the national standards set for each of six air pollutants identified under the CAA. The six regulated pollutants are ozone, carbon monoxide, particulate matter, sulfur dioxide, nitrogen dioxide and lead. Regions are continually monitored to ensure that these pollutants are within acceptable standards for air quality.

The Kansas City region is currently an attainment/unclassifiable area for all transportation-related criteria of pollutants, so no conformity analyses or determinations are required. The federal 2015 National Ambient Air Quality Standard (NAAQS) for ozone is 70ppb, and the MARC region was officially given its designation and published in the Federal Register on June 4, 2018. However, the situation remains precarious – the 2018 design value was at the 70ppb threshold set by the 2015 standard. MARC continues to monitor this situation closely while preparing for the potential impacts of a redesignation on the regional planning processes.

The Clean Air Act of 1990 *is the most recent version of a law first passed in 1970 to clean up air pollution. It gave the Environmental Protection Agency more authority to implement and enforce regulations that reduce air pollutant emissions and placed an increased emphasis on more cost-effective approaches to reduce air pollution.*

The TIP and Environmental Justice

In 1994, Presidential Executive Order 12898 mandated that each federal agency incorporate environmental justice in its mission by analyzing and addressing the effects of all programs, policies and activities on minority and low-income populations. Drawing from the framework established by Title VI of the Civil Rights Act of 1964, as well as that of the 1969 National Environmental Policy Act (NEPA), the U.S. Department of Transportation set forth the following three principles to ensure nondiscrimination in its federally funded activities:

- To avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The 2020–2024 Transportation Improvement Program was developed in consistency with the MARC Public Participation Plan (PPP). The PPP uses a number of strategies to involve traditionally underserved segments of the population in the transportation planning process. MARC also analyzes the projects in the 2020–2024 TIP to ensure federal transportation investments are proportionally funded and made in areas with higher concentrations of low-income and minority populations. The 2020–2024 TIP also includes a safety analysis that seeks to determine if a relationship exists between environmental justice areas, crash injury severity and potential crash causes based on the regional high priority transportation safety issues, including unbelted motorists, aggressive driving, youth and young adults, impaired driving, and pedestrians.

TIP Development and Maintenance

MARC, the Kansas and Missouri departments of transportation, the public transportation service providers serving the area, and other entities sponsoring surface transportation projects cooperatively developed the TIP for the Kansas City Metropolitan Planning Area. All of the cooperating entities have agreed that the TIP for the Kansas City metropolitan area will cover a five-year period; therefore, this TIP includes projects for 2020–2024.

A portion of the federal transportation funds received by the Kansas and Missouri departments of transportation is designated — or suballocated — for use in the Kansas City region. For the funding currently shown in the 2020–2024 TIP, MARC has used its established committee structure to develop priorities for these following suballocated metropolitan programs, as shown in Figure 3.

- Surface Transportation Block Grant Program (STPM)
- Congestion Mitigation/Air Quality (CMAQ)
- Surface Transportation Block Grant Program - Set Aside (TAP)
- FTA Section 5310

Figure 3: MARC Programming Process

Suballocated funding targets are established cooperatively by MARC, the state departments of transportation and the Federal Transit Administration. MARC's committees then program or recommend projects to receive suballocated funds.

Air Quality Forum programs alternative fuel and outreach/ other projects for Kansas and Missouri CMAQ funding	**Active Transportation Programming Committee** programs projects for Kansas and Missouri TAP and CMAQ bicycle/pedestrian projects	**Regional Transit Coordinating Council** programs projects for Kansas and Missouri CMAQ transit projects	**Kansas and Missouri STP** programs, CMAQ traffic flow projects and STPM	**Mobility Advisory Committee** recommends funding for FTA Section 5310 projects

Programming and recommendations are approved by MARC's Total Transportation Policy Committee

Programming and recommendations are approved by MARC's Board of Directors and incorporated into the TIP

TIP is approved by Kansas, Missouri and the U.S. departments of transportation

The MARC Total Transportation Policy Committee (TTPC) will consider approving the 2020–2024 TIP on October 15, 2019. TTPC serves as the local decision-making, policy-development body related to multimodal transportation in the region. Members of TTPC include elected officials, representatives from the Kansas and Missouri departments of transportation, public transportation officials, and representatives from local governments. After recommendation for approval by TTPC, the MARC Board of Directors will consider the TIP. The TIP is updated through a quarterly cycle of amendments that allows MARC to maintain the accuracy of the TIP while providing local project sponsors flexibility in addressing issues that may arise. Amendments, like the complete TIP, are approved by both TTPC and the MARC Board of Directors.

2. Programming Process

As the designated Metropolitan Planning Organization (MPO) for the Kansas City region, MARC is responsible, under Section 134 of Title 23, United States Code, for plans and programs that provide for the development and integrated management and operation of transportation systems and facilities that will function as an intermodal transportation system for the metropolitan area. The Fixing America's Surface Transportation (FAST) Act is the most recent law establishing federal transportation policy and funding authorizations. Under this legislation, MARC is responsible for preparing the regional Transportation Improvement Program (TIP) in cooperation with the state departments of transportation, transit operators and local governments.

Although federal regulations require the TIP be updated at least every four years and cover a minimum four-year period, MARC produces a new TIP every other year and outlines federal transportation expenditures for the subsequent five-year period.

Table 2: Transportation Improvement Program Update Schedule

2019	2020	2021	2022	2023	2024
Complete update 2020–2024	Amendments only	Complete update 2022–2026	Amendments only	Complete update 2024–2028	Amendments only

MARC develops the TIP by working cooperatively through its committee structure. MARC programming and policy committees include representatives from local jurisdictions, public transportation agencies, the Kansas and Missouri departments of transportation and other interested parties. Committee members are typically appointed by each participating jurisdiction or state agency and provide input for various MARC documents and recommendations for federally funded projects. Final authority for the adoption of the TIP rests with MARC's Board of Directors.

Under federal regulations, the TIP must be consistent with the Metropolitan Transportation Plan (MTP) for the region, and must incorporate all federally funded projects and all regionally significant projects regardless of funding source. The TIP project listings describe each project, including the type of work, termini (beginning/end points) and phase of work identified for each. Cost estimates and the year of implementation of each phase are also clearly stated. The TIP project listings indicate the amount and sources of federal funds proposed to be obligated during each program year and the amounts and sources of non-federal funds proposed for projects. The TIP listing identifies all recipients of federal funds, and the state and local agencies responsible for implementation of each project.

The process for including a project in the TIP varies depending on the type of funding proposed for the project. If a project sponsor seeks to use one of the suballocated funding streams prioritized directly by MARC, the project is subject to competitive programming processes directed by MARC as described in this document. Projects not seeking suballocated funding are not subject to these processes.

Information included in the TIP project listing:

- Implementing agencies
- Project location
- Cost estimates
- Year of funds to be obligated
- Type of work
- Current phase of work
- Year of implementation for each phase
- Amounts and sources of nonfederal funds
- Amounts and sources of federal funds
- Multimodal elements as appropriate

Federal Highway Administration Programs

Congestion Mitigation and Air Quality Program

According to the Federal Highway Administration, the purpose of the Congestion Mitigation and Air Quality Improvement Program (CMAQ) is *"...to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).[1]"*

CMAQ program funds are distributed on a national level to states as a share of their core program funds under the FAST Act, based on the ratio of CMAQ to other program funding in 2009. Other factors such as population in non-attainment and maintenance areas determine the flexibility to distribute CMAQ funds to areas within each state.

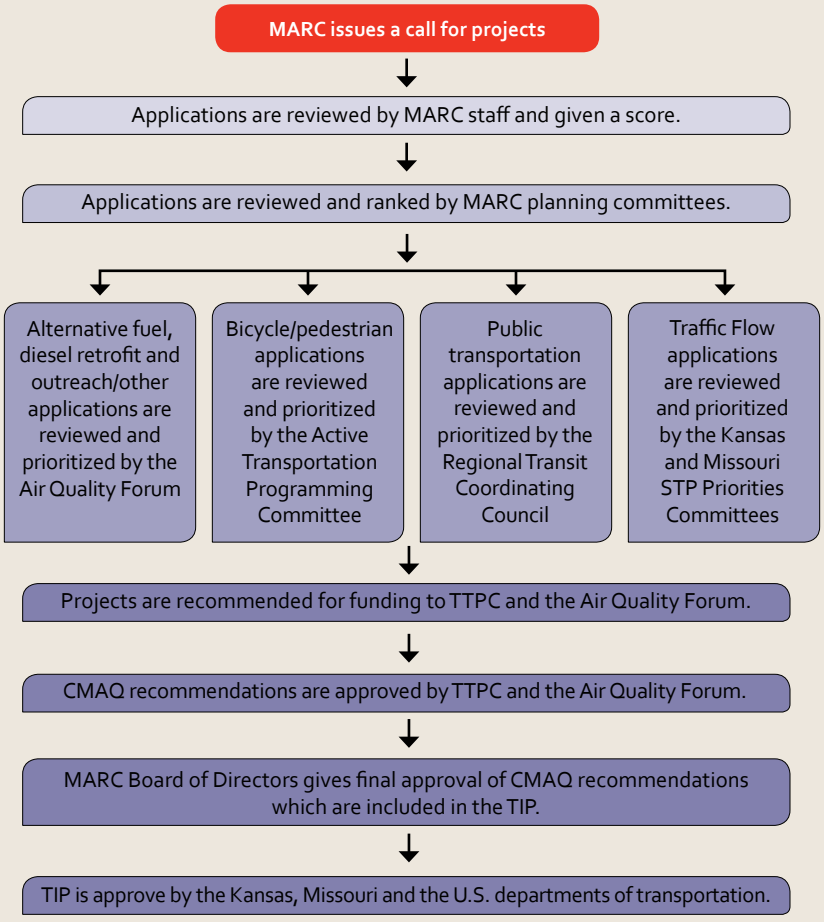
CMAQ Programming Responsibilities

Category	Responsible Committee
Alternative fuel, diesel retrofit and outreach/other	Air Quality Forum
Bicycle/Pedestrian	Active Transportation Programming Committee
Public Transportation	Regional Transit Coordinating Council
Traffic Flow	Kansas & Missouri STP Priorities Committees

The Kansas City metropolitan area retains eligibility to receive CMAQ funding under the FAST Act since the area was designated as an attainment area for air quality in May 2005. In Kansas, since all areas of the state are in attainment for all criteria pollutants, KDOT elects to distribute a portion of minimum-allocation CMAQ funds in the Kansas City and Wichita areas. In Missouri, some areas of the state are in non-attainment for one or more criteria pollutants, and the Kansas City area receives a share of the CMAQ funding that is attributable to the state.

For the projects in the 2020–2024 TIP, MARC programmed these CMAQ funds using a competitive application process through the Kansas and Missouri STP

Figure 4: CMAQ Programming Process



[1] https://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm

committees, the Active Transportation Programming committee, Air Quality Forum and the Regional Transit Coordinating Council.

A competitive application process requires applications to be reviewed and scored against each other to produce a list of prioritized projects.

Project applications were solicited in six categories:

- Alternative fuels.
- Bicycle and pedestrian.
- Public transportation.
- Traffic flow.
- Outreach and other.
- Diesel retrofit.

MARC staff determine scores for CMAQ funding applications based on criteria developed by the committees. Scoring factors include (but are not limited to) emissions-reduction capability, cost effectiveness, connectivity, consistency with regional planning and impact on regional vehicle miles traveled. Each of the committees use these scores, advisory rankings from the MARC planning committees, other relevant information, and committee discretion to develop a ranking of proposed projects. Finally, the committees make recommendations to the TTPC and Air Quality Forum. Additional information regarding the CMAQ program is available online at marc.org/Transportation/Funding/FHWA/Congestion-Mitigation-Air-Quality.

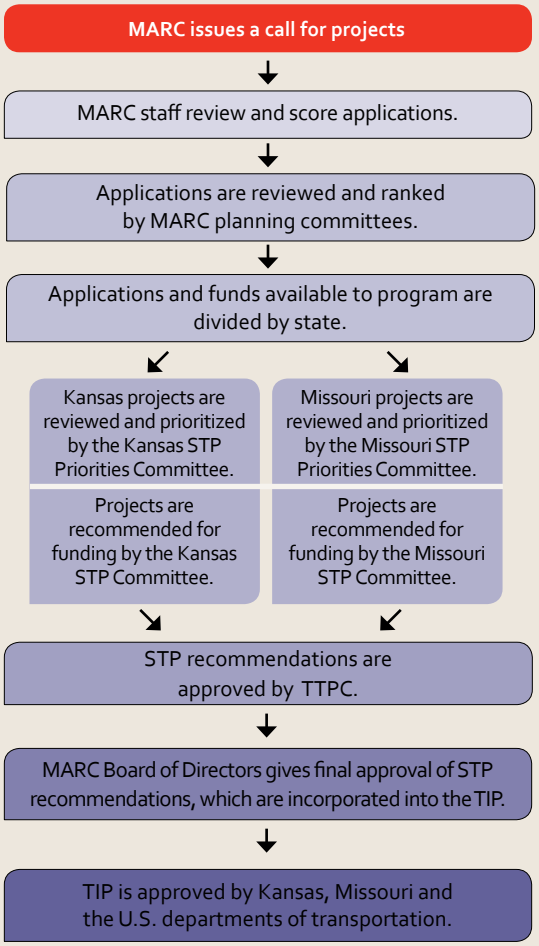
Surface Transportation Block Grant Program

The Surface Transportation Block Grant Program (STP) provides flexible funding that may be used by states and localities for projects on any federally aided highway, including the National Highway System, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. STP funds are divided into a number of subcategories using a formula based on population; the largest subcategory is for funds suballocated to Transportation Management Areas (TMAs) with populations greater than 200,000. These funds are referred to as STPM. MARC programs these funds using competitive application processes governed by its Kansas and Missouri STP Priorities committees; both are subcommittees of the Total Transportation Policy Committee.

Project applications are solicited in seven categories:

- Bridge restoration and rehabilitation.
- Bicycle and pedestrian.
- Livable communities pilot projects and other.
- Public transportation.
- Roadway capacity.
- Transportation operations and management.
- Transportation safety.

Figure 5: STP programming processes



Applications for STP funding undergo a technical review by MARC staff to determine scores based on criteria developed by the committee. Projects are scored based on factors such as system performance and condition, multimodal considerations, safety, environment, economic vitality, and consistency with regional goals. The Priorities Committees use these scores, advisory rankings developed by the MARC planning committees, public input, other relevant information and committee discretion to develop

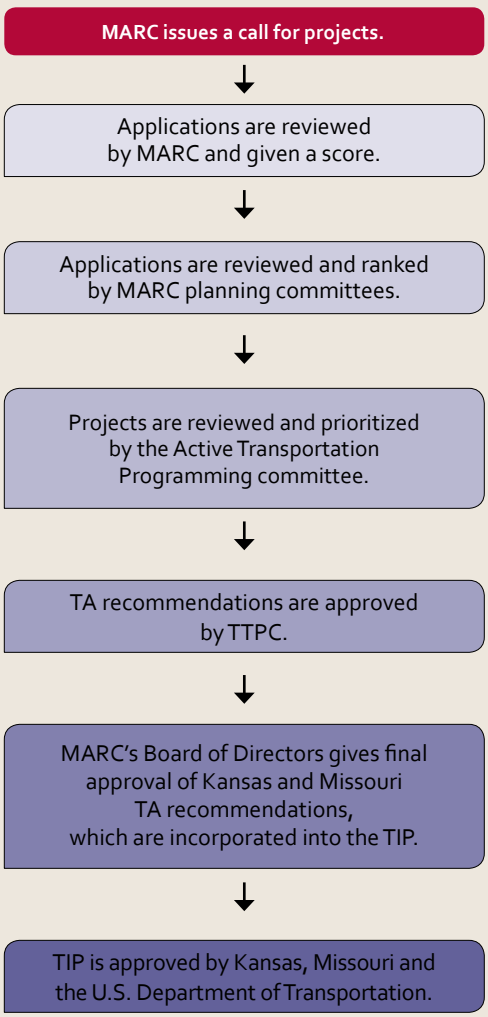
a ranking of proposed projects for each category. Finally, the committees make recommendations to the TTPC. Additional information regarding the STP programs is available online at marc.org/Transportation/Funding/FHWA/Surface-Transportation-Program

Surface Transportation Block Grant Program - Set Aside for Transportation Alternatives (TAP)

The Transportation Alternatives Program (TAP) provides for a variety of alternative transportation projects that were previously eligible activities programs such as Transportation Enhancements and Safe Routes to School. The program supports projects that expand travel choices and enhance the transportation experiences through improvements to the cultural, aesthetic, historic and environmental aspects of the transportation network. Eligible activities include bicycle and pedestrian accommodation, safe routes to school programs and recreational trails.

MARC staff conducts a technical review of applications received for TA funding. Applications are scored for prioritization based on factors such as system performance and condition, safety, environment, economic vitality, and economic vitality. The Active Transportation Programming Committee (ATPC) uses these scores, advisory rankings from the MARC planning committees, other relevant information, and committee discretion to develop a ranking of proposed project. Finally, the committee makes a recommendation to the TTPC. The committee may adjust the initial scores before submitting its project recommendations to the TTPC and the MARC Board of Directors. Additional information regarding the TA program is available online at www.marc.org/Transportation/Funding/FHWA/Transportation-Enhancements-Transportation-Alterna

Figure 6: Transportation Alternatives Programming Process



Federal Transit Administration Programs

Section 5310

The FAST Act continues the Federal Transit Administration's Section 5310 Capital Assistance Program. The program provides funds to support the transport of elderly and/or the disabled where public transportation services are unavailable, insufficient or inappropriate through a direct suballocation of funding to large urbanized areas with populations greater than 200,000. The Kansas City Area Transportation Authority is the federally designated recipient of these funds.

A locally developed, coordinated public transit-human services transportation plan must include projects selected for funding. A competitive selection process, previously required under the New Freedom program, is now optional. At least 55 percent of program funds must be spent on the types of capital projects eligible under the former section 5310 — public transportation projects planned, designed and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate or unavailable. The remaining 45 percent may be used for public transportation projects that exceed the requirements of the ADA, such as public transportation projects that improve access to fixed-route service and decrease reliance by individuals with disabilities on complementary paratransit or alternatives to public transportation that assist seniors and individuals with disabilities. These funds require a 50 percent local match when used for operating expenses; a 20 percent local match is required when using these funds for capital expenses, including acquisition of public transportation services.

MARC programs these funds using a competitive application process governed by the Mobility Advisory Committee (MAC). MAC is a subcommittee of the Regional Transit Coordinating Council and is co-administered by MARC and the KCATA.

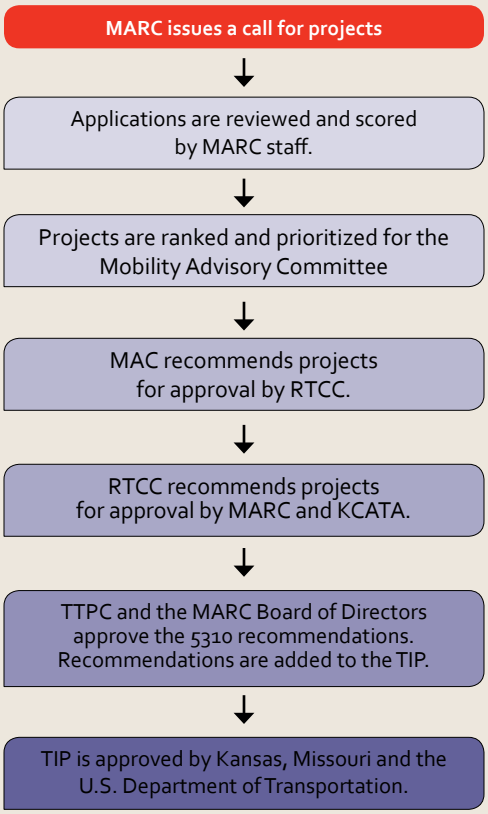
Project applications are solicited in four categories:

- Capital projects.
- Operations projects.
- Vehicle purchases.
- Vehicle-related equipment and facilities.

Applications for Section 5310 funding undergo a technical review by MARC staff to determine scores based on criteria developed by the committee. Projects are scored based on factors such as community involvement, system coordination, project sustainability, scalability, accessibility and regional service. The Mobility Advisory Committee uses these scores, other relevant information and committee discretion to develop a ranking of proposed projects.

Finally, the committee makes recommendations to the Regional Transit Coordinating Council. Additional information regarding the 5310 program is available online at marc.org/Transportation/Funding/FTA/5310.

Figure 7: Section 5310 Programming Process



Other federal funds

The majority of Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) program funds in the TIP are not directly suballocated. The state departments of transportation, transit operators and local jurisdictions make programming decisions for these funds in cooperation with MARC and its committees.

In Missouri, MoDOT establishes funding targets for each of its seven MoDOT districts as directed by funding allocation policies from the Missouri Highways and Transportation Commission. MoDOT works through MARC's various transportation committees to establish priorities for state-system projects in the Kansas City area. More information about MoDOT's planning framework is available online at: www.modot.org/sites/default/files/documents/EPGPublicInvolvementforPlanningProcessX%5B1%5D.pdf

In Kansas, KDOT established ranges of funding targets for elements of the comprehensive 10-year T-WORKS program for each of its six districts in 2010. KDOT also implemented an extensive stakeholder engagement process to gather input into its statewide project selection process. More information about KDOT's T-WORKS process is available at: http://kdotapp.ksdot.org/TWorks/.

The bistate Kansas City Area Transportation Authority (KCATA) is the largest provider of public transportation in the Kansas City metropolitan area. In addition, substantial public transportation services are provided by Johnson County, Kansas; the city of Independence, Missouri; the Unified Government of Wyandotte County/Kansas City, Kansas; and the Kansas City Streetcar Authority. The KCATA provides contract management and planning services for the city of Independence and Johnson County, and operates several of the Unified Government Transit routes directly. These four transit agencies submit projects to MARC for inclusion in the TIP. The Kansas City Streetcar began service in downtown Kansas City, Missouri, in 2016. KCATA is the designated recipient for Federal Transit Administration (FTA) programs other than those listed above.

During the development of a new TIP, proposed projects undergo a number of evaluations prior to their inclusion. Projects of regional significance are analyzed for their impacts on regional air quality. All projects are subject to financial analysis to determine if there are sufficient resources available for construction, operations and maintenance. All projects are also subject to an environmental justice analysis that examines their impact on traditionally underserved populations.

Congestion Management Process

Limited financial resources can restrict the ability to increase highway capacity. Planning is necessary for efficient management and operation of the existing transportation system. The Congestion Management Process (CMP) helps create a systematic way of monitoring, measuring and diagnosing the causes of current and future congestion on a region's multimodal transportation systems; evaluating and recommending alternative strategies to manage current and future regional congestion; and monitoring and evaluating the performance of strategies implemented to manage congestion.

MARC has developed a CMP to meet the unique needs of the Kansas City area. This CMP includes methods to provide information on the performance of the transportation system and on alternative strategies to manage congestion and enhance mobility and safety. It uses an objectives-driven, performance-based approach to manage congestion, and emphasizes effective management of existing facilities through travel demand and operational management strategies.

The MARC CMP is related to the development of the regional Transportation Improvement Program in four ways:

- It provides system performance information for use by MARC in evaluating projects nominated for inclusion in the TIP.
- It provides system-performance information for project sponsors and may influence project recommendations for incorporation in the TIP.
- It provides information about alternative-congestion management strategies considered | for single-occupant vehicle capacity projects to be advanced using federal funds.
- Its objectives are integrated with the application scoring process used to select and prioritize projects in the TIP.

Regulations about the CMP state that federal funds may not be programmed for any project in a Transportation Management Area (TMA) that will create a significant increase in the carrying capacity of single-occupant vehicles (SOVs), unless the project is addressed through a CMP. MARC's TMA defines a project with significant increase to SOV capacity as adding one or more through lanes for a distance of one-half mile or longer on a facility classified as minor arterial or higher on the FHWA functional classification system. In preparation for a possible re-designation to nonattainment air quality status during the 2020–2024 TIP time frame, MARC's CMP includes procedures to justify the addition of SOV capacity.

To justify additional capacity, a project sponsor shall conduct and document a congestion mitigation analysis during the planning stage of project development which shows that additional SOV capacity is necessary to manage congestion. The analysis should include consideration of noncapacity strategies such as travel demand management (TDM) and transportation system management (TSM). The documentation must also indicate how the capacity project includes management and operations strategies. More information about MARC's CMP is available on the online at https://www.marc.org/Transportation/Plans-Studies/Streets-Highways/Congestion-Management-Process.

Complete Streets

In 2015, the MARC Board of Directors approved an updated Complete Streets Policy in support of the region's vision for a safe, balanced, multimodal and equitable transportation system that is coordinated with land-use planning, protective of the environment and guides and informs MARC's planning and programming work.

Complete streets are streets, highways and bridges that are routinely planned, designed, operated and maintained with the consideration of the needs and safety of all travelers along and across the entire public right-of-way. This includes people of all ages and abilities who are walking; driving vehicles such as cars, trucks, motorcycles, or buses; bicycling; using transit or mobility aids; and freight shippers. The policy also supports the integration of "green street" concepts into projects in order to advance context-sensitive, multimodal uses and promote environmental solutions in the region's transportation planning, project development and project selection processes.

