



**OPEN MEETING NOTICE**  
**TOTAL TRANSPORTATION POLICY COMMITTEE**

Chuck Adams, Kansas Co-Chair

Carson Ross, Missouri Co-Chair

There will be a meeting of MARC's Total Transportation Policy Committee on **Tuesday, November 20, 2018, at 9:30 a.m. in the Board Room on the second floor** of the Rivergate Center, 600 Broadway, Kansas City, Missouri.

**A G E N D A**

1. Welcome/Introductions
2. *VOTE: October 16, 2018 Minutes\**
3. *VOTE: Proposed 2019 Unified Planning Work Program\**
4. REPORT: 2018 Ozone Season/Green Commute Challenge Update
5. REPORT: Autonomous Vehicle Policy Scrum Overview
6. REPORT: Regional Transportation Plan 2050 (RTP2050) Update
7. REPORT: 2018 Transportation Performance Measures Update
8. REPORT: Household Travel Survey Update
9. Other Business
10. Adjournment

**\*Action Items**

**Getting to MARC:** Information on transportation options to the MARC offices, including directions, parking, transit, carpooling, and bicycling, can be found [online](#). If driving, visitors and guests should enter the Rivergate Center parking lot from Broadway and park on the upper level of the garage. An entrance directly into the conference area is available from this level.

**Parking:** Free parking is available when visiting MARC. Visitors and guests should park on the upper level of the garage. To enter this level from Broadway, turn west into the Rivergate Center parking lot. Please use any of the available spaces on the upper level at the top of the ramp.

**Special Accommodations:** Please notify MARC at (816) 474-4240 at least 48 hours in advance if you require special accommodations to attend this meeting (i.e., qualified interpreter, large print, reader, hearing assistance). MARC programs are non-discriminatory as stated by Title VI of the Civil Rights Act of 1964. For more information or to obtain a Title VI Complaint Form, call 816-474-4240 or visit our [webpage](#).

**Total Transportation Policy Committee**  
**October 16, 2018**  
***Meeting Summary***

**Members, Alternates Present-Representing**

Mayor Carson Ross, Jackson County Municipalities,  
MO Co-Chair  
Mike Brungardt, Johnson County Municipalities  
Darren Hennen, Northland Chamber of Commerce  
Damon Hodges, Jackson County Municipalities  
Tony Hofmann, City of Overland Park  
Dick Jarrold, KCATA  
Mike Krass, Cass County  
Nathan Law, Miami County Municipalities  
Michael McDonald, Leavenworth County Municip.  
Mark McHenry, City of Kansas City  
Janet McRae, Miami County  
Jack Messer, City of Overland Park  
Jerry Nolte, Clay County  
Josh Powers, Johnson County  
Eric Rogers, BikeWalk KC  
Fred Sherman, Johnson County Municipalities  
Kite Singleton, Regional Transit Alliance  
Mayor David Slater, Clay County Municipalities  
Mayor John Smedley, Platte County Municipalities  
Tim Vandall, Leavenworth County Municipalities  
Doug Whitacre, Johnson County Municipalities  
Beth Wright, City of Olathe

**Others Present**

Dave Kocour, Hg Consult, Inc.  
Michael Landvik, MoDOT  
Darby Logan, Platte County  
Ken Miller, City of Lansing  
Christine Murray, KC Chamber of Commerce  
David Nolte, BHC Rhodes  
Sean Partain, MoDOT  
Greg Rokos, City of Raymore  
Sarah Shafer, Leavenworth County  
Allison Smith, KDOT  
Jim Tobaben, WSP USA  
Jim Townsend, Wilson & Co.

**MARC Staff Present**

Ron Achelpohl, Director of Transp. and Environment  
Aaron Bartlett, Senior Transportation Planner  
Karen Clawson, Senior Transportation Planner  
Beth Dawson, Senior Land Use Planner  
Amanda Graor, Chief Innovation Officer  
Marc Hansen, Principal Planner  
Jim Hubbell, Principal Planner  
Martin Rivarola, Assistant Director of Transportation  
Land Use Planning  
Drew Stiehl, Transportation Planner I  
Amy Strange, Public Affairs Coordinator II  
Jermain Whitmore, Program Assistant

### **1) Welcome/Introductions**

Mayor Carson Ross, MO Co-Chair, called the meeting to order and self-introductions followed.

### **2) Approval of September 18, 2018 Meeting Summary\***

There were no changes to the September 18, 2018 meeting summary. Mayor David Slater moved to approve the meeting summary, Mayor John Smedley seconded and the motion carried unanimously.

### **3) 2018 4th Quarter Amendment to the 2018-22 Transportation Improvement Program\***

One The *Transportation Improvement Program (TIP)* is the region's short-range program, identifying projects to receive federal funds and projects of regional significance to be implemented over the next three to five year period. MARC amends the *TIP* on a quarterly cycle to accommodate changes to projects in the *TIP*.

The proposed 2018 4<sup>th</sup> Quarter Amendment to the 2018-22 *TIP* included 77 projects:

- 64 new projects to be added, including, but not limited to:
  - Kansas and Missouri projects recommended for 2021-22 Surface Transportation Program (STP) funding
  - Kansas and Missouri projects recommended for 2021-22 Congestion Mitigation/Air Quality Program (CMAQ) funding
  - Kansas and Missouri projects recommended for 2021-22 Transportation Alternatives Program (TAP) funding
  - FTA Section 5310 funding recommendations
- 13 modified projects
  - Scope
  - Schedule
  - Budget

Details of these projects are available for review on the Internet at:

<http://www.marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/TIP/TIP-Amendment-Archive/Archive-assets/18Q4amend.aspx>

MARC's Public Involvement Plan requires that proposed amendments to the *TIP* be released for public review and comment prior to adoption. No comments from the public were received.

Funding recommendations were developed by the Active Transportation Programming Committee, Air Quality Forum, Kansas and Missouri STP Priorities Committees, Mobility Advisory Committee and the Regional Transit