MARC's programming processes for suballocated funding include consideration of Complete Streets policy requirements during the application and evaluation of each project. The policy recognizes that every street may not be suitable for complete street planning and exceptions may be granted; however, less than 5 percent of the funding programmed by MARC has gone to projects requiring an exception since the policy's adoption. Information regarding MARC's Complete Streets policy is available on the online at marc.org/Transportation/Special-Projects/Regional-Initiatives/Complete-Streets.

TIP timeline

Following the analyses and committee approvals described above, a proposed list of TIP projects is presented to the TTPC and released for public review and comment, as detailed in MARC's Public Participation Plan. After the public comment period and resolution of any issues raised, MARC's Board of Directors reviews and adopts the TIP. At that point, MARC's commitment to projects utilizing suballocated funding is formalized. Following its adoption by MARC's Board of Directors, the TIP is incorporated by reference and without modification, into the Statewide Transportation Improvement Program (STIP) for both Kansas and Missouri.

From time to time, project information in the TIP must be updated after its official adoption. MARC updates the TIP on quarterly cycle at no cost to project sponsors through the TIP amendment process. TIP modifications that do not coincide with the regular quarterly cycle are done through special amendment; all costs for this process must be borne by the project sponsor.

Revisions to the TIP are categorized as either Amendments or Administrative Modifications, depending on the type and scope of the revision. The criteria used to determine the modification category are detailed online at marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/TIP/TIP-modify-or-amend.

The list of projects proposed for amendment is analyzed by MARC for impacts to air quality and financial constraint. The amendment is then presented to the TTPC and released for public review and comment as detailed in the MARC Public Participation Plan. Following completion of the public comment period and resolution of any issues raised, the TIP amendment is submitted to TTPC and the MARC Board of Directors for formal adoption. Following adoption by MARC, the TIP must be approved by the Governors of Kansas and Missouri and the U.S. Department of Transportation (USDOT).

Projects from the 2018–2022 TIP implemented or delayed

Federal regulations require that the TIP include a list of major projects from the previous TIP that have been implemented or have experienced significant delays in their planned implementation (23 CFR 450.324(l) (2)). To comply with this regulation only, MARC created the following definitions for a major project and a significant delay.

Major project: A project that has a total cost of more than $30 million.

Significant delay: A delay of two years or more from a project's first year listed in the previous TIP.

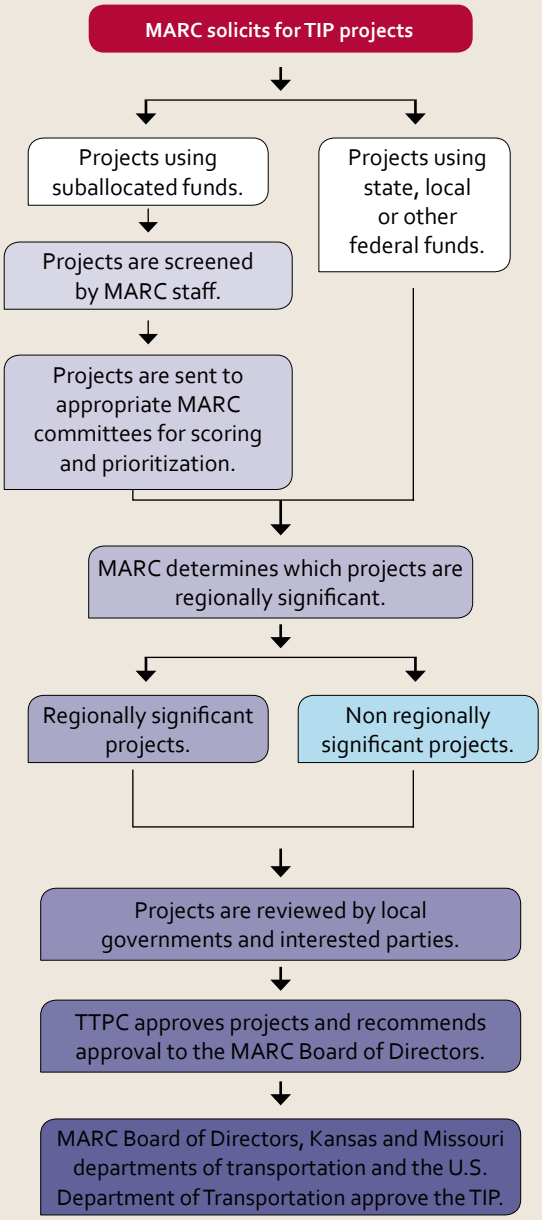
No projects from the 2018–2022 TIP meet the criteria for significant delay.

MARC has compiled a listing of all projects included in the 2018–2022 TIP which been completed, are under construction, or have been withdrawn by request of the project sponsor. This information is available in Appendix D.

Annual listing of obligated projects

In addition to the requirement previously noted, MARC is also required to produce an Annual Listing of Obligated Projects for which Federal funds have been obligated in the preceding year (23 CFR 450.332). The 2019 report, like its predecessors, will be cooperatively developed through the efforts of states, transit operators, and MARC, and will cover the period from Oct. 1, 2018 to Sept. 30, 2019. MARC will produce the Annual Listing by Dec. 31, 2019, in accordance with 23 CFR 450.332 and the MARC Public Participation Plan.

Figure 8: TIP Amendment Process



3. Public Participation

MARC seeks to provide participation opportunities for residents interested in the transportation planning process, and to engage members of the community who have not traditionally been involved. It is MARC's goal to have a significant, ongoing public participation process that ensures early and continuous involvement in all major transportation decisions. The Public Participation Plan provides a framework that guides public involvement in MARC's transportation planning projects, including the Transportation Improvement Program (TIP). The Public Participation Plan specifies goals, strategies and techniques that encourage successful public participation.

MARC uses a range of public involvement strategies throughout the development of its core transportation plans. The Public Participation Plan sets a consistent standard across different planning efforts but recognizes that strategies may vary by project. Early engagement and continuous participation are important goals that merit consideration in all transportation planning processes.

When to get involved

Because the TIP is dependent on previous planning and programming work, early public involvement in its development — well in advance of circulating a draft document — is key. The earliest, most relevant point for public participation is during the development of the Metropolitan Transportation Plan (MTP), as funding priorities are established during this stage. MARC's funding programs and associated projects are derived directly from the policies and the transportation investments contained in the MTP. Once the MTP is complete, public participation opportunities continue as funding programs are developed, projects are selected, and the TIP is drafted. When projects in the TIP enter the preliminary engineering phase, the detailed environmental review process allows additional opportunities for public comment.

Public notification and participation procedures and techniques

Inform and educate the public

MARC's extensive **website**, www.marc.org, hosts information on all aspects of the transportation planning process, including TIP documents and project listings. Through the website, MARC provides information to the public and solicits input, feedback, review and comment on all TIP updates and amendments.

Visualization techniques, including interactive and static maps that illustrate project locations and other information, enhance the website user's understanding of the TIP.

MARC also uses **publications and mailings** to inform interested parties about the TIP, providing information about public comment periods, points of contact and ways to get involved. MARC staff maintains a contact list of interested parties to share this information. People can sign up to receive information free of charge by completing an online form, calling 816-474-4240 or emailing transportation@marc.org.

When the TIP is updated or amended, information is shared via the following resources:

- Transportation Matters — a blog, written and edited by MARC staff, that provides information about major transportation plans and projects; public comment period announcements; TIP updates and amendments; upcoming meetings, events and activities; and possible transportation decisions and actions.

In addition to its electronic communications, MARC keeps all documents, publications and pertinent material on file for public inspection during regular office hours at 600 Broadway, Suite 200, Kansas City, Missouri. Persons wishing to view this material may call 816-474-4240 for an appointment.

Newspaper advertisements and social media are used to help notify the public of public review and comment periods for the TIP updates and amendments. Advertisements are placed in a variety of local newspapers, including Spanish-language newspapers. These advertisements and notices announce each 14-day public review and comment period and include instructions on how to submit comments. MARC also announces public comment periods on its Facebook page and Twitter feed.

Public engagement and inclusion

MARC maintains a consultation list to provide ongoing participation and communication opportunities for those individuals, organizations and agencies who seek additional interaction. This list is used to share expanded involvement opportunities and provide early notification of events and meetings. Individuals have the opportunity to indicate specific areas of interest and receive notification of comment periods, public forums and other regional activities related to related topics or projects. Interested parties may join the list via the MARC website or by calling 816-474-4240.

MARC's public participation goals:

- *Inform and educate the public.*
- *Reach out and build connections.*
- *Public engagement and inclusion.*
- *Use input to shape policies, plans and programs.*
- *Evaluate public participation strategies.*

MARC's committee structure provides an opportunity for transportation stakeholders, local governments and citizens to work together to address transportation and air quality issues. Complete TIP updates and amendments are reviewed and approved by the Total Transportation Policy Committee (TTPC) prior to their release for public review and comment. Committees operating under the TTPC's guidance meet to program and prioritize projects for suballocated funds — such as the Surface Transportation Program (STP), Congestion Mitigation Air Quality (CMAQ) and Transportation Alternatives (TA) — to be included in the TIP (see Chapter 2: Transportation Improvement Program).

Public notification of MARC Board, TTPC and other committee meetings occurs at the same time committee members are notified. Operating procedures (such as, methods of notification and handling of impromptu meetings or changes in the agenda) may vary for each committee. Detailed information can be found in the bylaws or operating procedures of each committee. MARC completes public notification by posting the agenda or meeting notice, including the time, date, and place of the meeting, on the appropriate committee page of the MARC website and meeting calendar. Additionally, an email notification is sent to committee members, interested parties and members of the news media who have expressed an interest in receiving such notifications. Hard copies may also be requested or downloaded directly from the website.

All of MARC's transportation committee meetings are open to the public, and citizens are encouraged to attend, participate and become informed about the planning process.

Use input to shape policies, plans and programs

MARC summarizes and responds to all substantive written comments, reports and responses to policy committees (including TTPC), regulatory agencies and the MARC Board of Directors before final adoption of the document or amendment. A complete list of comments and responses received during the comment period for a full TIP update is also provided in the Appendix C of the TIP document. This document can be found on the MARC website.

Evaluate public participation strategies

Each year, MARC staff evaluates the effectiveness of the public participation process as it relates to the TIP. The evaluation focuses on five areas: outreach, engagement, communication and acknowledgement, influence and incorporation, and participant assessments and suggestions. For a complete overview of this process, please access the Public Participation Plan on the MARC website or contact MARC to request a copy.

4. Financial plan

Current federal transportation law and regulations require that metropolitan transportation improvement programs include a financial plan that demonstrates how the TIP can be implemented; indicates resources from public and private sources that can be reasonably expected to be available to carry out the program; identifies innovative financing techniques to finance projects, programs, and strategies; and may include, for illustrative purposes, additional projects that would be included in the approved TIP if reasonable additional resources beyond those identified in the financial plan were available.

This section estimates the anticipated available revenues and compares them to the costs to implement the FFY 2020–2024 TIP. The analysis is based largely on revenue and expenditure information supplied to MARC by the Kansas and Missouri departments of transportation, public transportation agencies and local governments.

Estimates of highway revenues and expenditures were developed separately for the Kansas and Missouri portions of the metropolitan area, since the expenditure of federal funds in a state other than the one to which they were allocated would require special legislative action. Transit revenues and expenditures, however, were estimated on a region-wide basis, because the majority of federal transit funds are allocated directly to the region. Revenue estimates for the 2020–2024 TIP were developed cooperatively by MARC, the states and public transportation operators. These estimates are also adjusted for inflation. Estimates of federal suballocated funds were developed using amounts authorized under the FAST Act, reduced by 10 percent to account for obligation limitation.

The Fixing America's Surface Transportation (FAST) Act, enacted in December 2015, continues the basic requirements for financial planning as first introduced by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and reaffirmed by its program successors, and continues two financial planning requirements established under SAFETEA-LU in 2009. First, the TIP must contain a system-level estimate of the costs and revenue sources that can be reasonably expected to be available to adequately operate and maintain the multimodal transportation system. Second, the TIP is required to use revenue and cost estimates that apply an inflation rate to reflect "year-of-expenditure" dollars.

Project cost estimates in the 2020–2024 TIP are developed by individual project sponsors based on historical costs for projects of comparable scale and design. In most cases, these project cost estimates account for inflation. For projects where inflation was not factored in by the individual project sponsors, MARC has applied a 4% inflation factor. The inflation factor was not applied to suballocated federal funds in the TIP because these funds are capped by MARC and are not subject to inflation.

It is important to note that this analysis is subject to a number of inherent limitations:

- Projections of federal funding involve a measure of uncertainty as the current legislation authorizing federal transportation expires at the end of the 2020 fiscal year. At this time, considerable concern exists about the viability of the federal transportation program. MARC recognizes these concerns but must continue to program funds in order to accommodate the often lengthy project-development process.
- Revenue from local sources was extrapolated from data provided by local governments and may not fully account for private-sector (developer) funding or for the level of general-fund support for transportation.

It is important to first understand the distinction between MARC's actions to "program" funds for projects in the TIP and state and federal actions to "obligate" funds for projects. When MARC

programs federal funds for a project in the TIP, the project becomes eligible for future reimbursement of funds, pending satisfactory completion of a number of project-development activities. However, at this point no actual dollars are committed to the project by the federal government. Only when the project has completed the required project-development process and has obtained all necessary local, state and federal approvals are real dollars committed — or obligated — by the federal government.

The TIP identifies the first year in which a project is authorized for federal reimbursement. Funds may actually be obligated for the project in that year or in any of the subsequent three years. Federal rules establish a four-year window during which funds may be obligated for authorized transportation projects. MARC assumes that all projects will be obligated in the year programmed unless otherwise notified. To meet this expectation, a number of MARC committees have implemented "reasonable progress" policies that are designed to ensure that the region is obtaining the maximum benefit of its federal transportation funds.

MARC estimates federal revenues on an annual basis, even though projects may be implemented
at any time during a four-year period, so annual revenues and expenditures may not always appear to reconcile within the TIP database. The financial analysis for these programs compares the original program years for revenues and expenditures against each other and may not reflect actual obligations in any given year.

Know the terms:

- ***Program** means to delegate a project to be eligible for future reimbursement of federal funds.*
- ***Obligate** means federal approval of the project and the actual money is committed to the project.*

Suballocated federal programs

Congestion Mitigation and Air Quality Program

The Congestion Mitigation and Air Quality Program (CMAQ), continued in the FAST Act, provides a flexible funding source to states, local governments and other eligible project sponsors for transportation projects and programs that help meet the requirements of the Clean Air Act of 1991. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide or particulate matter (nonattainment areas) as well as former nonattainment areas that are now in compliance (maintenance areas). Although it was redesignated as an attainment area for air quality in May 2005, the Kansas City metropolitan area remains eligible to receive CMAQ funding.

In 2018, MARC programmed CMAQ funds through FY 2022 in a competitive application process, and distributed among five modal transportation committees. The MARC Air Quality Forum (AQF) and Total Transportation Policy Committee (TTPC) governed this process.

As mentioned previously, projections of federal funding involve a measure of uncertainty because the current legislation authorizing federal transportation will expire at the end of the 2020 fiscal year. In early 2020, MARC expects to begin the process of developing a new program for CMAQ projects in both Kansas and Missouri through at least FY 2024. MARC recognizes the concerns about the instability of the federal program and the potential for significant future program revisions; but program funds in later years of the TIP must be assumed in order to accommodate the often lengthy project-development process.

The 2020–2024 TIP includes previously programmed CMAQ projects for which funds have not yet been obligated. Obligation authority for these projects has been reserved. Revenues for 2021–2022 have been projected based on levels of funding under the FAST Act. Table 5 summarizes the expected revenues and expenditures for the CMAQ program.

Table 5: MARC CMAQ Program ($1,000s)

Kansas	2020	2021	2022	2023	2024	**Total**
Revenue	$2,815.75	$2,788.78	$2,906.00	$2,991.95	$2,991.95	**$14,494.43**
Carryover from previous years	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Expenditure	$2,815.75	$2,038.78	$2,906.00	$0.00	$0.00	**$7,760.53**
AC Conversion	$0.00	$750.00	$0.00	$0.00	$0.00	**$750.00**
Total remaining	$0.00	$0.00	$0.00	$2,991.95	$2,991.95	**$5,983.90**
Missouri	2020	2021	2022	2023	2024	**Total**
Revenue	$2,943.07	$2,943.07	$2,943.07	$2,943.07	$2,943.07	**$14,715.35**
Carryover from previous years	$882.23	$0.00	$0.00	$0.00	$0.00	**$882.23**
Expenditure	$3,528.30	$2,839.00	$2,810.50	$0.00	$0.00	**$9,177.80**
AC Conversion	$297.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Total remaining	$0.00	$104.07	$132.57	$2,943.07	$2,943.07	**$6,122.78**

Surface Transportation Block Grant Program

The FAST Act converts the long-standing Surface Transportation Program (STP) into the Surface Transportation Block Grant Program, acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs and aligning the program's name with how FHWA has historically administered it. STP promotes flexibility in state and local transportation decisions and provides flexible funding to best address state and local transportation needs.

The FAST Act continues all prior STP eligibilities. It also adds new eligibilities for states to create and operate offices to help design, implement and oversee public-private partnerships (P3). The FAST Act also adds specific mention of the eligibility of the installation of vehicle-to-infrastructure communication equipment.

In 2018, MARC programmed STP funds through FY 2022 using a competitive application process. MARC's Kansas and Missouri STP Priorities Committees, subcommittees of the Total Transportation Policy Committee (TTPC), govern this process. As with other programs, projections of federal STP funding involves a measure of uncertainty. In early 2020, both the Kansas and Missouri STP Priorities committees will begin the process of developing a new round of projects for FFY 2023–2024. While there is potential for significant future program revisions, program funds in later years of the TIP must be assumed in order to accommodate the often lengthy project-development process.

The 2020–2024 TIP includes previously programmed STP projects for which funds have not yet been obligated. Obligation authority for these projects has been reserved. Revenues for 2023–2024 have been projected based on levels of funding under the FAST Act. Since MARC has programmed STP funds only through 2022, no expenditures exist for 2023–2024 in these programs.

Table 6: Kansas STPM Program ($1,000s)

	2020	2021	2022	2023	2024	**Total**
Expected annual allocation	$14,289.62	$15,359.83	$14,133.00	$13,623.04	$13,623.04	**$71,028.53**
Carryover from previous years	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Expenditures	$14,289.62	$15,359.83	$12,180.00	$0.00	$0.00	**$41,829.45**
AC Conversion	$0.00	$0.00	$1,953.00	$0.00	$0.00	**$1,953.00**
Total remaining	$0.00	$0.00	$0.00	$13,623.04	$13,623.04	**$27,246.08**

Table 7: Missouri STPM Program ($1,000s)

	2020	2021	2022	2023	2024	Total
Expected annual allocation	$20,518.32	$20,518.32	$20,518.32	$20,518.32	$20,518.32	**$102,591.60**
Carryover from previous years	$7,607.68	$0.00	$0.00	$0.00	$0.00	**$7,607.68**
Expenditures	$27,458.00	$20,120.00	$19,845.00	$10,000.00	$10,000.00	**$87,423.00**
AC Conversion	$668.00	$0.00	$0.00	$0.00	$0.00	**$668.00**
Total remaining	$0.00	$398.32	$673.32	$10,518.32	$10,518.32	**$22,108.28**

Transportation Alternatives

The FAST Act eliminated the MAP-21 Transportation Alternatives Program (TAP) and replaced it with a set aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity.

In 2018, MARC used a competitive application process to program Transportation Alternatives funding directly suballocated to the region through FY 2022 in both Kansas and Missouri. MARC's Active Transportation Programming Committee, a subcommittee of the Total Transportation Policy Committee (TTPC), governed this process.

MARC expects to begin developing a new round of Transportation Alternatives projects through at least FY 2024 for both Kansas and Missouri in early 2020. Because of the instability of the federal program and the potential for significant future program revisions there is a measure of uncertainty, but program funds in later years of the TIP must be assumed in order to accommodate the often lengthy project-development process. The 2020–2024 TIP includes previously programmed Transportation Alternatives projects for which funds have not yet been obligated. Obligation authority for these projects has been reserved. Revenues for 2023–2024 have been projected based on levels of funding provided under the FAST Act.

Table 8: Transportation Alternatives Program ($1,000s)

Kansas	2020	2021	2022	2023	2024	Total
Expected annual allocation	$1,206.00	$2,050.00	$652.00	$1,090.83	$1,090.83	**$6,089.66**
Carryover from previous years	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Expenditure	$876.00	$2,050.00	$652.00	$0.00	$0.00	**$3,578.00**
AC Conversion	$330.00	$0.00	$0.00	$0.00	$0.00	**$330.00**
Total remaining	$0.00	$0.00	$0.00	$1,090.83	$1,090.83	**$2,181.66**
Missouri	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Expected annual allocation	$1,623.63	$1,623.63	$1,623.63	$1,623.63	$1,623.63	**$8,118.14**
Carryover from previous years	$5,228.58	$454.94	$0.00	$0.00	$0.00	**$5,683.52**
Expenditure	$6,852.21	$2,078.57	$1,228.57	$0.00	$0.00	**$10,159.35**
AC Conversion	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Total remaining	$0.00	$0.00	$395.06	$1,623.63	$1,623.63	**$3,642.31**

FTA Section 5310 — Enhanced Mobility of Seniors and Individuals with Disabilities

The FAST Act continued the Federal Transit Administration's Section 5310 Capital Assistance Program, which provides funding to support transporting the elderly and/or disabled where public transportation services are unavailable, insufficient or inappropriate, by incorporating the former New Freedom program and establishing a direct suballocation of funding to large urbanized areas (those with more than 200,000 in population). The Kansas City Area Transportation Authority (KCATA) is the federally designated subrecipient for the funds suballocated to the Kansas City metropolitan area.

Projects selected for funding must be included in a locally developed, coordinated public transit/human services transportation plan; and the competitive selection process, previously required under the New Freedom program, is now optional. At least 55 percent of program funds must be spent on capital projects eligible under the former section 5310 — public transportation projects planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The remaining 45 percent may be used for public transportation projects that exceed the requirements of the ADA, improve access to fixed-route service and decrease reliance on complementary paratransit by individuals with disabilities; or alternatives to public transportation that assist seniors and individuals with disabilities. A 50 percent local match is required when using these funds for operating expenses; a 20 percent local match is required when using these funds for capital expenses.

In 2018, the Mobility Advisory Committee used a competitive application process to determine priorities for funding made available under the FAST Act. MARC expects to program additional 5310 funding in early 2020.

Street and highway

The following sections describe the financial analysis for street and highway projects that are not funded through suballocated federal programs. In general, these projects are advanced by KDOT or MoDOT, using combinations of state and federal funds, or by local governments using local fund or local and federal funds.

Kansas Analysis

The FAST Act provides federal aid to states and local units of government through FFY 2020 at levels consistent with previous federal transportation legislation. It is expected that this funding will continue beyond 2020 through short-term extensions of the legislation or the passage of new federal transportation legislation. While future federal funding remains uncertain, for FFY 2020 and beyond KDOT has assumed level federal funding based on the reduced funding levels seen under the FAST Act.

In 2010, Kansas developed a new comprehensive transportation program, Transportation Works for Kansas (T-WORKS). This program, primarily funded through a sales tax increase, new bonding capacity and an increase to heavy-truck registration fees, represents a $7.7 billion investment over a 10-year period. Additional funding sources for the T-WORKS program include, but are not limited to, motor fuels taxes, vehicle registration fees, drivers' license fees, mineral royalties and signboard permit fees. Sales tax receipts, comprising 44%, are the largest source of state-generated highway revenues, followed by taxes on motor fuels, estimated at 37%. Vehicle registration fees and the other income sources represent the remainder of state-generated highway revenues. Revenue collectively generated from these sources is expected to remain steady over the period covered by the 2020–2024 TIP.

No allocation formula can predict federal and state revenues available to the Kansas City region for Kansas highway funding. Therefore, for Kansas programming, implementation revenues are tied directly to programmed project expenditures.

Local government sources of transportation funds include state and federal motor-fuel tax revenue, state funds, property taxes, local-option sales taxes and bond issues. To create the local revenue estimates used in the 2020-2024 TIP, MARC followed the process used for Transportation Outlook 2040, the region's metropolitan transportation plan. In that process the projected gross regional product (GRP) growth rate, developed by Regional Economic Modeling Inc., was applied to aggregate local revenue. A percentage derived from the most recent Census of Governments was then applied to calculate the estimate of local revenue available for transportation. For the Kansas portion of the MARC region, this was 11%. Please note, the forecasts of local revenue may not fully account for the level of private-sector funding available or for additional funding sources available to local governments.

Kansas projects that were programmed prior to FY 2020 but were not placed under contract as of September 2019 are carried forward into the FY 2020–2024 TIP.

Missouri Analysis

The FAST Act provides federal aid to states and local units of government through FFY 2020 at levels consistent with previous federal transportation legislation. It is expected that this funding will continue beyond 2020 through short-term extensions of the legislation or the passage of new federal transportation legislation. While future federal funding remains uncertain, for FFY 2020 and beyond MoDOT has assumed level federal funding based on the reduced funding levels seen under the FAST Act.

Funding for MoDOT consists of federal and state revenue and existing cash balances. The largest source of transportation revenue for MoDOT is from the federal government, including the 18.4 cents-per-gallon tax on gasoline and 24.4 cents-per-gallon tax on diesel fuel. Combined with other sources, revenues from the federal government account for approximately 40 percent of MoDOT's transportation revenue. MoDOT's second largest source of transportation revenue is the state fuel tax. Approximately 26% of the revenue generated from the state's 17 cents-per-gallon tax on gasoline and diesel fuels is distributed to cities and counties, to spend on highway and bridge projects. This revenue source also includes a 9 cents-per-gallon tax on aviation fuel which must be spent on airport projects. These tax revenues represent approximately 25% of transportation revenues.

MoDOT also receives a portion of the state sales taxes, generated through the purchase or lease of motor vehicles. This revenue source includes the sales tax paid on aviation fuel which is dedicated to airport projects. These tax revenues represent approximately 13 percent of transportation revenues. Additional revenue is provided through a number of miscellaneous fees, such as interest, sales of surplus property, and the General Revenue fund.

Additionally, in 2019 the Missouri General Assembly approved a recently passed initiative that appropriates $50 million from State General Revenue to replace or repair 45 bridges in Fiscal Year 2020. This offsets previously approved funding for these bridges allowing additional projects to be implemented. The legislation also enables MoDOT to bond $310 million to repair or replace another 215 bridges statewide.

Local government sources of transportation funds in Missouri include state and federal motor fuel tax revenue, state funds, property taxes, local option sales taxes and bond issues. To create the local revenue estimates used in the 2020-2024 TIP, MARC followed the process used for Transportation Outlook 2040, the region's metropolitan transportation plan. In that process the projected gross regional product (GRP) growth rate, developed by Regional Economic Modeling Inc., was applied to aggregate local revenue. A percentage derived from the most recent Census of Governments was then applied to calculate the estimate of local revenue available for transportation. For the Missouri portion of the MARC region, this was 12%. The forecasts of local revenue may not fully account for the level of private- sector funding available or for access to additional funding sources by local governments, when necessary.

Additionally, in April 2017 voters in Kansas City, Missouri, approved an $800 million comprehensive capital improvements program and infrastructure repair plan. The program uses revenue created by

the issuance of approximately $40 million in General Obligation (GO) bonds each year for 20 years. These revenues are accounted for in the financial plan of the 2020-24 TIP.

Those Missouri projects programmed prior to FY 2020 and included in the FY 2018–2022 TIP that were not placed under contract as of September 2019, will be carried forward into the FY 2020–2024 TIP.

The estimated street and highway revenues are shown in Table 11; the project costs for each year of the FFY 2020–2024 TIP are included in Table 12. The comparison between these estimates is shown in Table 18. Differences between the estimated federal and state revenue and amounts identified in the TIP are largely due to the variance in the state program from the estimated amounts.

Advance Construction

State and local governments use a federal funding tool called "advance construction" to maximize the receipt of federal funds and provide greater flexibility and efficiency in matching federal aid categories to individual projects. Advance construction (AC) is an innovative funding technique that allows project sponsors to initiate a project using non-federal funds while preserving eligibility for future federal aid. The Federal Highway Administration (FHWA) determines eligibility for federal aid, however no present or future federal aid is committed to the project. Project sponsors may convert the project to regular federal aid, provided that federal aid is available for the project. Advance construction does not provide additional federal funding; it simply allows project sponsors to construct projects with state or local money but seek federal reimbursement in the future. Projects using advance construction are included in the project listing of the 2020–2024 TIP and are accounted for in the financial plan.

Public Transportation Element

The public transportation analysis is limited to the region's primary fixed-route transit operators — Kansas City Area Transportation Authority (KCATA), Johnson County Transit, city of Independence, and Unified Government Transit — and their associated paratransit services, since they are the recipients of virtually all of the federal funding for transit purposes in the region. Federal transit funds are allocated to the region as a whole and include both transit and paratransit. FTA grant programs, local-option tax funds (Missouri only), local government general funds, and passenger fares make up the funding sources for public transportation. Local transit revenue estimates are based on data supplied by area transit operators.

The FAST Act provides a significant source of funding for transit in the region. This legislation emphasizes several important goals, including safety, state of good repair, performance and program efficiency and establishes performance-based planning requirements that align federal funding with key goals and performance measures.

In Kansas City, Missouri, the majority of local support for transit is derived from three separate taxes. A half-cent tax for transportation was approved by the state legislature in 1971, and a 3/8-cent sales tax was approved by voters in 2003 and renewed for 15 years in 2008.

In 2013, a Transportation Development District (TDD) was formed in support of the Kansas City downtown streetcar project. The TDD generates revenue from a one-cent sales tax and special assessments on real property only within the designated development district. In June 2018, a second transportation development district was approved by voters in support of the expansion of the streetcar from its current southern terminus at Union Station to the University of Missouri-Kansas City campus using the same one-cent sales tax and special assessments on real property as the TDD established in 2013. The streetcar extension project continues the process of securing the necessary federal funding for implementation. Based on previous favorable ratings through the federal review process, MARC considers the federal funding to be "reasonably available" and has included the project in the TIP in accordance with 23 CFR 450.326(j).

Other jurisdictions on the Missouri side of the region support the KCATA with general tax revenues. General tax revenues also fund local support on the Kansas side of the region. Local revenue estimates

include passenger fares, which represent a significant source of revenue for public transit services.

The FFY 2020–2024 TIP includes estimated transit revenues and expenditures for each year, and shown in Tables 11 and 12, respectively. A comparison of these estimates is shown in Table 18. The KCATA's ability to secure necessary local funds and federal discretionary funds will help determine the financial feasibility of the transit portion of the FY 2020–2024 TIP.

Financial analysis

Transportation Outlook 2040, the region's metropolitan transportation plan (MTP), is based on estimates of revenue that are reasonably expected to be available for 25 years — from 2015 to 2040. The forecasts for regional highway revenues and regional transit are shown below in Tables 9 and 10.

Table 9: Kansas City region MTP estimated highway revenues

Revenue source	Years			Total
	2015–2022	2021–2030	2031–2040	
Federal	$ 598,353,625	$ 994,989,375	$ 994,989,375	$ 2,588,332,375
State	$ 834,608,875	$ 1,550,850,041	$ 1,830,256,972	$ 4,215,715,888
Local	$ 3,683,777,253	$ 7,351,272,918	$ 9,192,307,864	$ 20,227,358,035
Sub-allocated (MARC)	$ 227,500,000	$ 380,000,000	$ 380,000,000	$ 987,500,000
Total	**$ 5,344,239,753**	**$ 10,277,112,334**	**$ 12,397,554,211**	**$ 28,018,906,298**

Table 10: Kansas City region MTP estimated transit revenues

Revenue source	Years			Total
	2015–2022	2021–2030	2031–2040	
Farebox	$ 87,789,671	$ 158,481,223	$ 175,061,866	$ 421,332,761
Federal	$ 222,479,718	$ 370,799,530	$ 370,799,530	$ 964,078,778
State	$ 11,883,180	$ 21,515,017	$ 24,969,056	$ 58,367,253
Local	$ 589,990,470	$ 1,177,384,054	$ 1,472,231,255	$ 3,239,605,779
Other	$ 99,323,131	$ 172,288,565	$ 181,099,425	$ 452,711,122
Total	**$ 1,011,466,170**	**$ 1,900,468,390**	**$ 2,224,161,132**	**$ 5,136,095,692**

The combined Kansas City region highway revenues identified in the 2020-2024 TIP and detailed in the tables on the following pages total $3,531,792.57, within the range identified by the adopted MTP. The TIP identifies $1,089,399.28 in revenue available for regional transit, also within the range presented in Transportation Outlook 2040. As noted, the TIP only identifies the subset of regional transportation investments limited to projects receiving federal funds, regionally significant projects and operations and maintenance costs, therefore, the revenue estimate for the TIP is lower than the estimate for the MTP.

Table 11: Estimated revenues by year and funding source ($1,000s)						
STATE	**SOURCE**	**2020**	**2021**	**2022**	**2023**	**2024**
Kansas	BUILD-KS	$11,129.30	$0.00	$0.00	$0.00	$0.00
	CMAQ-KS	$2,134.00	$1,572.00	$1,200.00	$2,991.95	$2,991.95
	CREDIT	($71,984.90)	($20,171.80)	($3,703.00)	($4,417.10)	($918.00)
	DEMO-KS	$0.00	$245.00	$0.00	$0.00	$0.00
	HIP-KS	$2,342.88	$3,301.10	$0.00	$0.00	$0.00
	HSIP-KS	$1,831.60	$3,800.30	$750.00	$750.00	$750.00
	LOCAL	$254,284.59	$260,641.70	$267,157.74	$273,836.69	$280,682.60
	LOCAL (AC)	$0.00	$1,953.00	$0.00	$0.00	$0.00
	NFRP-KS	$12,231.70	$12,508.60	$0.00	$679.10	$0.00
	NHPP-KS	$65,530.20	$5,251.80	$1,000.00	$988.00	$0.00
	OTHER	$1,500.00	$0.00	$0.00	$0.00	$0.00
	STATE-KS	$18,003.10	$1,096.90	$0.00	$0.00	$0.00
	STATE-KS (AC)	$19,413.20	$1,918.00	$750.00	$750.00	$0.00
	STP-KS	$0.00	$911.40	$0.00	$2,000.00	$168.00
	STPM-KS	$14,079.62	$14,447.00	$13,953.00	$13,623.04	$13,623.04
	TA-KS	$1,206.00	$2,050.00	$652.00	$1,090.83	$1,090.83
Missouri	BRO-MO	$1,224.89	$1,224.89	$1,224.89	$1,224.89	$1,224.89
	BRO-MO CARRYOVER	$10,218.04	$0.00	$0.00	$0.00	$0.00
	BUILD-MO	$0.00	$25,000.00	$0.00	$0.00	$0.00
	CMAQ-MO	$3,037.80	$1,632.07	$1,744.57	$2,943.07	$2,943.07
	CREDIT	($32,994.80)	($38,504.00)	($10,625.40)	$0.00	$0.00
	HSIP-MO	$10,381.30	$14,874.90	$3,027.90	$0.00	$0.00
	LOCAL	$271,984.72	$278,784.34	$285,753.95	$282,897.79	$300,220.24
	NHFP-MO	$725.00	$7,464.00	$0.00	$0.00	$0.00
	NHPP-MO	$81,986.00	$65,173.30	$84,548.60	$2,182.00	$0.00
	STATE-KS	$1,935.00	$0.00	$0.00	$0.00	$0.00
	STATE-MO	$34,983.10	$32,702.60	$20,075.70	$243.20	$0.00
	STATE-MO (AC)	$31,497.20	$41,505.20	$10,579.80	$0.00	$0.00
	STPM-MO	$27,636.00	$18,200.00	$19,425.00	$20,518.32	$20,518.32
	STP-MO	$25,983.58	$41,462.60	$7,661.40	$0.00	$0.00
	TA-MO	$6,852.21	$2,078.57	$1,228.57	$1,623.63	$1,623.63

Table 11: Estimated revenues by year and funding source ($1,000s)						
STATE	SOURCE	2020	2021	2022	2023	2024
Regional	CMAQ-KS	$393.75	$411.00	$411.00	$0.00	$0.00
	CMAQ-MO	$787.50	$411.00	$411.00	$0.00	$0.00
	LOCAL	$901.56	$974.25	$743.00	$0.00	$0.00
	STPM-KS	$210.00	$780.00	$180.00	$0.00	$0.00
	STPM-MO	$490.00	$745.00	$420.00	$0.00	$0.00
Transit	5307	$21,416.64	$22,059.14	$22,720.92	$23,402.54	$24,104.62
	5309	$6,500.00	$179,600.00	$0.00	$0.00	$0.00
	5310	$1,328.61	$1,328.61	$1,328.61	$1,328.61	$1,328.61
	5311	$122.46	$126.13	$129.92	$133.82	$137.83
	5337	$1,170.00	$1,205.10	$1,241.25	$1,278.50	$1,316.85
	5339	$1,996.57	$2,056.47	$2,118.16	$2,181.71	$2,247.16
	CMAQ-KS	$288.00	$805.78	$1,295.00	$0.00	$0.00
	CMAQ-MO	$0.00	$900.00	$787.50	$0.00	$0.00
	LOCAL	$112,786.59	$116,170.19	$285,161.58	$122,328.98	$123,579.11
	STATE-KS	$25.84	$26.62	$27.41	$0.00	$0.00
	STPM-KS	$0.00	$132.83	$0.00	$0.00	$0.00
	STPM-MO	$0.00	$1,175.00	$0.00	$0.00	$0.00
Kansas subtotal		$331,701.29	$289,525.00	$281,759.74	$292,292.51	$298,388.42
Missouri subtotal		$475,450.04	$491,598.47	$424,644.98	$311,632.91	$326,530.15
Regional subtotal		$2,782.81	$3,321.25	$2,165.00	$0.00	$0.00
Transit		$145,634.71	$325,585.87	$314,810.35	$150,654.16	$152,714.18
Subtotal by Year		$955,568.85	$1,110,030.60	$1,023,380.07	$754,579.58	$777,632.76
Total: $4,621,191.85						

Table 12: Estimated Expenditures by year and funding source ($1,000s)						
STATE	**SOURCE**	**2020**	**2021**	**2022**	**2023**	**2024**
Kansas	BUILD-KS	$11,129.30	$0.00	$0.00	$0.00	$0.00
	CMAQ-KS	$2,134.00	$822.00	$1,200.00	$0.00	$0.00
	DEMO-KS	$0.00	$245.00	$0.00	$0.00	$0.00
	HIP-KS	$2,342.88	$0.00	$0.00	$0.00	$0.00
	HSIP-KS	$1,831.60	$3,800.30	$750.00	$750.00	$750.00
	LOCAL	$39,261.95	$36,964.31	$33,478.47	$0.00	$0.00
	LOCAL (AC)	$0.00	$1,953.00	$0.00	$0.00	$0.00
	NHPP-KS	$6,857.00	$0.00	$0.00	$0.00	$0.00
	OTHER	$1,500.00	$0.00	$0.00	$0.00	$0.00
	STATE-KS	$18,003.10	$1,096.90	$0.00	$0.00	$0.00
	STATE-KS (AC)	$19,413.20	$1,918.00	$0.00	$0.00	$0.00
	STPM-KS	$14,079.62	$14,447.00	$12,000.00	$0.00	$0.00
	TA-KS	$876.00	$2,050.00	$652.00	$0.00	$0.00
Missouri	BRO-MO	$2,157.00	$0.00	$0.00	$0.00	$0.00
	BUILD-MO	$0.00	$25,000.00	$0.00	$0.00	$0.00
	CMAQ-MO	$2,716.44	$1,528.00	$1,612.00	$0.00	$0.00
	HSIP-MO	$10,381.80	$14,829.90	$3,027.00	$0.00	$0.00
	LOCAL	$65,219.17	$39,991.92	$21,376.62	$0.00	$0.00
	NHFP-MO	$725.00	$7,464.00	$0.00	$0.00	$0.00
	NHPP-MO	$73,218.00	$66,459.30	$81,531.60	$2,182.80	$0.00
	STATE-KS	$1,935.00	$0.00	$0.00	$0.00	$0.00
	STATE-MO	$34,983.10	$32,702.60	$20,075.70	$243.20	$0.00
	STATE-MO (AC)	$31,497.20	$41,505.20	$10,579.80	$0.00	$0.00
	STPM-MO	$27,636.00	$18,200.00	$19,425.00	$10,000.00	$10,000.00
	STP-MO	$2,210.38	$1,046.00	$53.00	$0.00	$0.00
	TA-MO	$6,852.21	$2,078.57	$1,228.57	$0.00	$0.00

Table 12: Estimated Expenditures by year and funding source ($1,000s)						
STATE	SOURCE	2020	2021	2022	2023	2024
Regional	CMAQ-KS	$393.75	$411.00	$411.00	$0.00	$0.00
	CMAQ-MO	$787.50	$411.00	$411.00	$0.00	$0.00
	LOCAL	$901.56	$974.25	$743.00	$0.00	$0.00
	STPM-KS	$210.00	$780.00	$180.00	$0.00	$0.00
	STPM-MO	$490.00	$745.00	$420.00	$0.00	$0.00
Transit	5307	$21,416.64	$22,059.14	$22,720.92	$23,402.54	$24,104.62
	5309	$6,500.00	$179,600.00	$0.00	$0.00	$0.00
	5311	$122.46	$126.13	$129.92	$133.82	$137.83
	5337	$1,170.00	$1,205.10	$1,241.25	$1,278.49	$1,316.85
	5339	$1,996.57	$2,056.47	$2,118.16	$2,181.71	$2,247.16
	CMAQ-KS	$288.00	$805.78	$1,295.00	$0.00	$0.00
	CMAQ-MO	$0.00	$900.00	$787.50	$0.00	$0.00
	LOCAL	$107,526.92	$109,099.45	$275,733.73	$113,421.78	$117,899.40
	STATE-KS	$25.84	$26.62	$27.41	$28.23	$29.08
	STPM-KS	$0.00	$132.83	$0.00	$0.00	$0.00
	STPM-MO	$0.00	$1,175.00	$0.00	$0.00	$0.00
Kansas subtotal		$117,428.65	$63,296.51	$48,080.47	$750.00	$750.00
Missouri subtotal		$259,531.30	$250,805.49	$158,909.29	$12,426.00	$10,000.00
Regional subtotal		$2,782.81	$3,321.25	$2,165.00	$0.00	$0.00
Transit		$139,046.43	$317,186.52	$304,053.89	$140,446.57	$145,734.94
Subtotal by Year		$518,789.19	$634,609.77	$513,208.65	$153,622.57	$156,484.94
Total: $1,976,715.12						

System Operations and Maintenance

As stated in 23 CFR 450.324(h), for purposes of transportation operations and maintenance, the financial plan must contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53). The non-standard

ways that local jurisdictions and state departments of transportation report current system condition information and O&M costs creates difficulties in establishing an appropriate regional O&M cost.

To overcome this, MARC has taken a conservative approach to developing O&M estimates for *Transportation Outlook 2040* and based the estimates on inputs from the state departments of transportation. Kansas and Missouri have taken different approaches to account for O&M and cost factors. To establish regional O&M costs, MARC reviewed information from KDOT's Statewide Improvement Program (STIP) and T-Works, and MoDOT's FY 2020 budget request for operations and maintenance. The KDOT STIP assumes a statewide O&M cost of $6,200 per lane mile and T-Works assumes $2,800 per lane mile for the Kansas City urban area. MoDOT estimates O&M costs at $5,317 per lane mile for both urban and non-urban roadways. The base year O&M costs were factored using a 3% inflation rate over the life of the TIP.

Since KDOT only maintains 30 percent of the Federal Aid System in Kansas, the remaining system is the responsibility of local jurisdictions. KDOT's statewide per mile O&M costs are generally higher in non-urban areas than in urban areas by virtue of frequency, nature and level of detail for required O&M work. MARC assumes that local jurisdictions may not expend O&M activities at the same frequency or level of detail as KDOT. Therefore, local jurisdictions will need to expend, at a minimum, KDOT's statewide cost to keep pace with O&M requirements.

Operations and maintenance costs include salaries, fringe benefits, materials and equipment needed to deliver roadway and bridge maintenance programs. Basic maintenance activities include minor surface treatments, such as sealing, small concrete repairs and pothole patching, mowing right of way, snow removal, sign replacement, striping, guardrail repairs, and traffic signals repairs. These maintenance activities require employees, vehicles and other machinery, and facilities to house equipment and materials such as salt, asphalt and fuel.

The following table summarizes the system-level estimates of highway operations and maintenance expenditures.

Table 13: Federal-Aid Highway Operations and Maintenance

	KDOT	Kansas Local	MoDOT/ Missouri Local	Total
Cost per lane mile	$2,800	$6,200	$5,317	
Lane miles	1,958	4,664	8,094	**14,716**
2020	$5,482	$28,917	$43,036	**$77,435**
2021	$5,647	$29,784	$44,327	**$79,758**
2022	$5,816	$30,678	$45,657	**$82,151**
2023	$5,991	$31,598	$47,026	**$84,615**
2024	$6,170	$32,546	$48,437	**$87,154**
Total	**$29,107**	**$153,523**	**$228,483**	**$411,113**

As with highways, the region must account for transit operations and maintenance costs as well. Since the majority of federal transit funds are allocated directly to the region, transit maintenance and operations financial forecasts were not included in the states' projections. To develop an estimate of transit system operation and maintenance costs, MARC used estimates derived from the transit maintenance and operations information contained in *Transportation Outlook 2040.* The transit projects included in the 2020–2024 TIP directly address the current operations and maintenance of the transit system, previously presented revenue and expenditure summary tables account for these costs.

Transit operations and maintenance costs are summarized in Table 14.

Many projects in the 2020–2024 TIP address the operation and maintenance of the system. However, a number of operations and maintenance activities that will take place in the region are not appropriate to include as individual projects in the TIP — because either they are not federally funded or they do not rise to the level of a regionally significant project.

Table 14: Transit Operations & Maintenance

Region	2020	2021	2022	2023	2024	Total
	105,012	$108,162	$111,407	$114,749	$118,192	**$557,522**

Table 15: Estimated Revenues vs. Expenditures ($1,000s)

	2020	2021	2022	2023	2024
Kansas revenue	$331,701.29	$289,525.00	$281,759.74	$292,292.51	$298,388.42
Kansas O&M expenditure	$34,399.20	$35,431.18	$36,494.11	$37,588.93	$38,716.60
Kansas project expenditure	$117,428.65	$63,296.51	$48,080.47	$750.00	$750.00
Difference	**$179,873.44**	**$190,797.32**	**$197,185.16**	**$253,953.57**	**$258,921.82**
Missouri revenue	$475,450.04	$491,598.47	$424,644.98	$311,632.91	$326,530.15
Missouri O&M expenditure	$43,035.80	$44,326.87	$45,656.68	$47,026.38	$48,437.17
Missouri project expenditure	$259,531.30	$250,805.49	$158,909.29	$12,426.00	$10,000.00
Difference	**$172,882.94**	**$196,466.11**	**$220,079.01**	**$252,180.53**	**$268,092.98**
Transit revenue	$145,634.71	$325,585.87	$314,810.35	$150,654.16	$152,714.18
Transit O&M expenditure	$105,012.00	$108,162.00	$111,407.00	$114,749.00	$118,192.00
Transit O&M TIP project expenditure	$108,590.87	$127,810.77	$117,043.22	$120,097.93	$124,897.84
Remaining transit O&M	$0.00	$0.00	$0.00	$0.00	$0.00
Transit project expenditure (Non O&M)	$30,455.56	$189,375.75	$187,010.67	$20,348.64	$20,837.10
Difference	**$6,588.28**	**$8,399.35**	**$10,756.46**	**$10,207.59**	**$6,979.24**
Regional revenue	$2,782.81	$3,321.25	$2,165.00	$0.00	$0.00
Regional expenditure	$2,782.81	$3,321.25	$2,165.00	$0.00	$0.00
Difference	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total revenue	$955,568.85	$1,110,030.60	$1,023,380.07	$754,579.58	$777,632.76
Total expenditure	$596,224.19	$714,367.81	$595,359.44	$238,237.88	$243,638.71
Difference	**$359,344.66**	**$395,662.78**	**$428,020.63**	**$516,341.69**	**$533,994.05**

5. Measuring Progress

Transportation Outlook 2040

Transportation Outlook 2040 is the Metropolitan Transportation Plan (MTP) that guides the Kansas City region in management, operation and investment of approximately $33 billion for its multimodal transportation system over the next 25 years. Updated by the Mid-America Regional Council Board of Directors in 2015, the plan provides policy guidance for the investment of transportation resources in the region. This guidance is evident in the programming processes MARC uses to determine priorities for the portion of federal funding directly sub-allocated to the Kansas City region. For each sub-allocated funding program, MARC has developed an evaluation methodology to help determine how each potential project addresses the goals identified in the MTP.

Although the MTP does not necessarily provide the basis for investment decisions and priorities made outside of MARC, it does have a role in these external decisions. As required under federal transportation legislation, all regionally significant capacity or fixed guideway transit projects documented in the TIP must be also listed in the plan. The 2018–2022 TIP meets this requirement.

Since adopting Transportation Outlook 2040 in 2010, MARC has produced annual progress reports to actively track a number of performance measures related to the goals of that plan. These measures and the resulting trends help to quantify regional progress towards achieving the goals set forth in the plan, informing decisions, and guiding investment priorities for the regional transportation network. The progress reports are available for review at www.to2040.org/performance.aspx.

Work is currently underway to update Transportation Outlook 2040, scheduled for completion mid-year 2020.

Federal Performance Measures

Background

The Moving Ahead for Progress in the 21st Century Act (MAP-21) required State DOTs and Metropolitan Planning Organizations (MPO) to conduct performance-based planning and programming by tracking performance measures, setting data-driven targets for each measure, and selecting projects to help meet those targets. These requirements were continued and strengthened in the Fixing America's Surface Transportation (FAST) Act and help to ensure the most efficient investment of federal transportation funds through increased accountability and transparency and providing for better investment decisions that focus on measurable outcomes.

Since the passage of MAP-21, USDOT has worked through the federal rulemaking process to establish a series of performance measures and corresponding target setting requirements. Currently, the performance measures MARC is responsible for establishing are focused on:

- Transit State of Good Repair
- Safety
- Infrastructure Condition
- System Performance & Freight

As the proposed rules were issued, various stakeholders and MARC committees were engaged to review and develop comments. In many cases, final rules reflected substance of comments submitted by MARC. Once the states have set targets, metropolitan planning organizations (MPOs) like MARC must establish performance targets at the regional level within 180 days. MPOs have the option to (a) support the state targets, or (b) establish regional targets within 180 days.

MARC has elected to establish regional targets to better harmonize disparate trends and targets across the state border, creating a consistent target for the entire Kansas City region, regardless of jurisdictional boundaries.

For each of the performance measures defined though the MAP-21/FAST Act rulemaking process, MARC will be required to monitor progress towards achieving those targets. The targets established for the Kansas City metropolitan region will ultimately be integrated into the Metropolitan Transportation Plan (MTP), Transportation Improvement Program (TIP) and regional performance management process. In the TIP, MARC has programmed projects that move the region forwards towards achieving the established targets.

Transit State of Good Repair

The Transit State of Good Repair (i.e. infrastructure condition) is the first performance area for which MARC established regional targets. The targets were initially adopted by the MARC Board of Directors on August 22, 2017, and are updated annually. To develop these targets, MARC worked cooperatively with the Kansas and Missouri Departments of Transportation, Kansas City Area Transportation Authority (KCATA) and the Kansas City Streetcar Authority. Together, these agencies determined regional targets for:

- Rolling stock buses
- Rail
- Equipment (non-revenue vehicles)
- Equipment (Other)
- Infrastructure (Rail)
- Facilities

Every year these targets are re-evaluated and if changed, adopted by the MARC Board. For more details on the targets established, you can review the annual performance measure report.

The Transportation Improvement Program documents the following transit investments. This subset of overall transit investments in the TIP directly address the categories identified through the target setting process and are examples of how the projects within the TIP are making progress towards established targets.

TIP Number	Project	Lead Agency	2020-2024 Investment
995001	Station Stops/Terminals/Facilities	KCATA	$4,688,000
995002	Revenue Rolling Stock Including Vanpool Program Expansion	KCATA	$52,516,000
995188	Regional Clean Vehicle Bus Purchase	KCATA	$6,775,000
956004	Fixed Route Line Haul Service	KCATA	$18,200,000
996066	Support Equipment & Facilities	KCATA	$40,663,000
996098	Station Stops/Terminals/Facilities	Johnson County Transit	$1,100,000

Safety

The process to develop safety targets was led by the Destination Safe Transportation Safety Data Task Team, which includes representatives from MARC, KDOT, MoDOT, local jurisdictions, and traffic safety subject matter experts. In developing regional targets, the Task Team considered statewide targets established in the Kansas and Missouri HSIPs, historical traffic trends, the anticipated effects of state and regional plans and programs including SHSPs, HSPs, the MTP and TIP and emerging issues such as technology. The targets are consistent with safety targets in the adopted 2018- 2022 Regional Safety Blueprint. The federal safety performance measures are five-year rolling averages and are established for:

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled (VMT)
- Number of serious injuries
- Rate of serious injuries per 100 million VMT
- Number of nonmotorized fatalities and serious injuries (combined)

The MARC Board of Directors initially approved the regional safety targets on January 23, 2018 and continue to update them annually, if changed. More details on these targets can be found within the annual performance measure report.

Examples of projects addressing the above crash types and established performance measures in the TIP include:

TIP Number	Project	Lead Agency	2020-2024 Investment
280156	Wyandotte & Leavenworth Co: US-73 Parallel Restricted (reduced conflict) Crossing U-Turn (RCUT)	KDOT	$3,851,300
356106	Comprehensive Safe Routes to School Program in Johnson County	Johnson County	$250,000
590238	M-92 : SAFETY IMPROVEMENTS ON M-92 FROM COMMERCIAL AVENUE TO RTE. 69	MoDOT	$7,063,000
690350	I-29: Adding Wrong Way, Do Not Enter and One Way Signing at various ramp locations along I-29.	MoDOT	$397,000
739103	Foxridge Drive - SRTS	Raymore	$170,000
990311	US 169: Intersection safety improvements at 188th Street.	MoDOT	$1,342,000

Infrastructure Condition

Infrastructure condition (i.e. pavement and bridge conditions) is solely focused on the National Highway System (NHS). The targets were initially adopted by the MARC Board of Directors on August 22, 2017 and are updated every 2 years. To develop these targets, MARC worked cooperatively with the Kansas and Missouri Departments of Transportation, and regional stakeholders. Together, these agencies determined regional targets for:

- Percent of NHS bridges by deck area in good condition
- Percent of NHS bridges by deck area in poor condition
- Percent of interstate pavement in good condition
- Percent of interstate pavement in poor condition
- Percent of non-interstate NHS pavements in good condition
- Percent of non-interstate NHS pavements in poor condition

Every two years these are re-evaluated and if changed, adopted by the MARC Board. More details on these targets can be found within the annual performance measure report.

The following table lists examples of the types of projects within the TIP that are making progress towards achieving the established targets.

TIP Number	Project	Lead Agency	2020-2024 Investment
380176	US-56; Resurfacing beginning at Roe Avenue thence East to State Line Road	KDOT	$494,800
380144	I-35: Replace bridge #007 (199th St. over I-35)	KDOT	$7,525,000
590259	CST 53rd Ter: Bridge replacement over I-435 Project involves bridge A1666.	MoDOT	$2,541,000
790123	Peculiar Dr: Bridge replacement over East Creek	MoDOT	$1,279,000
415212	Waukomis Complete Streets Upgrade/Reconstruction Phase 1	Platte County/Kansas City, MO	$7,500,000
611159	Lee's Summit Road Reconstruction -Anderson to Lakewood Boulevard	Kansas City, MO	$6,500,000

System Performance & Freight

System performance and freight, like pavement and bridge, focuses on the National Highway System (NHS). The targets were initially adopted by the MARC Board of Directors on August 22, 2017 and are updated every 2 years. To develop these targets, MARC worked cooperatively with the Kansas and Missouri Departments of Transportation, and regional stakeholders. Together, these agencies determined regional targets for:

- Percent of reliable person-miles traveled on the interstate
- Percent of reliable person-miles traveled on the non-interstate NHS
- Truck travel time reliability index

Every two years these are re-evaluated and if changed adopted by the MARC Board. More details on these targets can be found within the annual performance measure report.

The following table lists examples of the types of projects within the TIP that are making progress towards achieving the established targets.

TIP Number	Project	Lead Agency	2020-2024 Investment
345128	87th Street and I-435 Interchange Improvements	Lenexa	$6,373,000
349247	I-35 and 119th Street Interchange	Olathe	$25,000,000
510085	Chouteau/I-35 Interchange Improvement	MoDOT/Kansas City, MO	$2,583,870
627019	I-49 Frontage Road 2-Way Conversion - Phase 1	MoDOT/Grandview	$5,807,350
760003	Route C - Intersection Improvements	Peculiar	$1,700,350
970105	Operation Green Light Traffic Signal Advancements MO	MARC	$793,380

6. Environmental Justice Analysis

The U.S. Department of Transportation (DOT) defines environmental justice as *the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin or educational level with respect to the development, implementation and enforcement of environmental laws, regulations and policies.*

Environmental justice plays an important role in transportation planning and visioning. Transportation projects have long-lasting physical impacts on communities, and it is critical to incorporate fairness and equity into the development of transportation policies and funding decisions. No group of people — by race, ethnicity or socioeconomic status — should receive unfair treatment or bear a disproportionate share of negative environmental consequences as a result of decisions made at the federal, state, regional or local levels.

Ensuring nondiscrimination

In 1994, Presidential Executive Order 12898 mandated that federal agencies incorporate environmental justice analyses in their missions by analyzing and addressing the effects of all programs, policies and activities. Drawing from the framework established by Title VI of the Civil Rights Act of 1964 and the National Environmental Policy Act (NEPA) of 1969, the U.S. Department of Transportation (USDOT) established three principles to ensure nondiscrimination in federally funded activities:

- Avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects — including social and economic effects — on minority populations and low-income populations.
- Ensure full and fair participation by all potentially affected communities in transportation decision-making processes.
- Prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.

Disproportionately High and Adverse Effects

Transportation projects have short- and long-term effects on communities. These impacts can be positive or beneficial, such as improving travel options, creating safety outcomes and providing congestion relief or travel time reduction. Projects may also have negative effects, burdens or adverse effects. Adverse effects[1] encompass the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects that may include, but are not limited to:

- Bodily impairment, infirmity, illness or death.
- Air, noise, water pollution and soil contamination.
- Destruction or disruption of man-made or natural resources.
- Destruction or diminution of aesthetic values.
- Destruction or disruption of community cohesion or a community's economic vitality.
- Destruction or disruption of the availability of public and private facilities and services.
- Vibration.
- Adverse employment effects.
- Displacement of persons, businesses, farms or nonprofit organizations.
- Increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community.
- The denial of, reduction in or significant delay in the receipt of benefits of Federal Highway

Administration (FHWA)/Department of Transportation (DOT) programs, policies or activities.

Disproportionately high and adverse effects refer to effects that:

1. Are predominately borne by a minority population and/or low-income population.
2. Will be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Scope of analysis

MARC strives to incorporate fairness and equity into its transportation planning and programming processes. The environmental justice analysis considers distribution of proposed investments to prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.

Project sponsors conduct separate project-level environmental justice analyses for federally funded transportation projects in conjunction with other reviews under the National Environmental Protection Act (NEPA). Due to the regional nature of the TIP, a system-level analysis for distribution of transportation-related impacts at the regional scale appears most appropriate.

MARC identifies minority and low-income populations and evaluates their proximity to federal investment at a regional scale. This includes an analysis of financial assistance for all major surface transportation projects planned to receive federal funding in the region over the life of the TIP. This is done by calculating federal spending per capita and spatially analyzing the distribution of funds in relation to identified environmental and non-environmental justice areas. Safety is then considered by assessing project location and nonmotorized crashes. Lastly, MARC examines impacts on environmental justice areas using its travel-demand model to forecast demographic, trip and travel-time statistics.

While not covered by Executive Order 12898, MARC also reviews transportation investments in relation to populations with disabilities, older adults, veterans, households with no available vehicle and people who use public transportation to get to work. While not inherently disadvantaged, these populations are included in the analysis because they may face mobility challenges.

Note: Evaluation of specific impacts, adverse effects and benefits at the project level, as well as determining project-level measures to avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects — including social and economic effects — is conducted by project sponsors during the project development stage in the environmental review process as required by NEPA.

Public Participation

Public participation is central to environmental justice. MARC incorporates public engagement into its programming processes for transportation funding by including public participation scoring in its project evaluation criteria. This encourages engagement from transportation disadvantaged populations during the project development phase.

Methodology

Data sources

Demographic data from the U.S. Census Bureau's 2013-2017 American Community Survey (ACS) five-year estimates were used to conduct this environmental justice analysis. The data includes census tracts — a statistical subdivision of a county designated for the purpose of presenting data —within the eight-county, MPO planning boundary. Data was linked to Geographic Information System (GIS) census tract layers for the spatial analysis. Tracts typically average 4,000 people and boundaries

usually follow visible features; however, they also follow governmental unit boundaries.

Identifying populations

The first step of the environmental justice analysis is to identify minority and low-income populations. These are defined as:

- **Minority population —** People who are black/African-American, Hispanic or Latino, Asian American, American Indian and Alaskan Native, and Native Hawaiian and other Pacific Islander.
- **Low-income population —** People in households with incomes at or below the U.S. Census Bureau poverty thresholds.

  Information on how the U.S. Census Bureau calculates poverty thresholds[2] is available on the U.S. Census Bureau website.

Transportation-disadvantaged populations — those who face mobility challenges in the region — were also analyzed. This includes:

- **Persons with a disability —** Individuals with a long-lasting physical, mental or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.
- **Older adult populations —** Individuals aged 65 and over.
- **Veterans —** Individuals 18 years old or over who have served (even for a short time), but are not now serving, on active duty in the U.S. Army, Navy, Air Force, Marine Corps, or the Coast Guard, or who served in the U.S. Merchant Marine during World War II. People who served in the National Guard or military reserves are classified as veterans only if they were ever called or ordered to active duty, not counting the four to six months for initial training or yearly training camps. For many veterans of all ages, transportation to work, school, medical appointments, shopping, and social events or other activities has become a hardship because of a disability, illness or financial constraints.
- **Households with no available vehicle —** Households where no cars, vans, pickup or panel trucks of one-ton capacity or less are owned and available for the use of household members.
- **People who rely on public transportation to get to work —** Individuals 16 years of age or older who depend on public transportation (excluding taxicabs) as their mode of travel or conveyance to get from home to work. Public transportation includes bus, trolley bus, streetcar/trolley car, subway, elevated rail, railroad or ferryboat.

Table 16: Environmental Justice populations in the eight-county Kansas City region		
Minority populations	**Total**	**Percentage**
Black or African American	**258,372**	**13.1%**
American Indian and Alaska Native	**8,073**	**0.4%**
Asian	**56,753**	**2.9%**
Native Hawaiian and Pacific Islander	**2,861**	**0.1%**
Other race	**53,530**	**2.7%**
Two or more races	**62,917**	**3.2%**
Hispanic or Latino*	**181,572**	**9.2%**
White Hispanic or Latino	**114,021**	**5.8%**
Non-White Hispanic or Latino	**67,551**	**3.4%**
Minority population	**556,527**	**28.1%**
Total population	**1,977,768**	**100%**
Households	**Total**	**Percentage**
Households below poverty	**85,173**	**11.1%**
Households above poverty	**685,170**	**88.9%**
Total households	**770,343**	**100%**

*Note: Hispanic or Latino is an ethnicity, not a race.

**Non-white Hispanic or Latino populations are not added to the minority population, since they are already accounted for in the racial populations listed in this table.

Black or African-American — A person having origins in any of the black racial groups of Africa. It includes people who indicate their race as black, African-American or report entries such as African-American, Kenyan, Nigerian or Haitian.

American Indian and Alaska Native — A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicate their race as American Indian or Alaska Native or report entries such as Navajo, Blackfeet, Inupiat, Yup'ik, or Central American Indian groups or South American Indian groups.

Asian — A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes people who indicate their race as Asian Indian, Chinese, Filipino, Korean, Japanese, Vietnamese, and other Asian or provide other detailed Asian responses.

Native Hawaiian and Pacific Islander — A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific islands. It includes people who indicate their race as Native Hawaiian, Guamanian or Chamorro, Samoan, and other Pacific Islander or provide other detailed Pacific Islander responses.

Other race — A person not included in the white, black or African American, Asian, Native Hawaiian or other Pacific Islander, and Hispanic or Latino ethnic origin or race categories. People who report themselves as multiracial, mixed/biracial, or interracial in response to the ethnic origin or race question are included in this category.

Two or more races — A person who identifies with a combination of two or more of the following race categories.

1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian
5. Native Hawaiian or other Pacific Islander
6. Some other race

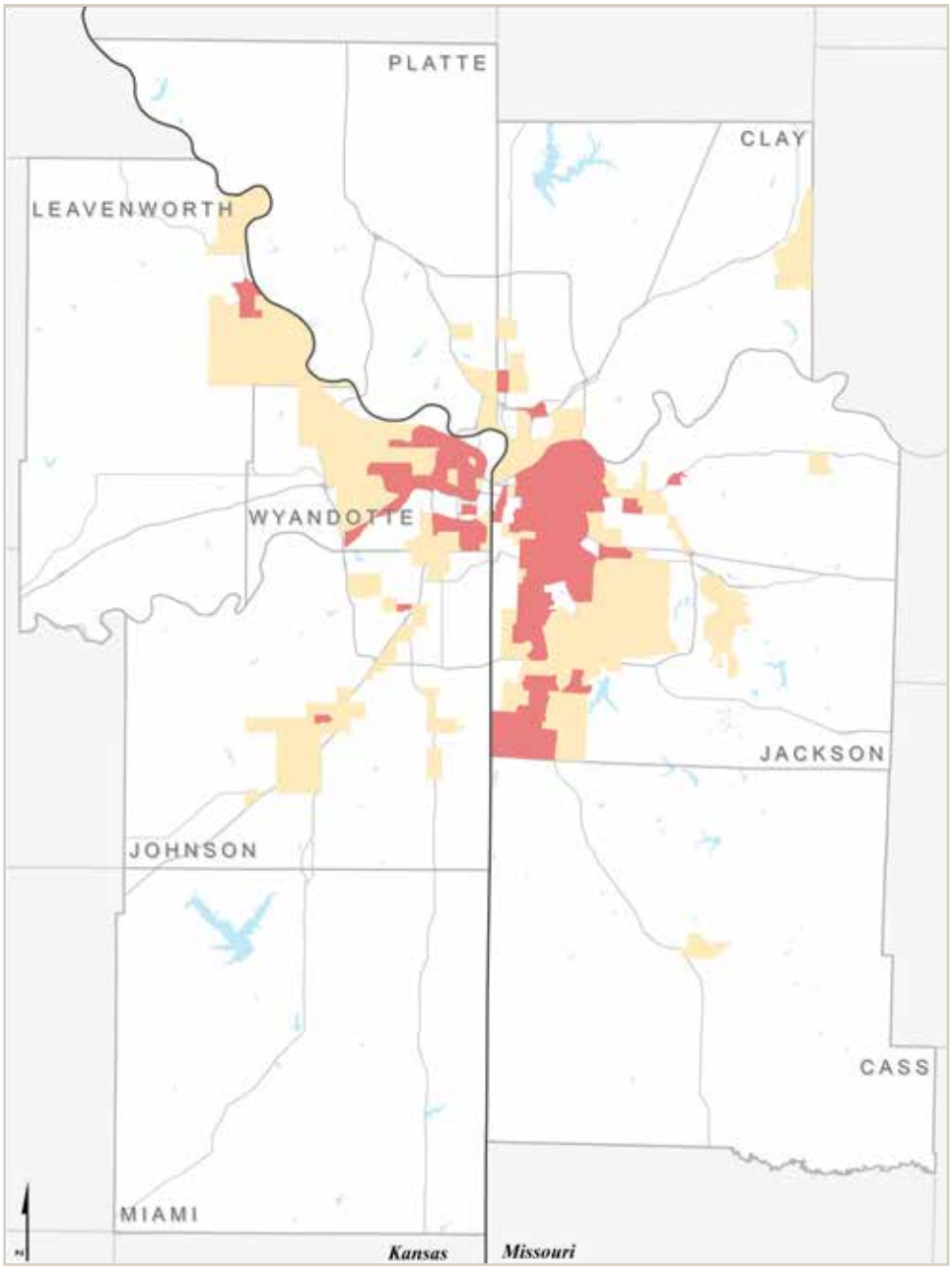
Defining Environmental Justice Areas

Although any population within the community may be subject to disproportionately high and adverse effects from given transportation projects and investments, the identification of minority and low-income populations is useful in understanding the comparative effects throughout all of the affected populations. Benchmarks for both minority and low-income populations are established in accordance with Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) policy guidance on environmental justice. Environmental justice areas are census tracts in which:

1. The proportion of minority populations in the tract is greater than the minority proportion of the overall MPO area (28.1%).
2. More than 20 percent of households are in poverty.

Census tracts meeting one or both criteria are referred to throughout this document as environmental justice (EJ) areas or tracts. Census tracts that do not meet the criteria or fall outside of defined EJ area boundaries are referred to as non-environmental justice (non-EJ) areas or tracts. Identified EJ areas in the region account for approximately 391 square miles (10.2%) of the region's total 3,849 square miles.

Figure 9: EJ Areas in the Kansas City region



All maps were created using ArcGIS 10.6.1. Demographic data derived from ACS (2013-2017 five-year estimates).

Environmental Justice Populations

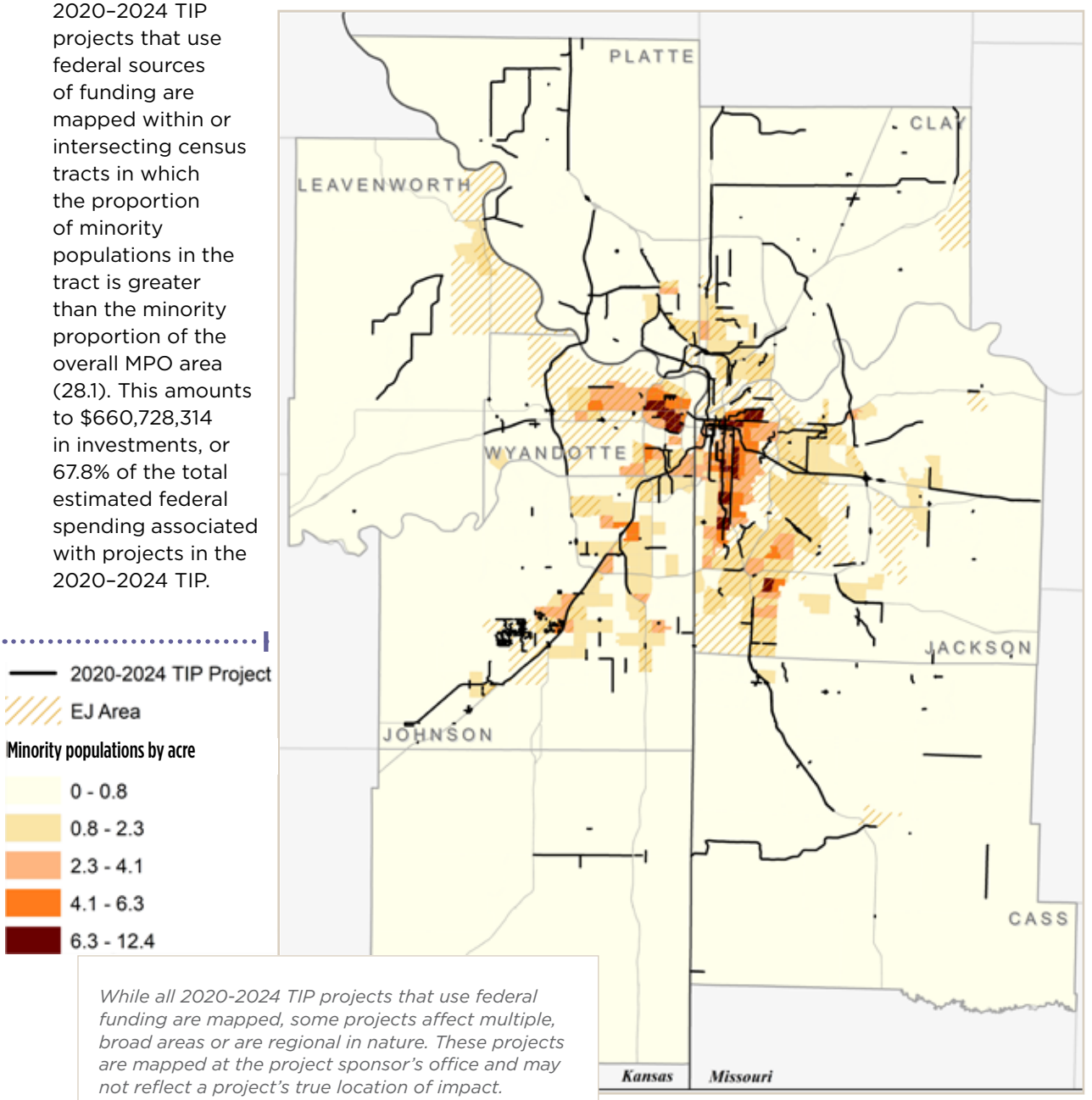
Transportation projects may affect populations in both EJ and non-EJ areas if they cross boundaries.

Minority populations

According to 2013-2017 ACS five-year estimates, 556,527 minority persons live in the region, or 28.1% of the total population. Spatial analysis by census tracts shows the densest minority concentrations in northwestern Jackson County, Missouri, and eastern Wyandotte County, Kansas, primarily within EJ tracts.

Approximately 35.5% of 2020–2024 TIP projects that use federal sources of funding are mapped within or intersecting census tracts in which the proportion of minority populations in the tract is greater than the minority proportion of the overall MPO area (28.1). This amounts to $660,728,314 in investments, or 67.8% of the total estimated federal spending associated with projects in the 2020–2024 TIP.

Figure 10: Minority Populations



While all 2020-2024 TIP projects that use federal funding are mapped, some projects affect multiple, broad areas or are regional in nature. These projects are mapped at the project sponsor's office and may not reflect a project's true location of impact.

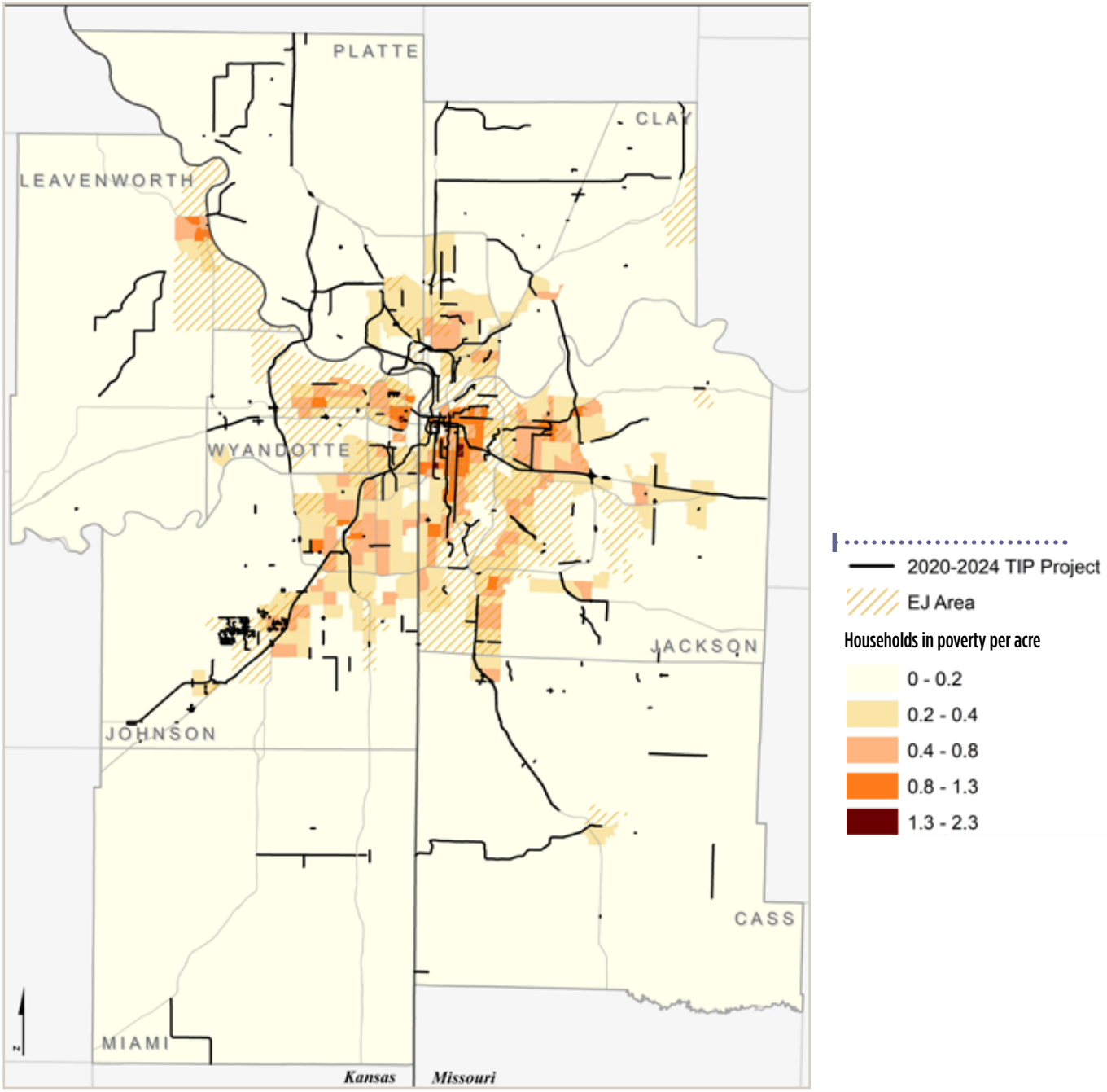
For example, KCATA's Share-a-Fare is mapped at the KCATA office and MoDOT's Motorist Assist project is mapped at the MoDOT office.

Low-income populations

According to 2013-2017 ACS five-year estimates, 85,173 households in the region have incomes at or below U.S. Census poverty thresholds. This is 11.1% of total households. Spatial analysis shows the densest low-income household concentrations in northwestern Jackson County, Missouri, and eastern Wyandotte County, Kansas, primarily within EJ tracts.

Approximately 22.1% of 2020–2024 TIP projects using federal sources of funding are mapped within or intersecting census tracts with more than 20% of households in poverty. This amounts to $414,681,586 in investments, or 43.1% of the total estimated federal spending associated with projects in the 2020–2024 TIP.

Figure 11: Low-income populations



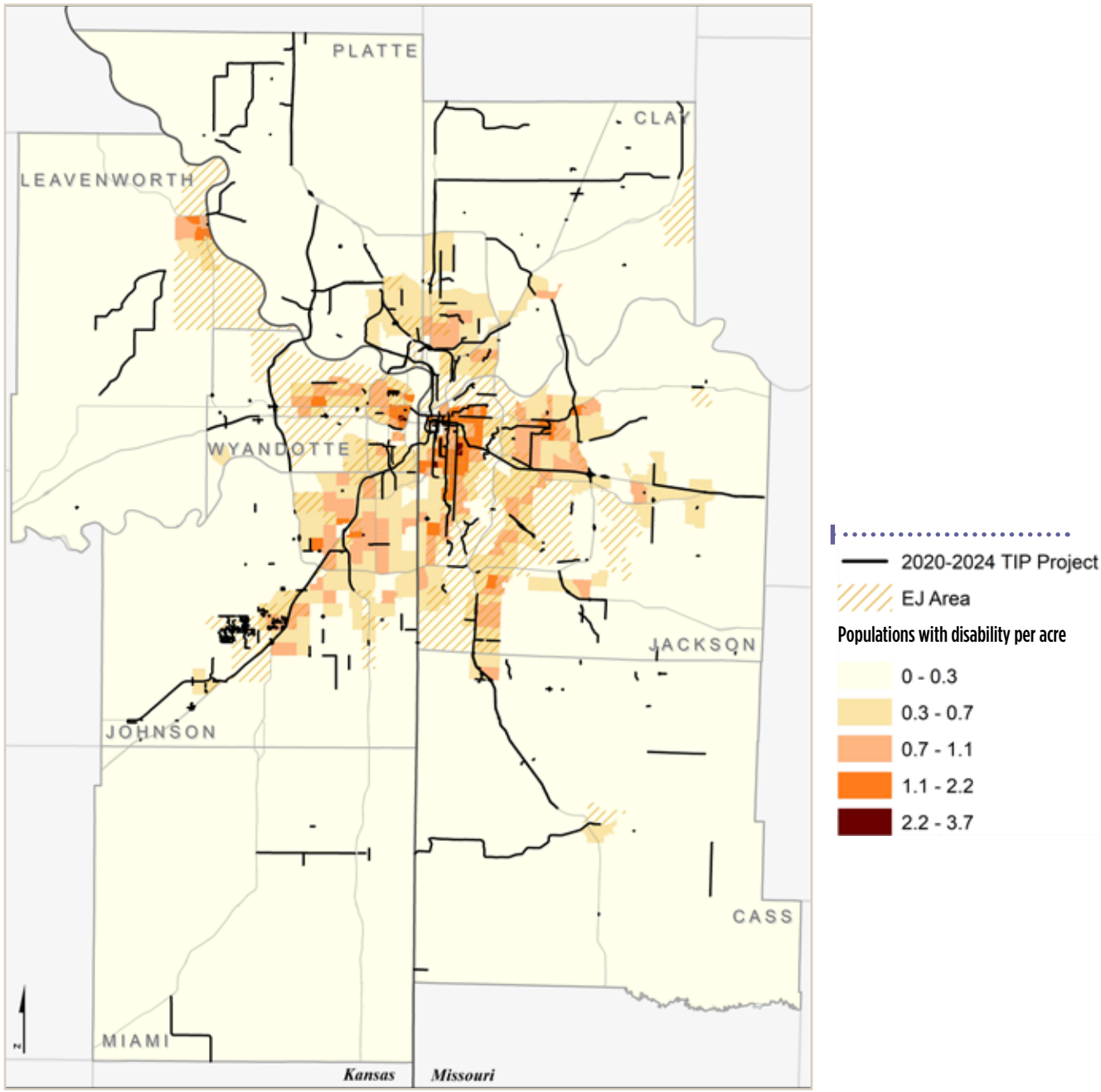
Additional Indicators of Potential Transportation Disadvantage

Although not covered under Executive Order 12898, several demographic characteristics may indicate mobility challenges. These populations may face transportation barriers that affect their travel to work, school, medical appointments, shopping, social events or other activities.

Persons with a disability

According to 2013-2017 ACS five-year estimates, 234,203 people with a disability live in the eight-county region, or 12% of the total civilian non-institutionalized population. Spatial analysis shows concentrations of persons with a disability, not only in EJ areas, but other areas of the region around the urban core and inner-ring suburbs within the I-435 loop. The most dense concentrations are in western Jackson, southern Platte and Clay counties in Missouri, and eastern Wyandotte, and northeastern Johnson counties in Kansas.

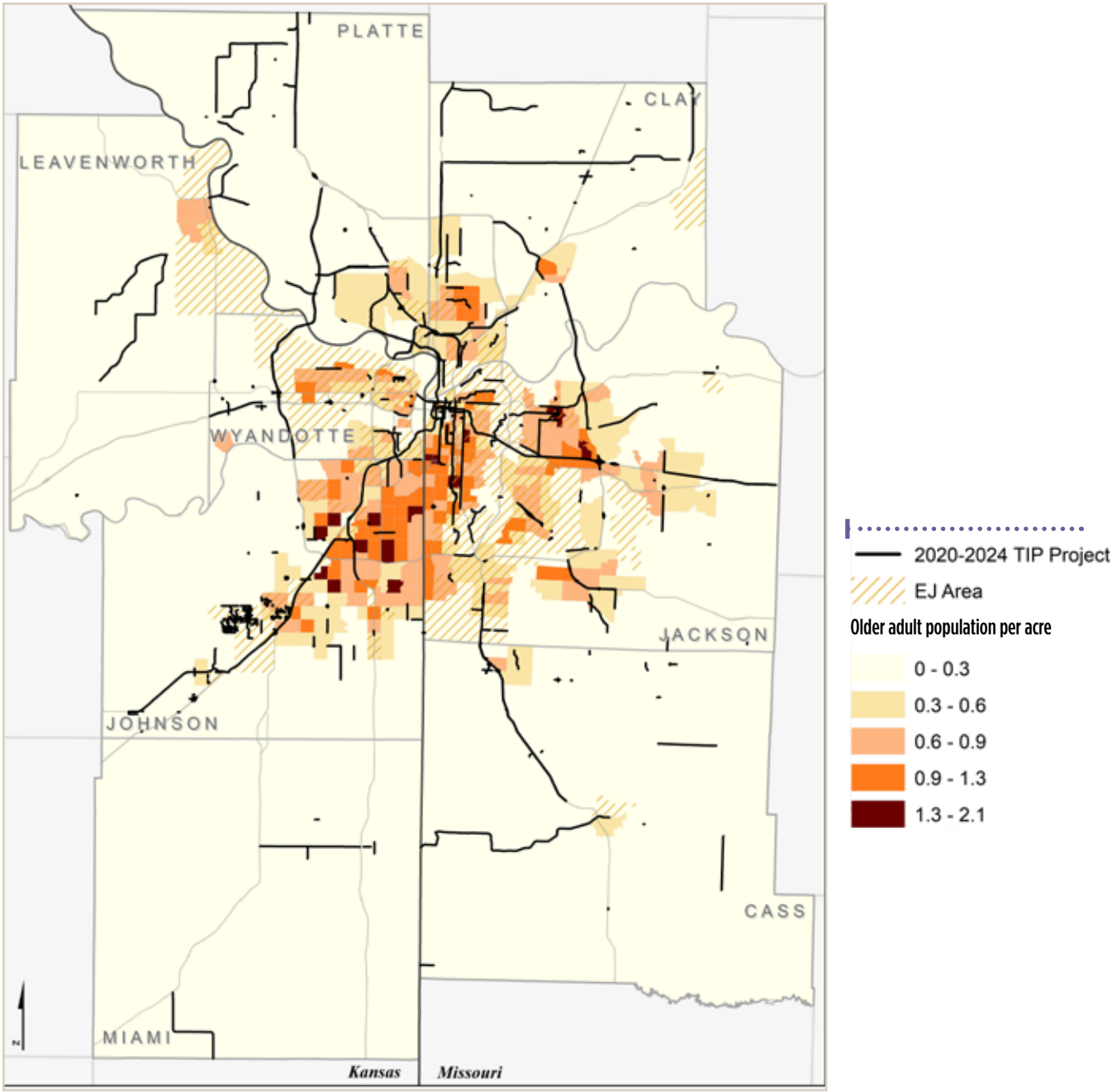
Figure 12: Persons with disabilities



Older adult populations

According to 2013-2017 ACS five-year estimates, 266,937 people 65 years of age and older live in the eight-county region, or 13.5% of the total population. Spatial analysis shows concentrations of older adult populations, not only in EJ areas, but other areas of the region around the urban core and inner-ring suburbs. Densest concentrations are in northeastern Johnson County, Kansas, and western Jackson County, Missouri.

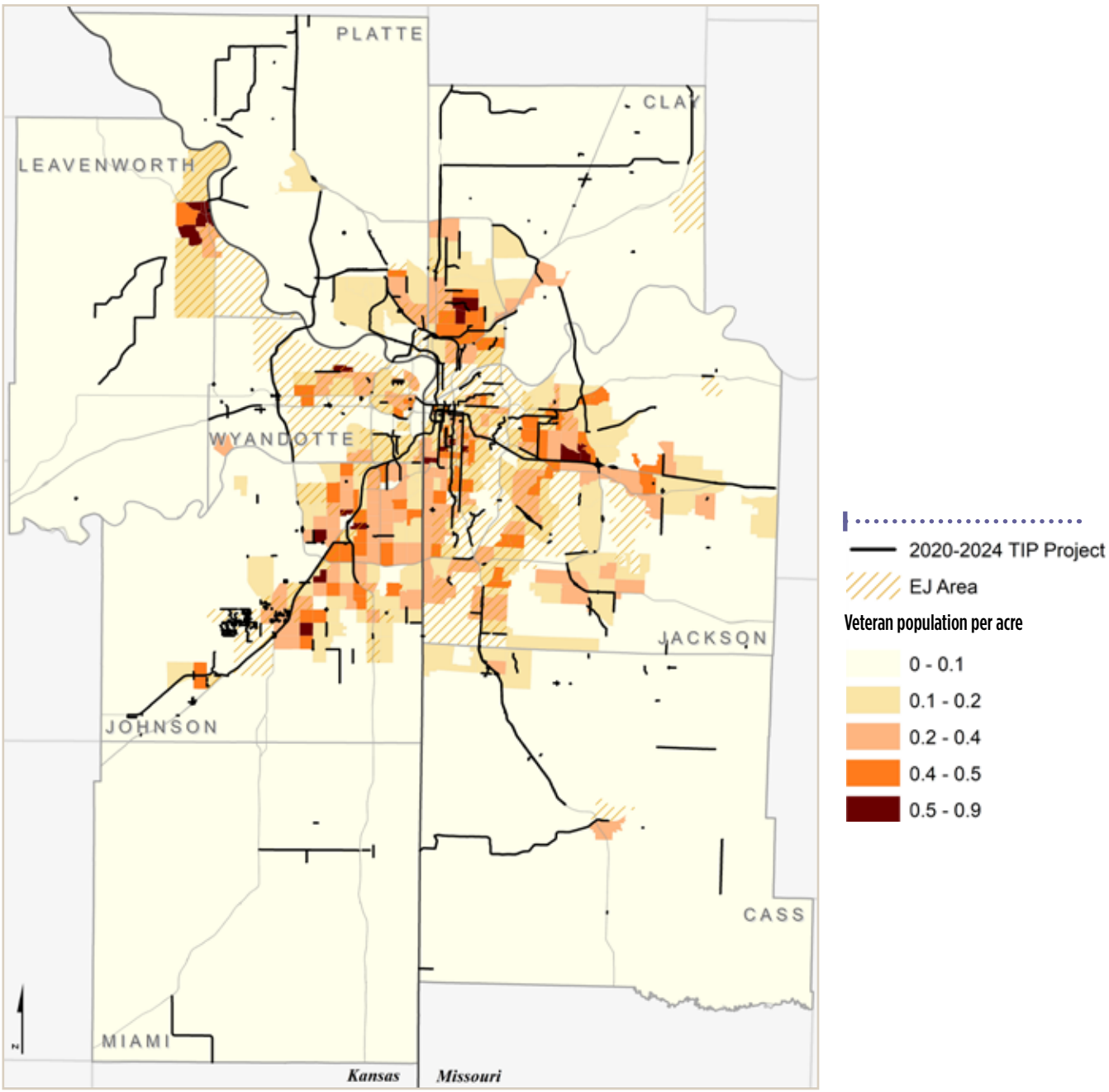
Figure 13: Older adult populations



Veterans

According to 2013-2017 ACS five-year estimates, 123,815 veterans live in the eight-county region, or 8.3% of the total population 18 years of age and older. Spatial analysis shows concentrations of veterans, not only in EJ areas, but other areas of the region around the urban core and inner-ring suburbs. Densest concentrations are in western Jackson, southern Platte and Clay counties in Missouri, and northeastern Johnson County, Kansas. The highest concentration of veterans is in Leavenworth, Kansas, which is adjacent to the U.S. Army Fort Leavenworth installation in Leavenworth County, Kansas.

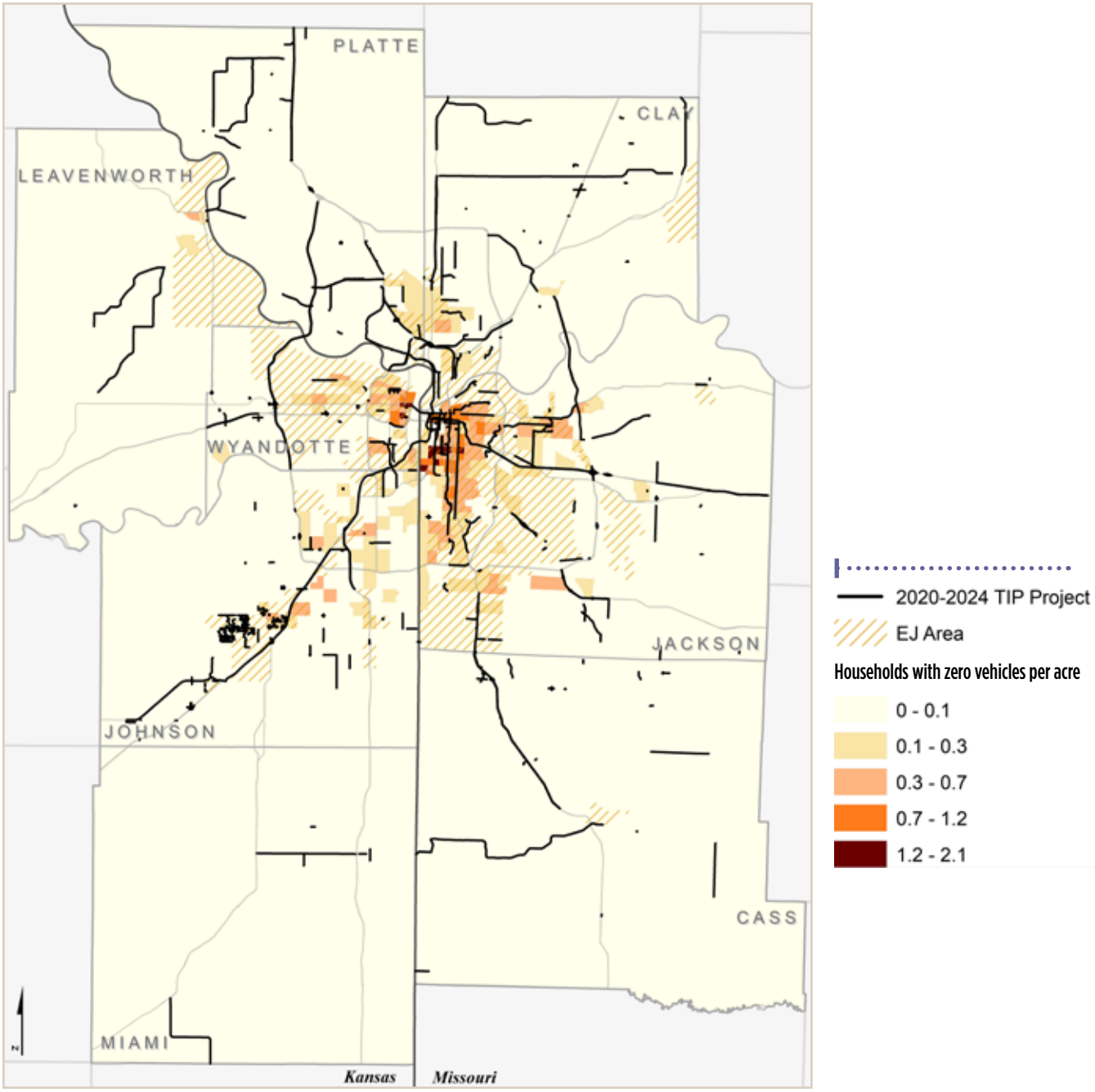
Figure 14: Veteran populations



Households with no vehicle

According to 2013-2017 ACS five-year estimates, the eight-county region includes 47,415 housing units with no vehicle, or 6% of the total housing units. Spatial analysis shows concentrations of households with no vehicle mainly in EJ areas. Densest concentrations are in northwestern Jackson County, Missouri.

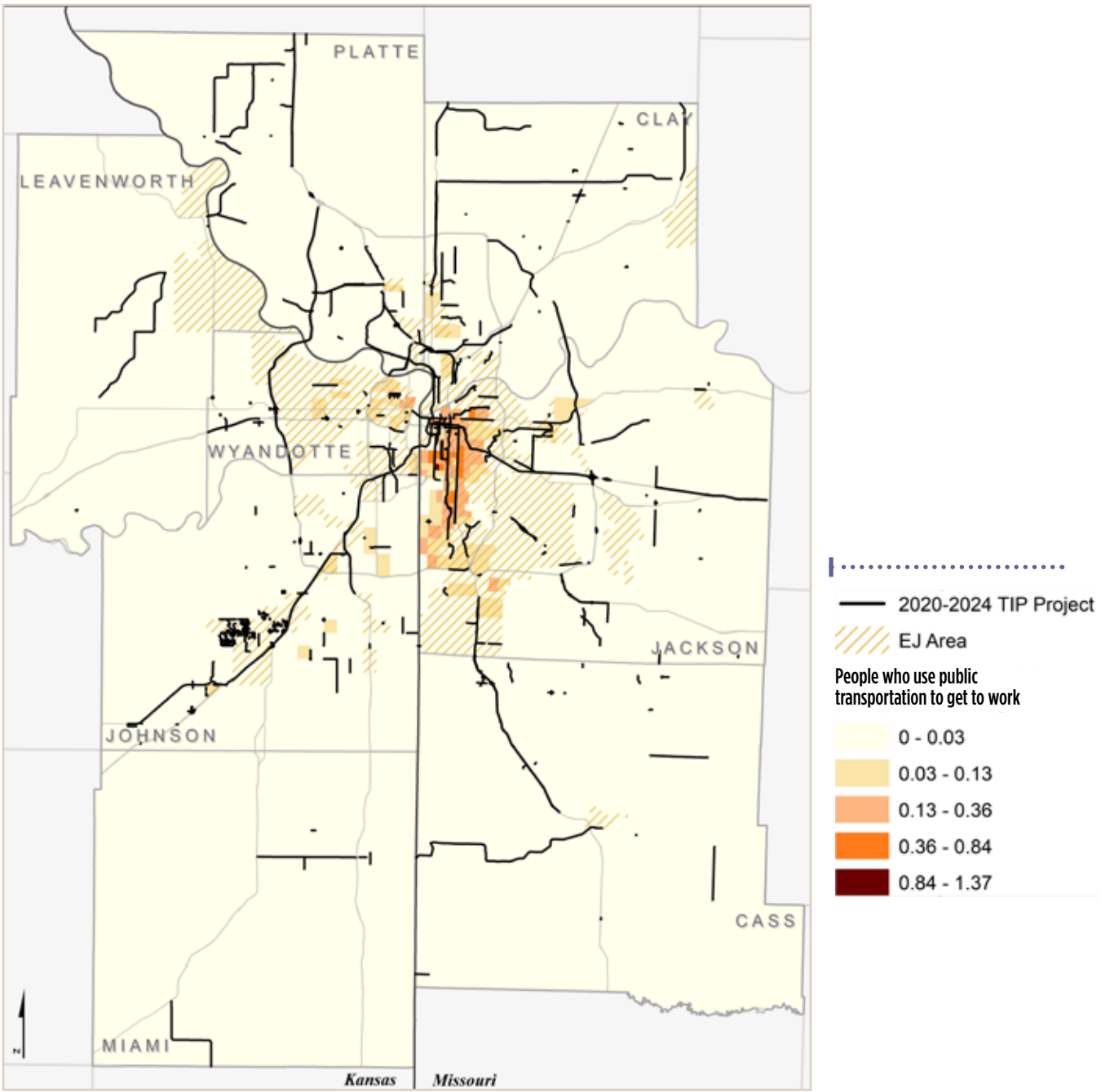
Figure 15: Households with no vehicle



People who use public transit to get to work

According to 2013-2017 ACS five-year estimates, 10,365 people in the eight-county region use public transportation as their primary mode of transportation to work, or 1% of workers age 16 and older. Spatial analysis shows concentrations of people using public transportation to get to work mainly in EJ areas. Densest concentration is in northwestern Jackson County, Missouri.

Figure 16: Populations of people who use transit for work trips



Financial analysis

Transportation projects

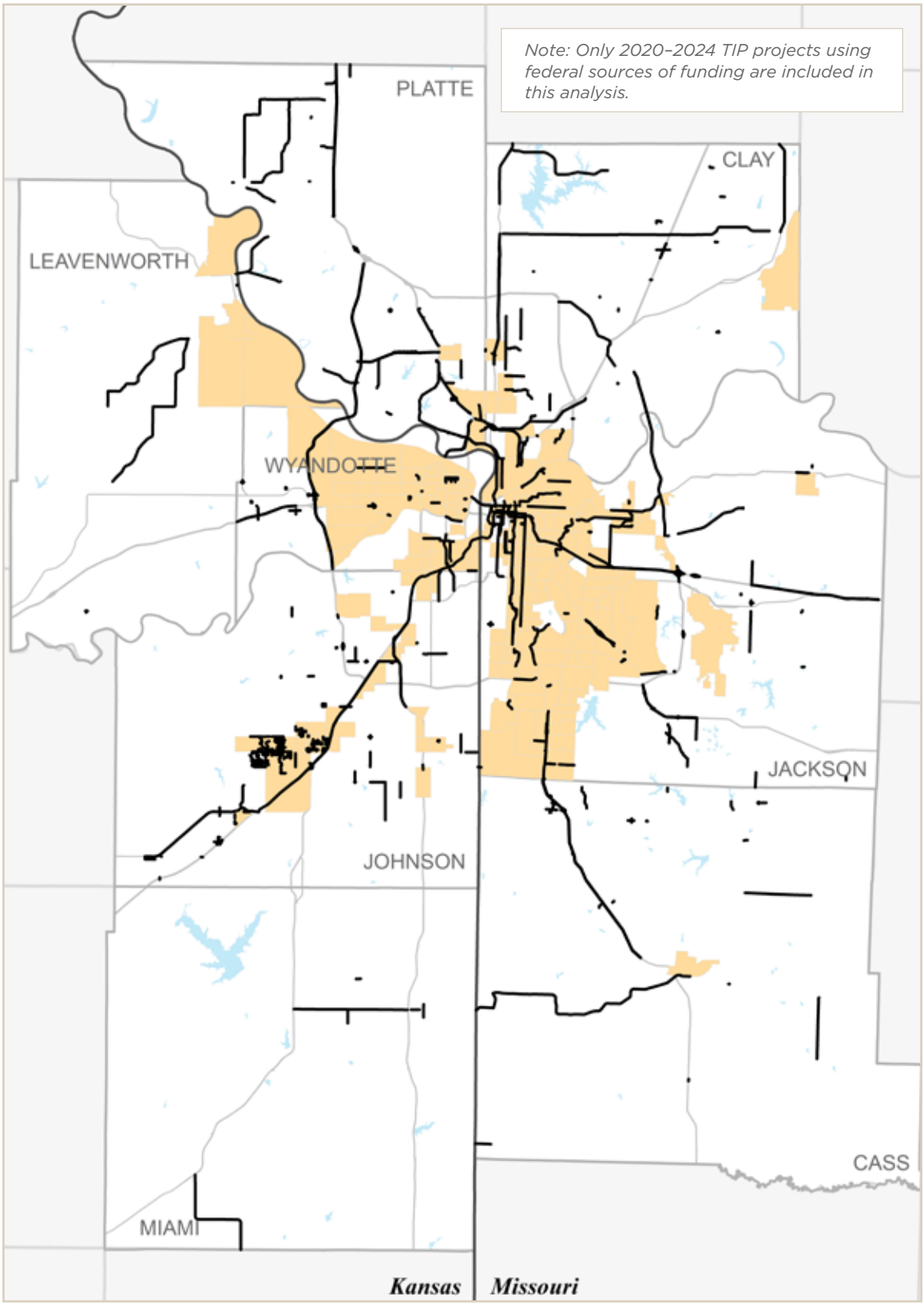
All projects listed in the 2020–2024 TIP that receive federal sources of funding were mapped and analyzed in terms of their estimated federal spending and per capita federal spending. Approximately 37.2% of these projects are mapped within or intersecting with EJ tracts.

Table 17: 2020–2024 TIP Federal investments

	EJ Areas	Non-EJ Areas	Total
Population	683,473	1,294,295	1,977,768
Percent of total population	35%	65%	100%
Federal sources of funding	$670,915,114	$303,606,190	$974,521,304
Percent of funding	69%	31%	100%
Per capita funding	$981.63	$234.57	$492.74

Note: MARC conducts a separate environmental justice analysis for the region's Metropolitan Transportation Plan, which focuses on all financially constrained transportation projects planned to be implemented over the life of the plan, typically a 30-year period of time.

Figure 17: Projects in the 2020–2024 TIP



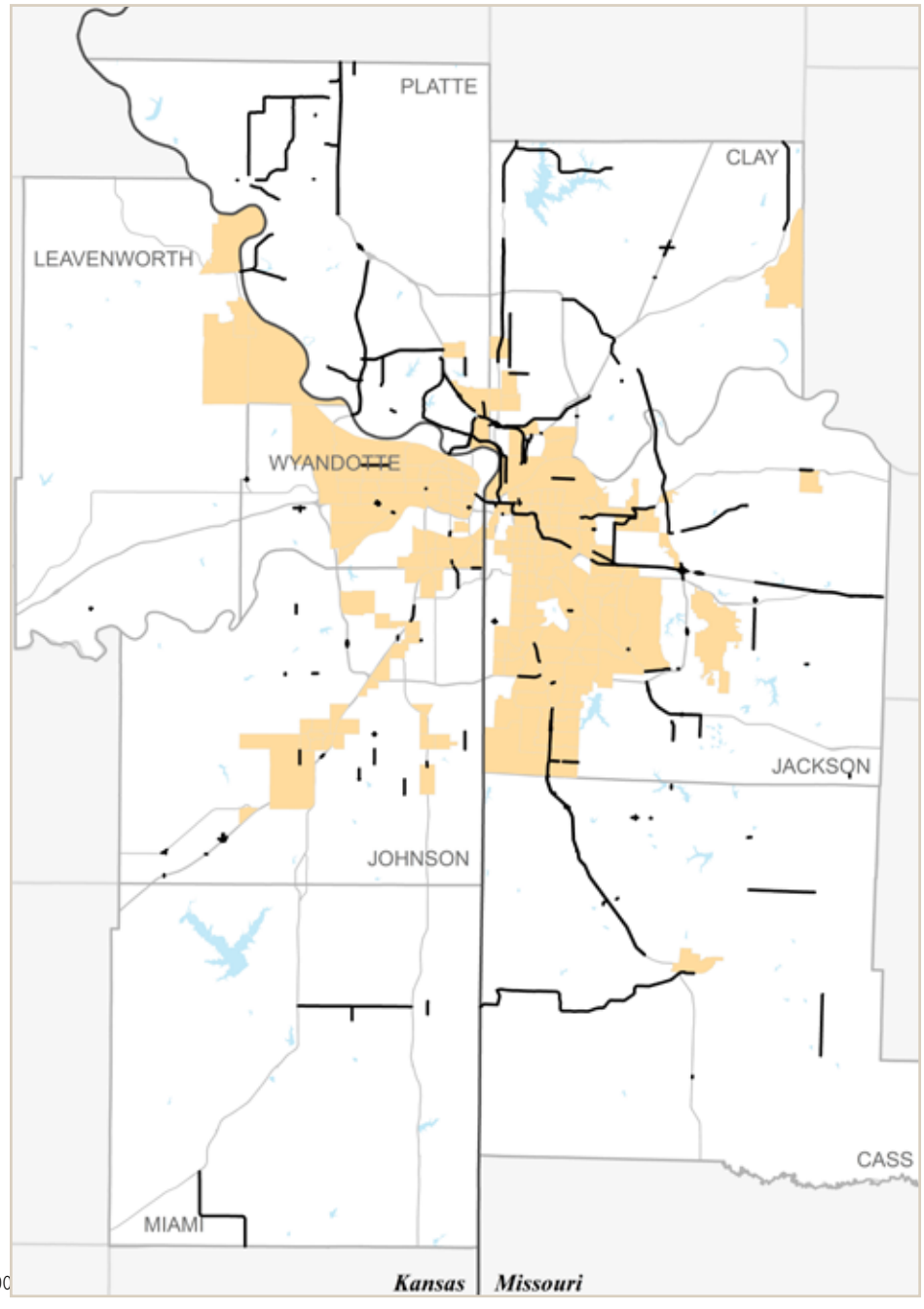
Roadway projects

All roadway projects in the 2020–2024 TIP that receive federal sources of funds were mapped. This includes roadway and bridge engineering, construction, and reconstruction/resurfacing projects. This also includes bridge replacement/rehabilitation and traffic management projects (e.g., Kansas City Scout). Approximately 29.6% of roadway projects are mapped within or intersecting EJ areas.

Table 18: 2020–2024 TIP roadway projects

	EJ Areas	Non-EJ Areas	Total
Federal sources of funding	$324,993,228	$252,956,480	$577,949,708
Percent of funding	56.23%	43.77%	100%
Per capita funding	$476	$195	$292

Figure 18: TIP roadway projects



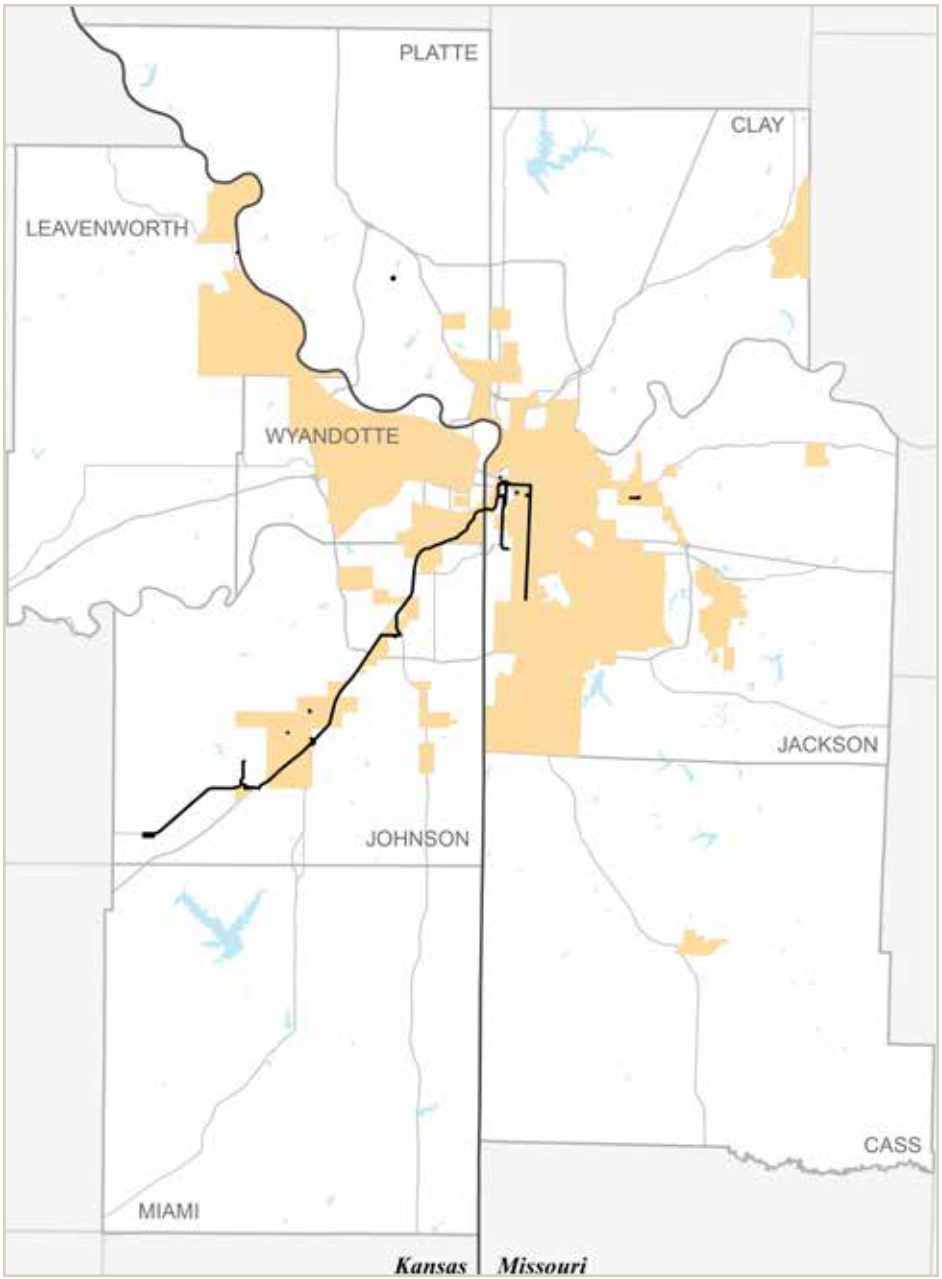
Transit and air quality projects

All transit and air quality projects in the 2020–2024 TIP that receive federal sources of funding were mapped, including transit capital, operations and facilities. This also includes fleet vehicle replacement/ alternative fuel projects, and air quality public education programs. The analysis shows 88% of these transit and air quality projects are mapped within or intersecting EJ areas.

Table 19: 2020–2024 TIP transit and air quality projects

	EJ Areas	Non-EJ Areas	Total
Federal sources of funding	$324,900,306	$1,040,000	$325,940,306
Percent of funding	99.68%	0.32%	100%
Per capita funding	$475	$1	$165

Figure 19: TIP transit and air quality projects



Note: Other projects not listed as "air quality" in the 2020-2024 TIP, such as bicycle and pedestrian projects, may provide air quality benefits.

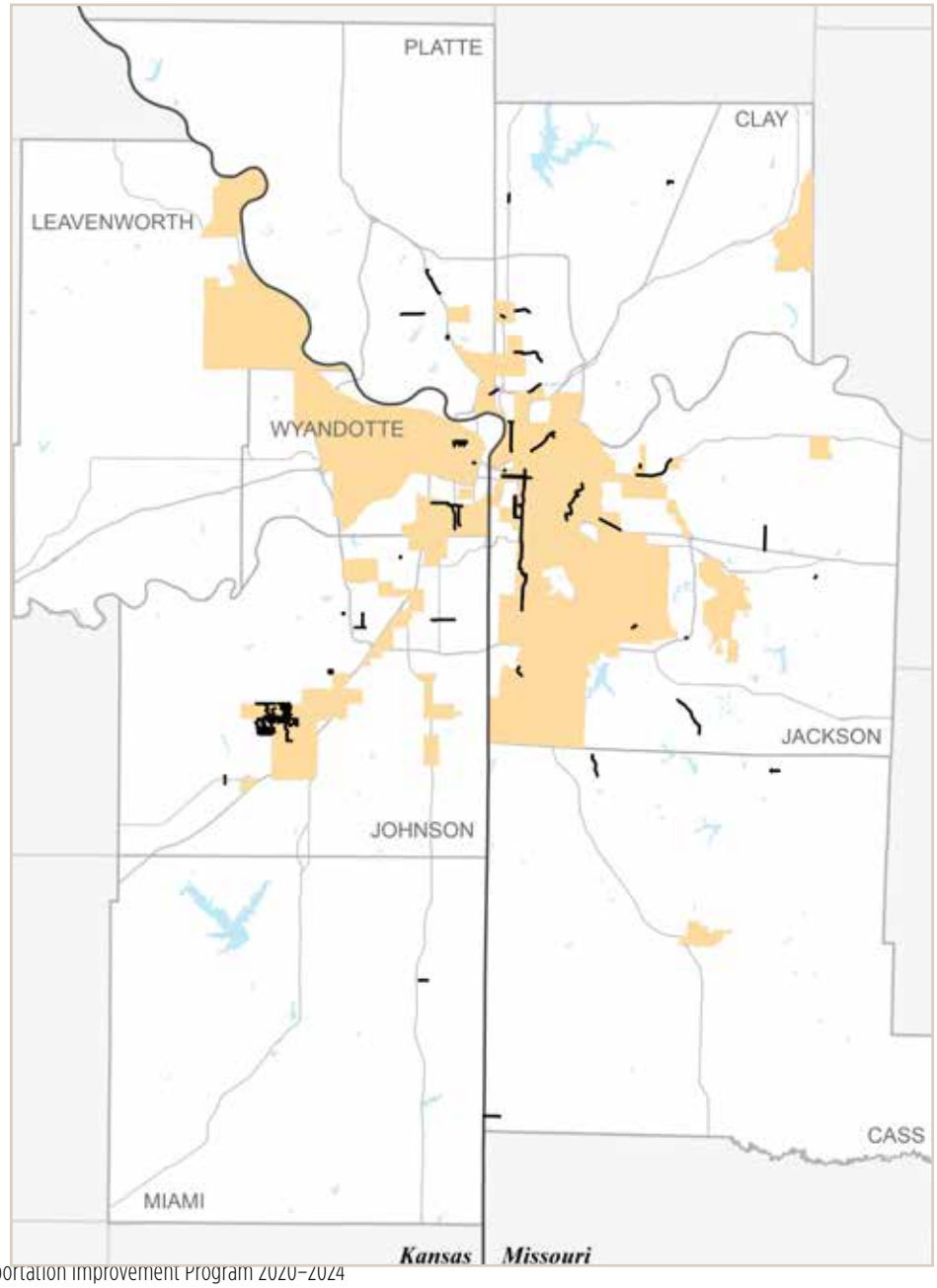
Bicycle and pedestrian projects

All bicycle projects and pedestrian projects in the 2020–2024 TIP that receive federal funds were mapped, including the construction/extension of bikeways, shared use paths and pedestrian facilities (e.g., sidewalk and intersection improvements). Approximately 50% of bicycle and pedestrian projects are mapped within or intersecting EJ areas.

Table 20: 2020–2024 TIP bicycle and pedestrian projects

	EJ Areas	Non-EJ Areas	Total
Federal sources of funding	$17,365,080	$17,045,810	$34,410,890
Percent of funding	50.46%	49.54%	100%
Per capita funding	$25	$13	$17

Figure 20: 2020–2024 TIP Bicycle and pedestrian projects



Note: Other projects in the 2020-2024 TIP not listed as "bicycle and pedestrian projects" may include active transportation elements as part of their scope of work.

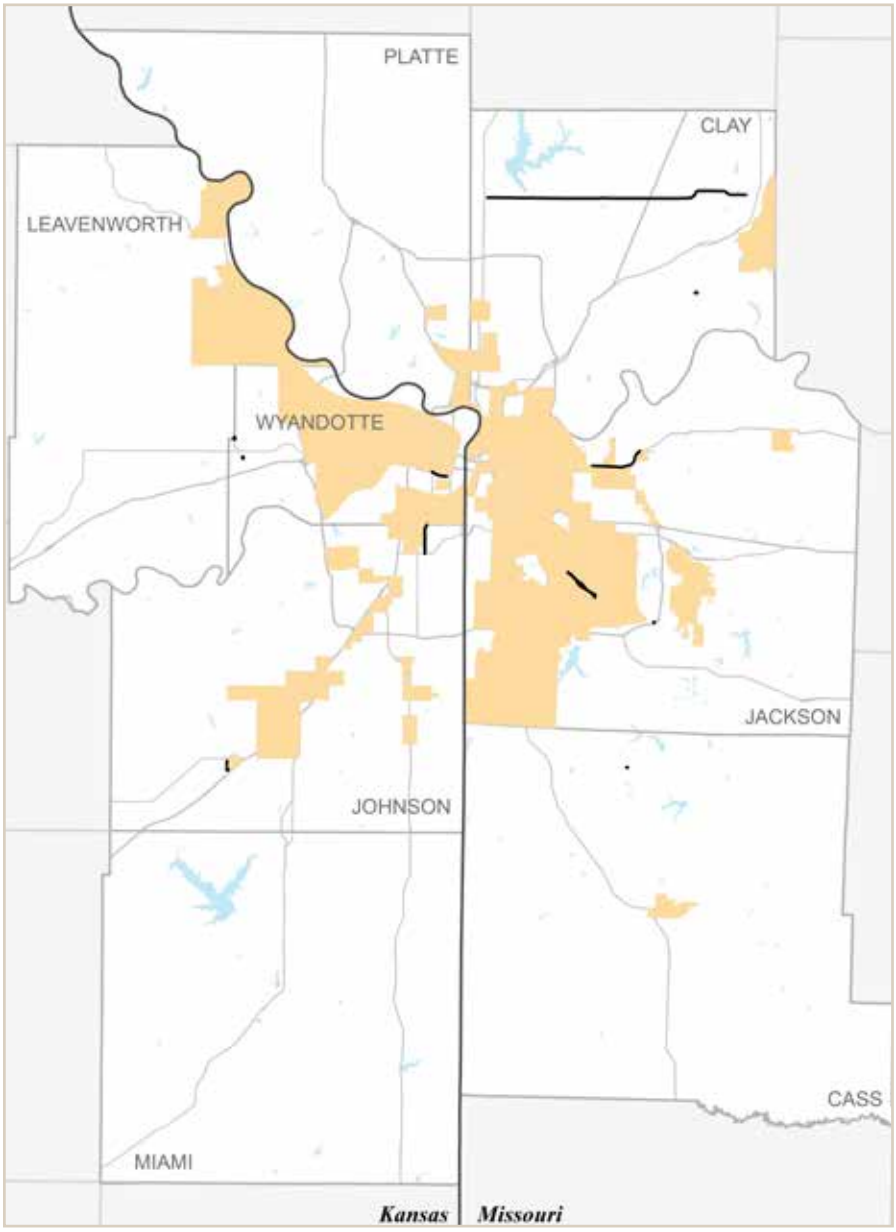
Safety projects

All projects with primary safety-related purposes in the 2020–2024 TIP that receive federal sources of funding were mapped, including features such as guardrail installation and repair, work-zone enforcement, motorist assist operations, and Safe Routes to School (SRTS) infrastructure and education projects. Approximately 27.3% of mapped safety projects are located within or intersect EJ tracts.

Table 21: 2020–2024 TIP safety projects

	EJ Areas	Non-EJ Areas	Total
Federal sources of funding	$3,969,400	$24,100,200	$28,069,600
Percent of funding	14.14%	85.86%	100%
Per capita funding	$6	$19	$14

Figure 21: TIP Safety projects



Note: Other projects in the 2020–2024 TIP not listed as "safety projects" may include safety elements as part of their scope of work.

Nonmotorized crash safety

The safety and well-being of the public are impacted by transportation system investments. Projects in the 2020-2024 TIP that use federal sources of funds seek to improve safety by maintaining and modernizing roadways, accommodating nonmotorized modes of travel, enforcing traffic laws, investing in public transit and educating roadway users about responsible travels behaviors.

The spatial analysis of the eight-county region shows that households with no vehicles are more heavily concentrated in EJ areas. This means these households are more likely to be dependent on low-cost mobility choices such as transit and non-motorized transportation (e.g., walking, bicycling).

Assessment of regional roadway crashes from 2011–2015 that involved a pedestrian or bicyclist shows a greater portion of incidents, compared to overall population numbers, occurred in EJ areas. While this does not mean that the individuals involved in crash incidents are EJ populations or reside within an EJ area, it illustrates a large number of crashes occur in areas with high population density, employment density and activity.

Table 22: Pedestrian crashes, 2013-2017

	EJ Areas	Non-EJ Areas	Total
Total population	683,473	1,294,295	1,977,768
Percent of total population	34.6%	65.4%	100%
Pedestrian crashes	1135	836	1,971
Percent of pedestrian crashes	57.6%	42.4%	100%

Note: Data provided by MoDOT and KDOT. All crashes included in this analysis are incidents that were reported by or to law enforcement officials. Not all crashes were able to be located based on the data provided.

Table 23: Bicycle crashes, 2013-2017

	EJ Areas	Non-EJ Areas	Total
Total population	683,473	1,294,295	1,977,768
Percent of total population	34.6%	65.4%	100%
Bicycle crashes	398	461	859
Percent of bicycle crashes	46.3%	53.7%	100%

Figure 22: Pedestrian crashes, 2013–2017

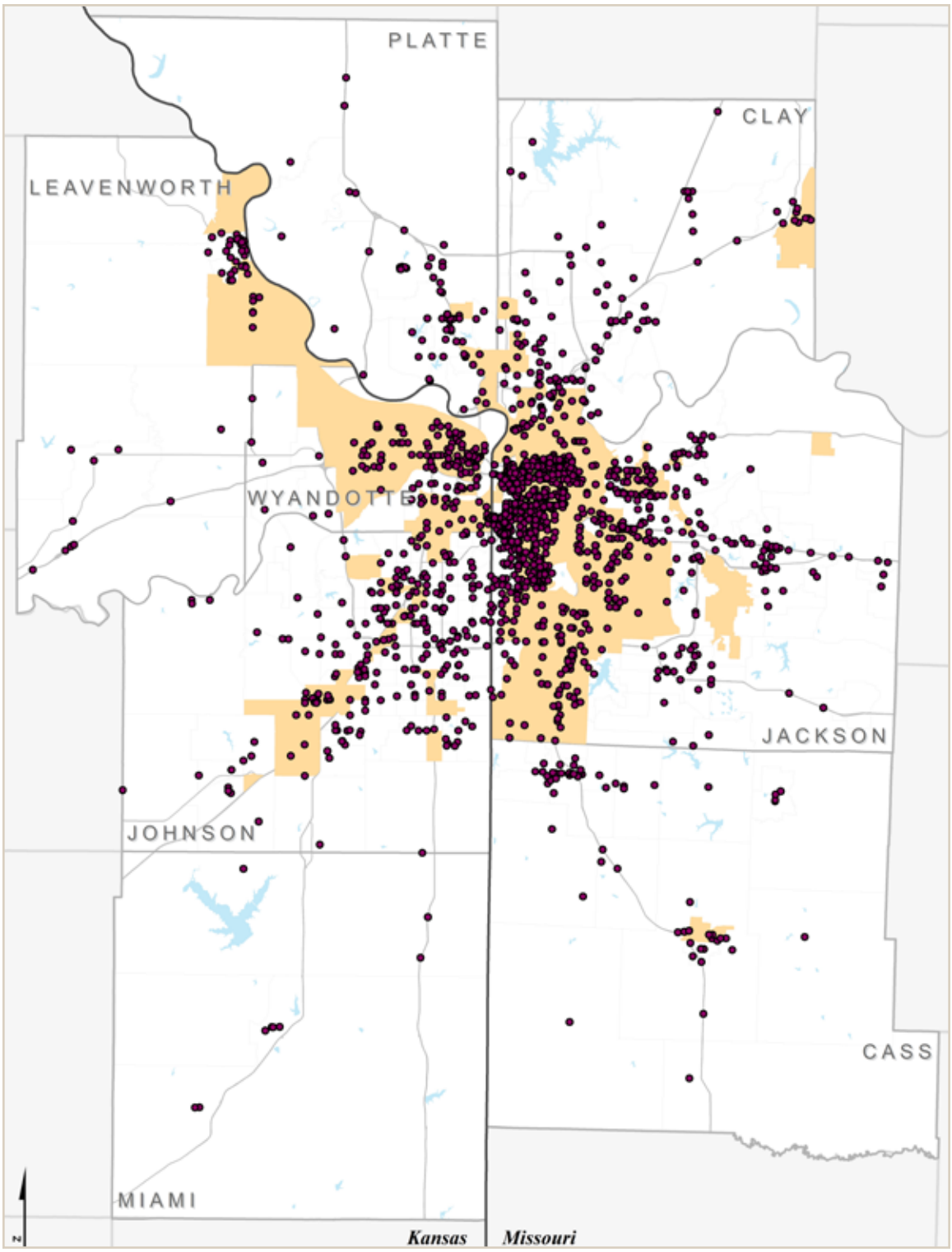
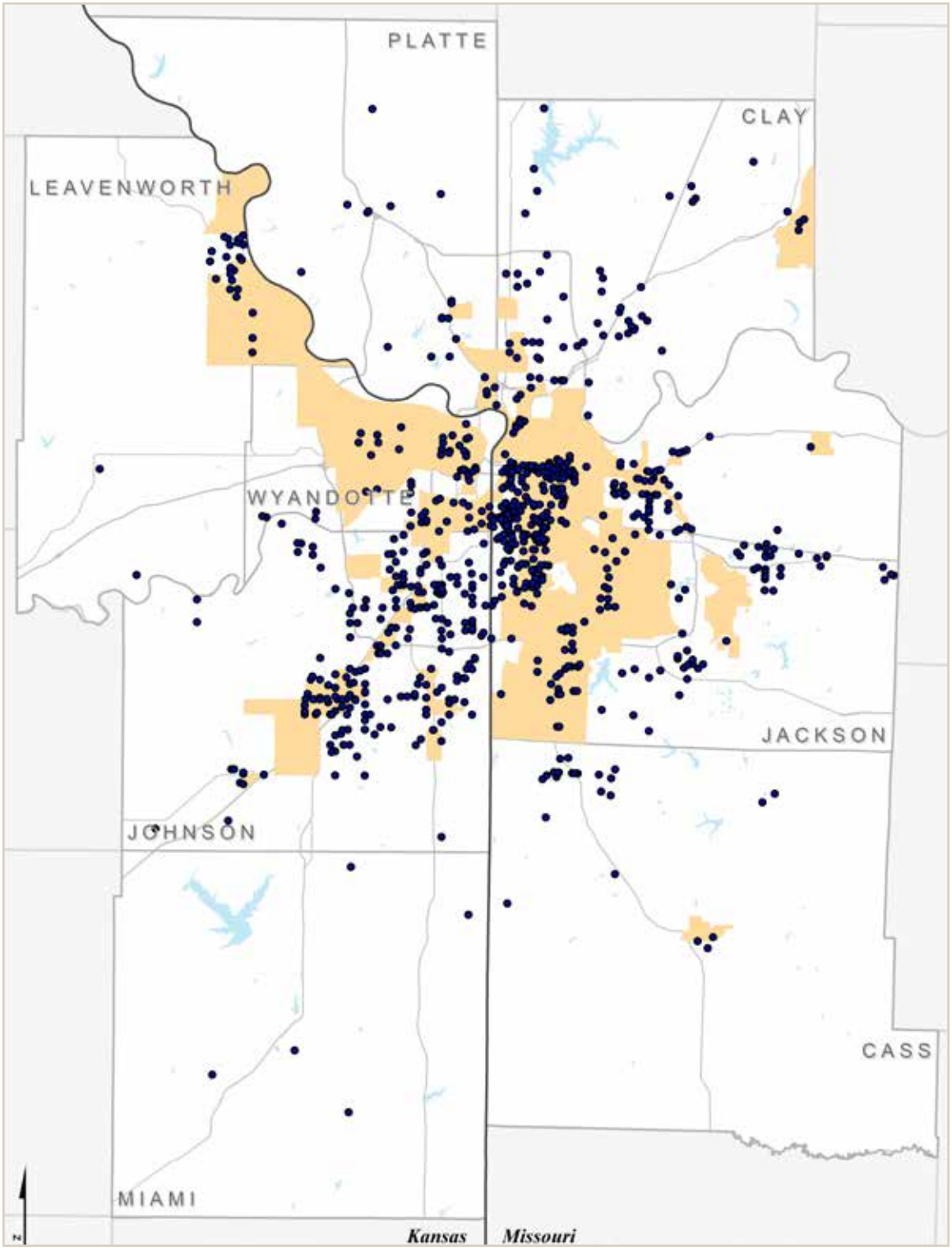


Figure 23: Bicycle crashes, 2013–2017

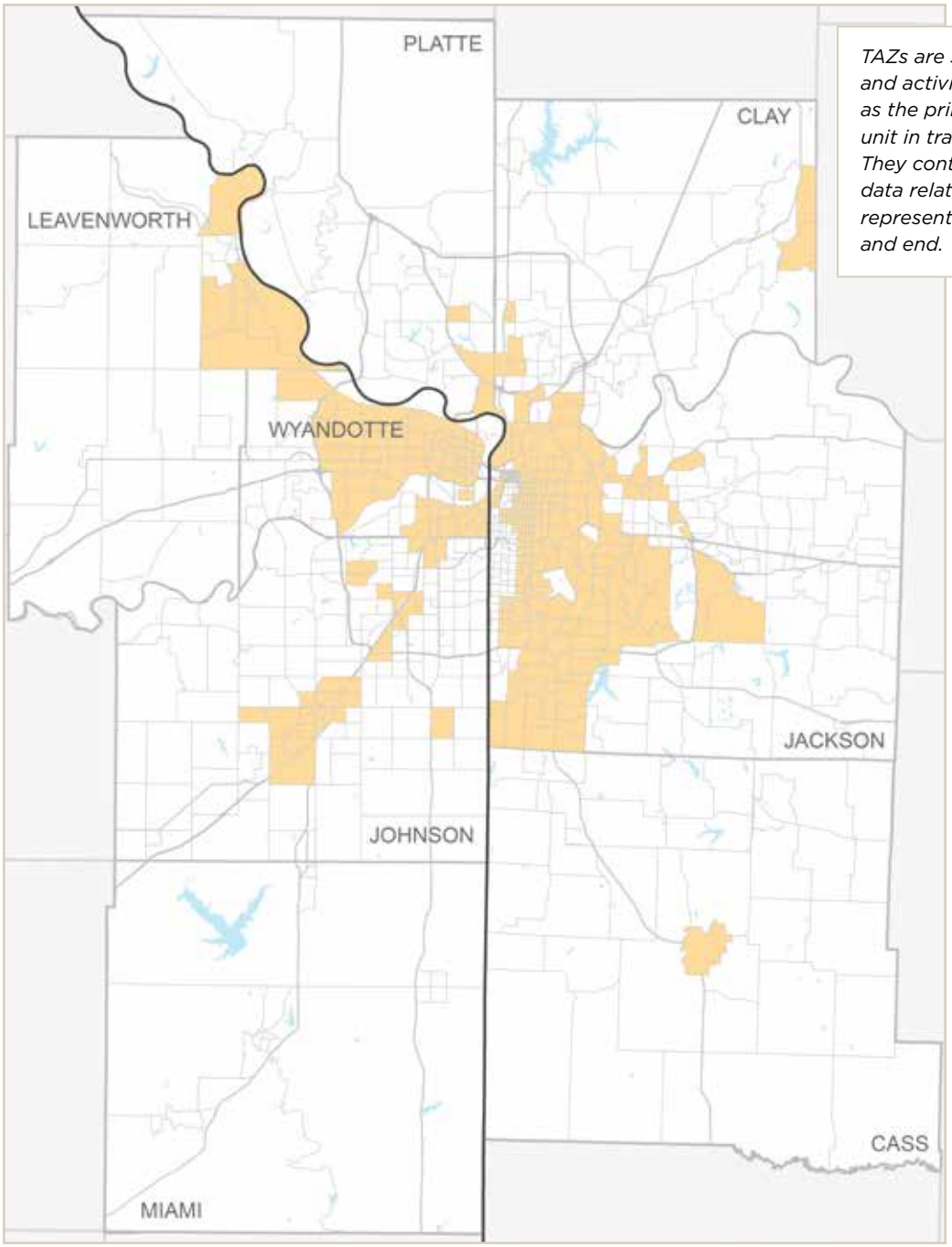


Travel model analysis

Travel Demand Model

The travel-demand model is a mathematical model — taking into account traffic volumes, land use, roadway type and population — that predicts travel patterns and trip-generation statistics for particular geographic areas in the region. Taking into consideration the effect federally-funded projects listed in the 2020–2024 TIP will have on the regional transportation network, MARC ran the travel-demand model to forecast statistics for the Environmental Justice Analysis. The analysis was performed at the Traffic Analysis Zone (TAZ) level.

Figure 24: Traffic Analysis Zones for the Kansas City region



TAZs are similar land-use and activity areas that serve as the primary analytical unit in travel-demand model. They contain socioeconomic data related to land use and represent where trips begin and end.

Table 24: Travel-demand Model Results			
Demographics	**EJ TAZs**	**Non-EJ TAZs**	**Total**
Total population	678,893	1,418,463	2,097,356
Percent of total population	32.37%	67.63%	100%
Total households	274,678	562,013	836,691
Percent of total households	32.83%	67.17%	100%
Total employment	366,374	692,303	**1,058,677**
Percent of total employment	34.61%	65.39%	100%
Trips generated (by mode)	**EJ TAZs**	**Non-EJ TAZs**	**Total**
Single-occupant vehicle trips (originating from)	1,488,699	3,045,437	4,534,136
Percent of single-occupant vehicle trips	32.83%	67.17%	100%
High-occupancy vehicle trips (originating from)	523,563	1,103,758	**1,627,321**
Percent of high-occupancy vehicle trips	32.17%	67.83%	100%
Transit trips (originating from)	26,921	12,828	39,748
Percent of transit trips (originating from)	67.73%	32.27%	100%
Trips generated (by purpose)	**EJ TAZs**	**Non-EJ TAZs**	**Total**
Home-based work trips	427,595	887,316	**1,314,911**
Percent of home-based work trips	32.52%	67.48%	100%
Home-based other trips	1,028,712	2,073,130	3,101,842
Percent of home-based other trips	33.16%	66.84%	100%
Non-home-based trips	555,956	1,188,746	1,744,702
Percent of non-home-based trips	31.87%	68.13%	100%
Travel times (average time in min.)	**EJ TAZs**	**Non-EJ TAZs**	
Peak hour trips	29.39	36.01	
Off-peak hour trips	28.78	35.38	

Note: Trips originating from a TAZ may not necessarily end in the same TAZ. Trip destinations can end in other TAZs (EJ or not).

Travel-Demand Model Definitions

Single-occupant vehicle — A privately operated motorized vehicle whose only occupant is the driver.

High-occupancy vehicle — A motorized vehicle that includes a driver and at least one passenger.

Home-based work trip — A trip originating from home for work-related purpose and typically ending at an employment center.

Home-based other — A trip originating from home with its purpose being non-work-related.

Non-home-based trip — A trip originating at a location other than home.

Peak hour trip — A trip originating between 7–9 a.m. or 4–6 p.m.

Off-peak hour trip — A trip originating between times other than 7–9 a.m. or 4–6 p.m.

Project programming

MARC incorporates environmental justice into its planning and programming processes for federal aid transportation funding. In 2018, MARC issued a call for projects for Surface Transportation Block Grant Program (STBG) and STBG Set-Aside for Transportation Alternatives (TA) funding. The region's Kansas and Missouri STP committees and Active Transportation Programming Committee used environmental justice in the project evaluation criteria, specifically determining whether or not projects improve accessibility for EJ areas. Projects that resided partially or completely within an EJ tract were awarded points. Projects that detailed and exhibited accessibility improvements aspects for EJ areas received additional points.

In 2018, MARC also issued a call for Section 5310 Projects for Enhanced Mobility of Seniors and Individuals with Disabilities Program and Planning Sustainable Places (PSP) funding.

MARC's Mobility Advisory Committee (MAC) used environmental justice in the 5310 project evaluation criteria. Projects were evaluated based on whether or not they maintain current levels of service, expand service or maintain accessibility for disadvantaged populations such as older adults and persons with disabilities).

In 2018, MARC issued a call for projects for PSP funding to continue the work of the Creating Sustainable Places initiative and the region's Metropolitan Transportation Plan. The Sustainable Places Policy Committee (SPPC) used environmental justice in their project scoring criteria. Projects that were within EJ tracts or that connected EJ tracts to opportunities were awarded points. A project received additional points if it addressed existing adverse human health and environmental effects.

Table 25: Comparison of Total Applications and Funded Projects, 2018			
Kansas STBG (FFY 2021–2022)	Projects receiving EJ Points	All projects	Percent in EJ
Applications	12	28	42.86%
Total federal funds requested	$34,137,414	$105,075,414	32.49%
Funded projects	5	12	41.67%
Total federal funds programmed	$6,207,000	$30,500,000	20.35%
Missouri STBG (FFY 2021–2022)	Projects receiving EJ Points	All projects	Percent in EJ
Applications	16	32	50.00%
Total federal funds requested	$66,713,772	$110,333,549	60.47%
Funded projects	12	20	60.00%
Total federal funds programmed	$32,965,000	$36,840,000	89.48%
Kansas TA (FFY 2021–2022)	Projects receiving EJ Points	All projects	Percent in EJ
Applications	6	12	50.00%
Total federal funds requested	$2,344,986	$4,452,986	52.66%
Funded projects	6	8	85.70%
Total federal funds programmed	$2,100,000	$2,702,000	77.72%
Missouri TA (FFY 2021–2022)	Projects receiving EJ Points	All projects	Percent in EJ
Applications	14	21	66.67%
Total federal funds requested	$6,030,144	$9,420,325	64.01%
Funded projects	8	9	88.89%
Total federal funds programmed	$3,307,144	$3,457,144	95.66%
Section 5310 (FFY 2018-2019	Projects receiving EJ Points	All projects	Percent in EJ
Applications	8	18	44.44%
Total federal funds requested	$1,731,153	$2,636,354	65.66%
Funded projects	8	15	53.33%
Total federal funds programmed	$1,731,153	$2,280,891	75.90%
PSP (FFY 2019)	Projects receiving EJ Points	All projects	Percent in EJ
Applications	18	24	75.00%
Total federal funds requested	$1,659,600	$2,238,800	74.13%
Funded projects	12	13	92.31%
Total federal funds programmed	$803,375	$888,375	90.43%

Summaries

Spatial summary

Spatial analysis shows that 37.2% of mapped 2020-2024 TIP projects that receive federal funds are mapped within or intersecting EJ tracts, which account for 391 square miles (10.2%) of the region's total area. About 35.5% of 2020-2024 TIP projects that receive federal funds are mapped within or intersecting census tracts, in which the proportion of minority populations in the tract is greater than the minority proportion of the overall MPO area (28.1%). Approximately 22.1% of TIP projects that receive federal funds are mapped within or intersecting census tracts, in which more than 20 percent of households in poverty.

Geographic distribution of the projects in relation to defined EJ tracts indicates EJ areas are not being denied the benefit of federal transportation spending. It is important for MARC to continue to incorporate equity considerations in its federal-aid transportation programming processes to ensure EJ areas receive a fair proportion of transportation investments at a regional scale. Evaluation of specific impacts, adverse effects and benefits at the project level, as well as determining project-level measures to avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects is conducted by project sponsors during the project development stage in the environmental review process as required by NEPA. MARC should continue to encourage best practices by project sponsors through project prioritization measures, such as scoring for EJ considerations and quality public participation.

Although not covered under Executive Order 12898, populations that may be transportation-disadvantaged — populations with a disability, the older adults, veterans, households with no vehicle available and people using public transportation to get to work — were spatially analyzed and appear to be served by federal transportation investments.

Financial summary

Approximately 35% of the region's population (683,473 people), are reported to reside in the region's EJ tracts. About 69% of federal spending listed in the 2020-2024 TIP is planned for projects that are mapped within or intersecting EJ areas.

- 29.8% of roadway projects that receive federal funds are mapped within or intersecting EJ areas. This is 56.2% of federal funding for roadway projects.
- 88% of transit and air quality projects that receive federal funds are mapped within or intersecting EJ areas. This is 99.7% of federal funding for transit and air quality projects.
- 52.2% of bicycle and pedestrian projects that receive federal funds are mapped within or intersecting EJ areas. This is 50.5% of federal funding for bicycle and pedestrian projects.
- 27.2% of safety projects that receive federal funds are mapped within or intersecting EJ areas. This is 14.1% of federal funding for safety projects.

Geographic distribution of federal funding listed in the 2020-2024 TIP in relation to defined EJ tracts indicates EJ areas are not being denied the benefit of federal transportation spending at the regional scale. A significant proportion of federal funding for transit projects is planned to serve EJ areas. Public transit connectivity is identified by MARC's Affirmatively Furthering Fair Housing Plan as a benefit to areas of concentrated poverty and people of color. A significant proportion of federal funding for bicycle and pedestrian infrastructure is planned for projects in or connecting to EJ areas. Smart Moves 3.0, the region's transit and mobility plan, recognizes active transportation as an important first and last mile connection and recommends quality bicycle and pedestrian facilities, especially on transit routes and in and around mobility hubs.

Safety summary

An assessment of 2013–2017 roadway crashes involving a pedestrian or bicyclist throughout the region shows a greater proportion of incidents, compared to overall population numbers, occurred in EJ areas compared to non-EJ areas. MARC's 2013 Pedestrian Crash Analysis found that this is due to higher population density, employment density, activity within EJ areas, and that households within EJ areas — primarily households with no vehicles available — are more likely to be dependent on non-motorized transportation choices, such as walking and biking. MARC will continue to emphasize safety and security policy goal in its federal-aid programming processes. Additionally, MARC will continue to incorporate the four Es of transportation safety (education, engineering, enforcement, and emergency services) into its planning programs.

Travel model summary

The travel-demand model estimates roughly one-third of the region's population, households and employment reside within EJ transportation analysis zones (TAZs). Despite this, more than two-thirds (67.3%) of all transit trips in the region are expected to originate in EJ TAZs, illustrating the importance of public transit investments in EJ areas and transit connectivity to destinations throughout the region. Smart Moves 3.0, the long-range transit and mobility vision for the Kansas City region adopted in December 2017, names equity as one of ten primary goals and details the need for all people to have the opportunity to thrive by providing equal access to jobs, goods and services.

Results from the travel-demand model also show that with the implementation of projects listed in the 2020–2024 TIP, trips in EJ TAZs will continue to have, on average, shorter travel times during both peak and off-peak hours than non-EJ TAZs.

Programming summary

During the most recent call for transportation projects in 2018, MARC's transportation programming committees generally recommended greater levels of federal funding for projects that received environmental justice points, compared to all applications received, with the lone exception being the Kansas STP Committee. The Kansas STP Committee programmed 20.4% of KS-STBG funding (FFY 2021–2022) and the Missouri STP Committee programmed 89.5% of MO-STBG funding (FFY 2021–2022) to projects receiving environmental justice points. The ATPC programmed 77.7% of KS-TA funding (FFY 2021–2022) and 95.7% of MO-TA funding (FFY 2021–2022) funding to projects that received environmental justice points.

The MAC programmed 75.9% of Section 5310 funding (FFY 2018-2019) and the SPPC programmed 90.4% of PSP funding (FFY 2019) to projects receiving environmental justice points.

MARC continues to incorporate environmental justice into its programming processes for federal-aid transportation funding.

1 Definitions of provided by the U.S. Department of Transportation's Federal Highway Administration Environmental Justice Reference Guide, published April 1, 2015, which is available online at: https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015

2 The ACS calculated poverty based off of the U.S. Census Bureau's 2017 poverty thresholds, which are available online at: https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html. Thresholds vary by family size and composition. If a family income is less than the dollar value of a particular threshold, the family's household is considered to be in poverty.

More information about ACS definitions and determinations of poverty status is available in the 2017 Subject Definitions document, available online at https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2017_ACSSubjectDefinitions.pdf.

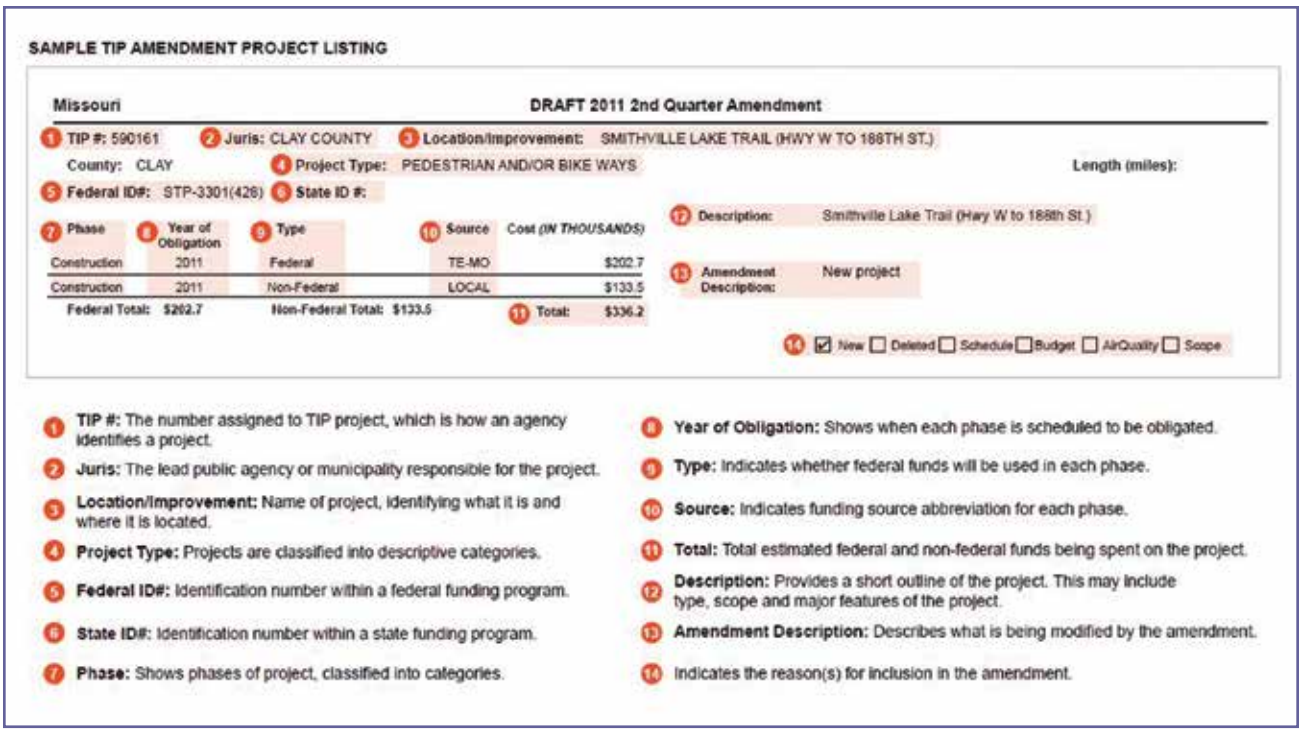
8. Project listings

How to Read the TIP Project Listings

The project listing is a complete list of all projects in the TIP for 2020–2024. The state is noted in the heading. Bistate projects are listed first, followed by Kansas and Missouri projects.

View the complete listing at marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/TIP/Assets/Project_Listing20_24.

Below is a sample TIP project listing. Each field or category is defined in the diagram.



Appendix A: Funding Definitions

Code or abbreviation	Program	Program Summary
5307	Urbanized Area Formula Grant Program	Provides Federal Transit Administration (FTA) funding to urbanized areas. This funding can be spent on public transit and paratransit capital improvements, operating assistance, and preventive maintenance.
5309	Transit Capital Improvements Program	Provides Federal Transit Administration (FTA) funding for the establishment of new rail or busway projects, the improvement and maintenance of existing rail and other fixed guideway systems, and the upgrading of bus systems.
5310	Elderly and Persons with Disabilities Program	Provides FTA funding (through the states) for transit capital assistance to private, non-profit human service organizations for the purchase of vehicles to transport elderly and disabled individuals.
5311	Nonurbanized Area Formula Grant Program	Provides FTA funding (through the States) for rural and small urban transit and paratransit assistance, capital improvements, and operating assistance. These funds are distributed to transit authorities and nonurbanized areas.
5339	Bus and Bus Facilities Program	Funding to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities.
BR	Statewide Bridge Rehabilitation and Replacement	Provides funding to improve the condition of highway bridges through replacement, rehabilitation, and systematic preventive maintenance.
BRO	Off-system Bridge	Provides funding to improve the condition of bridges that are not on a Federal-aid highway through replacement, rehabilitation, and systematic preventive maintenance.
BUILD	Better Utilizing Investments to Leverage Development	Provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Previously known as Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grants
CMAQ	Congestion Mitigation Air Quality	Provides funds for transportation projects that improve air quality in areas where the EPA considers air quality to be poor, or where there have been air quality problems in the past.
DEMO	Demonstration	Repurposed funding provided by Congress to demonstrate some new or innovative construction, financing, or other techniques on specific projects
HIP	Highway Infrastructure Program	Restoration, repair, construction, and other activities on eligible federal-aid facilities
HP	Congressional High Priority Project	Funding for projects deemed by legislation to be of national importance.
HSIP	Highway Safety Improvement Program	Program to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands.
IM	Interstate Maintenance	Provides funding for resurfacing, restoring, rehabilitating and reconstructing most routes on the interstate system.

Code or abbreviation	Program	Program Summary
ITS	Intelligent Transportation Systems	Provides for the research, development, and operational testing of ITS aimed at solving congestion and safety problems, improving operating efficiencies in transit and commercial vehicles, and reducing the environmental impact of growing travel demand.
NHFP	National Highway Freight Program	Program to improve the efficient movement of freight on the National Highway Freight Network
NHPP	National Highway Performance Program	Provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities onthe NHS, and to ensure that investments of federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a state's asset management plan for the NHS.
NHS	National Highway System	Provides funding for improvements to rural and urban roads that are part of the NHS, including the interstate system, as well as, other roadway important to the nation's economy, defense, and mobility. Under certain circumstances, NHS funds may also be used to fund transit improvements in NHS corridors.
SP	Surface Transportation Program Safety Program	Provides funding for safety activities in the Hazard Elimination Program and the Railway-Highway Crossing Program. Safety funds may be used for highway safety improvement projects on any federal-aid system highway, public transportation facility, or any public bicycle and/or pedestrian facility.
SRTS	Safe Routes to School	Provides funds to the states to substantially improve the ability of primary and middle school students to walk and bicycle to school safely.
STP	Statewide Surface Transportation Program	Flexible funds that can be used on Federal-aid highway, bridges, transit capital projects, bicycle and pedestrian facilities and related non-construction projects. STP funds are sub-allocated to MARC by the Federal Highway Administration.
STPM	Metropolitan Surface Transportation Program	A subcategory of statewide STP funds suballocated to Transportation Management Areas.
TCSP	Transportation and Community and System Preservation Pilot Program	Provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships between transportation and community and system preservation and to identify private sector-based initiatives.
TA	Transportation Alternatives	Program to provide for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs. Replaces the funding from pre-MAP-21 programs including Transportation Enhancements, recreational trails, Safe Routes to School, and other discretionary programs, wrapping them into a single funding source.

Appendix B: Public Participation Plan

The Public Participation Plan is a core document that contains public engagement strategies and policies for the region's transportation planning process. MARC's Public Participation Plan is available online at marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/Public-Participation-Plan.

Appendix C: Public Comments and Responses

The 2020–2024 Transportation Improvement Program will be released for public review and comment at marc.org/Transportation/Public-Input/Overview/Transportation-Public-Input on September 17, 2019, for a two-week period. Announcements were printed in various local newspapers, posted on the MARC website, and shared with the agency's social media followers.

Appendix D: Projects removed from TIP

MARC has compiled a listing of projects included in the 2018–2022 Transportation Improvement Program that have been completed, are under construction or have been withdrawn by request of the project sponsor.

Table 26: Projects From TIP 2018–2022 Completed

Lead Agency	Project Name	Total Cost
BikeWalkKC	SRTS: Local Spokes Across the KC Region	$1,250,090
BikeWalkKC	Troost Bridge Placemaking	$179,000
Cass County	Replace Bridge No. 4070004 - Cart Road 407(243rd Street) Over Camp Creek	$410,000
Cass County	Replace Bridge No. 5900010 - Cart Road 590(342nd Street) Over Sugar Creek	$390,000
Grain Valley	Eagles Parkway Sidewalk Enhancements	$162,904
Harrisonville	Improvements to Mechanic Street, (Route 7) from Independence to Stella Ave.	$3,928,000
Harrisonville	Jefferson St Pedestrian Walkway	$286,997
Independence	39th and Noland Right Turn Lanes	$810,000
Independence	Noland Rd and Fair Intersection Improvements	$580,000
Independence	Englewood Station Art District Phase III	$400,000
Independence	Independence OGL Traffic Controllers	$118,875
Jackson County	Santa Fe Road Bridge over the BNSF railroad	$1,085,000
Jackson County	Rock Island Corridor (KATY Connection) Acquisition, Phase I Implementation and Construction Project	$3,431,634
Johnson County	127th Street over Captain Creek Bridge Replacement	$1,091,758
Kansas City, MO	152 Trail Segment 4- Congress to Old Tiffany Springs	$747,983
Kansas City, MO	135th Street - Holmes to M-150	$6,100,000
Kansas City, MO	Blue River Trail--Brush Creek to Stadium Drive	$2,702,462
Kansas City, MO	27th St ATMS	$171,000
Kansas City, MO	Armour/Benton Bicycle Facilities	$527,673
KC Scout	Advance DMS for K-7 Traffic approaching I-70	$1,150,000
KCATA	Smart Moves- Regional CSA Implementation (Downtown)	$4,375,000
KDOT	I-70 Study for the Lewis and Clark Viaduct	$1,440,800
KDOT	K-32: K-32/Turner Diagonal Interchange	$646,200
KDOT	I-435: Beginning 0.51 Miles North of Junction K-5/I-435 thence North to the Missouri River Bridge	$0
KDOT	I-70: Beginning at East Edge of Quarry Road Bridge thence East to 0.6 Miles East of the 38th Street Bridge	$946,000

Table 26: Projects From TIP 2018–2022 Completed		
Lead Agency	**Project Name**	**Total Cost**
KDOT	I-635: Beginning at South Junction K-5/I-635 thence North to the Missouri River Bridge	$1,609,200
KDOT	I-70- Lewis & Clark Viaduct Repair on Brs #173, 177 &178	$3,169,600
KDOT	I-70: Bridge #157 on I-70 located at I-70 West Bound and I-635 South Bound	$1,786,300
KDOT	I-435: Just South of the Ramp to K-32	$57,800
KDOT	I-35 in Wyandotte County: Allow Bus Operation on Shoulders	$311,000
KDOT	Bridge #042 (42nd Street) Located 0.2 Miles North of Old K-32 in Wyandotte County	$520,000
KDOT	Bridge #043 (Speaker Road) Located 0.39 Miles North of Old K-32 in Wyandotte County	$640,000
KDOT	I-435 in Wyandotte County Guardrail Upgrade	$97,820
KDOT	I-70: Beginning at 18th Street thence East to Junction I-70/I-670	$1,024,700
KDOT	I-635 near mile marker 7.66 south in Wyandotte County	$111,600
KDOT	I-70 and Turner Diagonal Interchange Preliminary Environmental Review	$50,000
KDOT	Johnson County Gateway Interchange Project Area: I-435 from 87th Street E to Pflumm Road, I-35 & K-10	$46,954,000
KDOT	Johnson County Gateway: I-435 from 87th Street E to Pflumm Road, I-35 & K-10	$298,829,000
KDOT	Sound Wall Repair in Johnson County	$105,000
KDOT	K-7 Corridor Study Update	$400,000
Kearney	East 92 Highway Sidewalk to Porter Ridge/South Marimack Drive	$711,000
Lenexa	City Center Amenity Zone	$1,655,882
Lenexa	Renner Mixed-Use Trail	$514,460
MARC	Planning and Environmental Linkages (PEL) Study: Broadway Extension (US-169), including bridge over Missouri River, and I-70 North Loop	$3,750,000
MoDOT	I-435: Pavement resurfacing from I-29 to Cookingham Drive in Kansas City.	$5,698,000
MoDOT	Bridge improvements on Route Z	$1,200,000
MoDOT	ITS upgrades and signage north of the MO river	$3,251,000
MoDOT	Repair slide along I-435 south of bridge A3341 over Prairie Creek	$555,000
MoDOT	US-69: Drainage improvements at Frontier Street.US 69: Drainage improvements at Frontier Street in Northmoor.	$730,000
MoDOT	Rte D: Pavement resurfacing from NW LP Cookingham Drive to I-435 (NW Cookingham Drive).	$1,049,000
MoDOT	I-29: Install fencing along.	$1,253,000
MoDOT	Rte. N: Pavement Resurfacing from Rte. D to Rte. 152	$398,000

Table 26: Projects From TIP 2018–2022 Completed		
Lead Agency	**Project Name**	**Total Cost**
MoDOT	Rte. E:Pavement resurfacing from I-29 to Rte. B.	$442,000
MoDOT	Rt C: Pavement resurfacing from Rte. 92 to I-435.	$373,000
MoDOT	Rte. AA: Pavement resurfacing from I-29 to Rte. 69.	$105,000
MoDOT	MO 45: Remove islands and restripe Rte. 45 at Klamm Road and Rte. 45 at Riss Lake Drive.	$83,000
MoDOT	Railroad Crossing Safety Project	$250,000
MoDOT	Railroad Crossing Safety Project	$250,000
MoDOT	I-35; Bridge improvements at US 69 in the city of Liberty	$4,966,000
MoDOT	US 169: Auxilliary lanes	$998,000
MoDOT	Rte. C; Pavement Improvements including shoulder additions and edge line rumbles from Rte. 92 to the Clinton County Line	$3,767,000
MoDOT	I-29 Pavement Improvements	$3,101,000
MoDOT	Pavement improvements on US-169	$6,687,000
MoDOT	Bridge improvements along US-169	$9,884,000
MoDOT	Bridge rehabilitations on M-291	$7,591,000
MoDOT	Fencing improvements along I-35 in Liberty and Claycomo.	$300,000
MoDOT	Intersection improvements at 162nd Street and MO 33	$210,000
MoDOT	Bridge improvement on Rte. DD over Wilkerson Creek.	$2,335,000
MoDOT	Pavement improvements on US-69	$7,658,000
MoDOT	I-435: BRIDGE DECK REPLACEMENTAT THE MISSOURI RIVER	$32,140,000
MoDOT	MO-92: PROJECT TO ADD SIDEWALKS BETWEEN MO 33 AND MARIMAC DRIVE IN KEARNEY	$1,009,000
MoDOT	Rt. CC: Pavement resurfacing from Rt. C to Rt. 33.	$168,000
MoDOT	Rt. D: Pavement resurfacing from Rt. 69 to Ray County line	$70,000
MoDOT	Rt. E: Pavement resurfacing from 164th Street to MO 92.	$154,000
MoDOT	Rt. JJ: Pavement resurfacing from Rt. H to MO 210	$219,000
MoDOT	Rt. RA: Pavement resurfacing from 161st Street in Greenville to MO 92.	$56,000
MoDOT	Install Kansas City Scout ITS devices on various routes north of the Missouri River in Clay and Platte Counties.	$3,251,000
MoDOT	I-435; Pavement improvements from Raytown Road to Bannister Road	$11,581,000
MoDOT	I-49: Pavement Improvements from Blue Ridge Boulevard to 163rd Street	$4,408,000
MoDOT	I-70: Pavement Improvements from west of Sterling to the Rte. 291 northbound exit	$5,815,000
MoDOT	I-435; PAVEMENT RESURFACING FROM RTE. 78 TO RAYTOWN ROAD IN KANSAS CITY	$2,251,000

Table 26: Projects From TIP 2018–2022 Completed		
Lead Agency	**Project Name**	**Total Cost**
MoDOT	I-470: Pavement resurfacing from Raytown Road in Kansas City to 39th Street in Independence	$10,489,000
MoDOT	I-70: Pavement resurfacing from east of Blue Ridge Cutoff to Sterling Road in Kansas City.	$1,563,700
MoDOT	Douglas Road Bridge Improvements over I-470	$2,930,000
MoDOT	ITS Message Boards on I-470 and I-49	$472,000
MoDOT	Pavement improvements along US-50.	$6,748,000
MoDOT	Bridge improvements along I-70 in downtown Kansas City	$5,066,000
MoDOT	Bridge improvements along I-70 between Pittman Rd. and Phelps Rd.	$8,854,000
MoDOT	Pavement improvements along US-71	$6,571,000
MoDOT	Bridge improvements on Rt. F	$4,898,000
MoDOT	Intersection improvements on M-150 at Arborlake Dr. in Lee's Summit.	$391,000
MoDOT	Safety and intersection improvements on US-50 and Buckner-Tarsney Rd.	$580,000
MoDOT	Erosion control repairs near travel lane at bridge over Rock Creek. Project involves bridge B0259.	$565,000
MoDOT	MO-350: Slide repair on westbound ramp to 63rd Street.	$780,000
MoDOT	Rt. 40: Install trench drains and sidewalks	$253,000
MoDOT	MO 350; Slide repair	$802,000
MoDOT	I-70: Pavement mill and resurface from Manchester Trafficway to east of Blue Ridge Cutoff	$3,622,000
MoDOT	Rte. H: Pavement resurfacing from Rte. 24 to I-70.	$1,094,000
MoDOT	Rte. F: Pavement resurfacing from 31st Street to Rte. 50.	$1,153,000
MoDOT	I-435: Bridge rehabilitation at I-470 and I-49	$1,129,000
MoDOT	Rte. BB: Pavement resurfacing from Rte. 24 to Duncan Avenue.	$703,000
MoDOT	MO 7: Pavement resurfacing and guardrail replacement	$1,787,000
MoDOT	MO 7: Pavement resurfacing and guardrail replacement from Oak Haven Drive to the south intersection of Rte. 150.	$1,741,000
MoDOT	MO 58; Pavement and Sidewalk Improvements from Rte. D to Clint Drive	$3,516,000
MoDOT	I-49: Pavement Improvements from Rte. 7 to the Bates County Line	$7,538,000
MoDOT	Bridge improvements on I-49 in Cass County	$4,325,000
MoDOT	Route A bridge improvements	$1,380,000
MoDOT	Rt B., Bridge replacement over Lick Branch	$1,204,000
MoDOT	Bridge improvements over I-49 in Harrisonville	$1,076,000
MoDOT	Railroad Crossing Safety Project	$250,000

Table 26: Projects From TIP 2018–2022 Completed		
Lead Agency	**Project Name**	**Total Cost**
MoDOT	Various; JOC for repairs on various bridges at various locations in the urban Kansas City District	$1,639,000
MoDOT	Various; JOC for guard cable and guardrail repair in the urban Kansas City District	$3,683,000
MoDOT	Various; Various Job Order Contracting for asphalt pavement repair at various major route locations in the Kansas City District.	$542,000
MoDOT	Various; Job Order Contracting for concrete pavement repairs at various major route locations in the Kansas City District.	$544,000
MoDOT	Various; Job Order Contracting for Bridge Repairs at various locations in the urban Kansas City District.	$1,604,000
MoDOT	Various; On-call work zone enforcement at various locations in the urban Kansas City District.	$162,000
MoDOT	Various; ITS operations, staffing and equipment for the KC Scout Intelligent Transportation System at the Traffic Management Center (TMC) building.	$4,105,000
MoDOT	Various; Motorist Assist operations and staffing the urban Kansas City District.	$1,635,000
MoDOT	Install chevron signs at various locations in the Urban Kansas City district.	$129,000
MoDOT	Job Order Contracting for asphalt pavement repair	$1,005,000
MoDOT	Job Order Contracting for asphalt pavement repair	$1,005,000
MoDOT	Job Order Contracting for guard cable and guardrail repair.	$3,884,000
MoDOT	Job Order Contracting for lighting repair	$673,000
MoDOT	Job Order Contracting for lighting repair	$354,000
MoDOT	Job Order Contracting for lighting repair	$162,000
MoDOT	Emergency response operations and staffing in the urban Kansas City District	$1,635,000
MoDOT	Emergency response operations and staffing in the urban Kansas City District	$1,636,000
MoDOT	KC Scout Intelligent Transportation System	$4,105,000
MoDOT	Repairing of fencing in various locations in the Urban KC District	$112,000
MoDOT	Signal Communications	$234,000
MoDOT	Repairing of fencing in various locations in the Urban KC District	$114,000
MoDOT	Job Order Contracting for asphalt pavement repair	$555,000
MoDOT	Job Order Contracting for concrete pavement repair	$557,000
MoDOT	Pavement striping at various intersections throughout the urban Kansas City District	$811,000
MoDOT	Job Order Contract to grade around guardrail at various locations around the urban portion of the Kansas City District.	$1,089,000
MoDOT	VARIOUS; JOC FOR MICROSURFACE TREATMENTON VARIOUS ROUTES IN THE URBAN KANSAS CITY DISTRICT.	$114,000
MoDOT	VARIOUS; JOC FOR MICROSURFACE TREATMENTON VARIOUS ROUTES IN THE URBAN KANSAS CITY DISTRICT.	$167,000

Table 26: Projects From TIP 2018–2022 Completed		
Lead Agency	**Project Name**	**Total Cost**
MoDOT	VARIOUS; SIGNAL IMPROVEMENTS AT VARIOUS LOCATIONS WITHIN THE URBAN KANSAS CITY DISTRICT	$1,568,000
MoDOT	VARIOUS; PEDESTRIAN AND ADA TRANSITION PLAN IMPROVEMENTS IN VARIOUS LOCATIONS IN PLATTE AND CLAY COUNTIES	$1,197,000
MoDOT	Job Order Contracting for bridge repair at various locations in the Urban Kansas City district.	$1,716,000
MoDOT	I-70: Adding Wrong Way, Do Not Enter and One Way Signing at various ramp locations.	$496,000
MoDOT	Pavement resurfacing on various minor routes in the urban Kansas City District.	$3,643,000
MoDOT	Pavement resurfacing on minor routes in the urban Kansas City District.	$4,686,000
MoDOT	Job Order Contracting for concrete pavement repair at various interstate locations in the urban Kansas City District.	$1,075,000
MoDOT	Job Order Contracting for asphalt pavement repair at various interstate locations in the urban Kansas City District.	$1,075,000
MoDOT	Safety projects at various locations in the urban Kansas City District	$2,375,000
MoDOT	Sign and truss replacement at various locations in the urban Kansas City District.	$1,299,000
MoDOT	5311 - Operating assistance for rural public transportation	$768,000
MoDOT	State Transit Operating Assistance	$659,000
MoDOT	State Transit Operating Assistance	$135,400
MoDOT	State Transit Operating Assistance	$33,400
MoDOT	State Transit Operating Assistance	$4,000
MoDOT	Section 5339 - Statewide Allocation	$250,000
MoDOT	Section 5339 - Statewide Allocation	$985,600
Oak Grove	Oak Grove Salem Street Improvements	$151,802
Olathe	Olathe 2015-2018 Emissions Reduction Initiative	$1,000,000
Olathe	Santa Fe & Black Bob Intersection Improvements	$365,000
Olathe	119th & Black Bob Intersection Improvements	$300,000
Olathe	Olathe Safe Routes to School	$700,200
Olathe	151st and Scarborough	$4,610,000
Olathe	2019-2020 Fleet Emission Reduction: CNG Replacement	$378,500
Olathe	143rd, Pflumm to Quivira	$8,085,000
Overland Park	Quivira Road, 151st Street to 159th Street	$9,510,000
Unified Government of Wyandotte County/Kansas City	Route 107 Bus Stop/Station Improvements	$1,420,000
Unified Government of Wyandotte County/Kansas City	Central Ave and 18th Street Intersection	$1,046,483
Unified Government of Wyandotte County/Kansas City	Safe Routes KCK Phase E: Edison, White & Noble Prentis	$1,230,285
Unified Government of Wyandotte County/Kansas City	Leavenworth Road Modernization, 63rd to 38th (K-5)	$13,446,720

Table 27: Projects From TIP 2016–2020 Under construction/in progress		
Lead Agency	**Project Name**	**Total Cost**
Gladstone	Shoal Creek Trail - Segment 4	$1,093,750
Gladstone	Old Pike Road Improvements - Vivion Road to NW Englewood	$1,805,545
Jackson County	Rock Island Corridor (KATY Connection) Acquisition, Phase I Implementation and Construction Project	$11,068,366
Kansas City, MO	I-29/Route 45 Interchange	$7,600,000
Kansas City, MO	Englewood Road Complete Street Upgrade and Reconstruction	$12,500,000
Kansas City, MO	Old Tiffany Springs Road Bridge over I-29 Reconstruction	$11,200,000
KDOT	Bridge #026 on K-92 in Leavenworth County	$407,400
KDOT	US-69: Bridge #099, 5.12 miles north of the Johnson/Miami County Line (Blue River)	$3,853,500
KDOT	I-435: From 0.5 miles east of the I-435/Quivira Rd. junction, east to the I-435 bridges over Metcalf Ave.	$18,489,000
KDOT	US-56: Beginning 0.17 Miles East of Metcalf to 0.25 Miles East of Roe Avenue	$1,520,400
KDOT	I-435 Johnson County: Approximately 0.6 Miles South of Johnson/Wyandotte County Line North to Johnson/ Wyandotte County Line. I-435 Wyandotte County: Johnson/ Wyandotte County Line thence North to South Junction K-5/I-435.	$1,499,200
KDOT	I-435: Ramps at 95th Street	$1,051,000
KDOT	Bridge #325 Located 1.5 Miles South West of the Johnson County Line	$227,600
KDOT	I-435 in Johnson County Guardrail Upgrades	$61,000
KDOT	I-35: Beginning at 135th Street thence North to 0.5 Miles North of 95th Street Bridge	$10,973,600
KDOT	K-10: Beginning at the Douglas/Johnson County Line thence East to Junction K-7/K-10 (including ramps)	$6,639,700
KDOT	US-69: Overland Park-Beginning at 167th Street thence North to 151st Street (plus ramps from 199th Street to College Street)	$1,098,300
KDOT	US-69: Beginning 1.381 Miles South of 119th Street (Blue Valley Split) thence North to Junction I-435/US-69	$2,549,100
KDOT	Overhead sign structure (serial # 046S0134 at reference point 217) over southbound I-35 at ramp to old US-56	$76,100
KDOT	KC Scout Camera and Communication Device Replacement	$1,100,000
Lansing	DeSoto Road from Ida Street to Eisenhower Road	$9,543,441
Lenexa	Lackman Mixed-Use Trail	$0

Table 27: Projects From TIP 2016–2020 Under construction/in progress		
MoDOT	Kansas Street: Pavement resurfacing, sidewalks, curb and gutter and traffic signal improvements between I-35 and Rte. 291 in Liberty	$7,534,000
MoDOT	MO 152: Bridge, interchange and upgrading sidewalks to ADA Transition Plan compliance over I-35 in Liberty. Project involves bridge A0495.	$16,153,000
MoDOT	INTERSECTION IMPROVEMENTS AT M-291 AND KANSAS STREET IN LIBERTY	$3,900,000
MoDOT	US 169: Auxilliary lanes	$1,288,000
MoDOT	US-71; Pavement improvements from I-670 to Swope Parkway within Kansas City	$1,997,000
MoDOT	I-435 Interchange Improvements	$46,218,000
MoDOT	US 24: Bridge replacement over Delaware Avenue/Truman Library Drive 3.6 miles east of I-435 near Independence.	$3,762,000
MoDOT	Routes 58 and Y Intersection Improvements	$617,000
MoDOT	MO 18: PAVEMENT IMPROVEMENTS FROM RTE. A TO 355TH STREET	$583,000
MoDOT	Rt. A: Pavement resurfacing from Rte. 18 to Rte. B.	$838,000
MoDOT	Rt. D: Pavement resurfacing from Rte. Y to Rte. A.	$1,346,000
MoDOT	Rt. E: Pavement resurfacing from MO 58 to the Jackson County Line.	$506,000
MoDOT	Rt. F: Pavement resurfacing from Old Rte. 7 to Rte. B	$287,000
MoDOT	Rt. N: Pavement resurfacing from Rte. Z to Henry County Line.	$329,000
MoDOT	Rt. O: Pavement resurfacing from Rte. 2 to Rte. A.	$456,000
MoDOT	Rt. Y: Pavement resurfacing from Rte. YY to Kansas State Line	$992,000
Olathe	K-7 (Parker St), Dennis to Santa Fe Turn Lane Additions	$7,650,000
Overland Park	Metcalf Avenue, 159th Street to 167th Street	$17,005,000
Overland Park	Downtown OP Bike/Ped Improvements	$313,500
Pleasant Hill	Country Club Collector Project	$1,790,676

Table 28: Projects From TIP 2016–2020 Cancelled		
Lead Agency	**Project Name**	**Total Cost**
Belton	Bel-Ray Connector Trail	$752,500
Edgerton	207th Grade Separation	$17,000,000
Kansas City, MO	Vivion Rd Trail (Phase 3)	$370,000
Kansas City, MO	Big Shoal Trail Segment 2 (Combined with segment 1)	$607,000
Kansas City, MO	Big Shoal Trail Segment 3 (Combined with segment 1)	$1,123,000
Kansas City, MO	Red Bridge Road - Jackson to Grandview Road	$9,000,000
Kansas City, MO	Red Bridge Road - Montgall to Jackson	$7,200,000
KDOT	207th St Reconstruction, Homestead Ln to Waverly Rd	$11,800,000
Platte City	Interchange and Corridor Improvements at Route 92 - Platte City MoDOT Job #J4I3200 (Duplicate entry)	$8,717,000
Riverside	Route 9 & Mattox Intersection Improvements (Duplicate entry)	$889,450

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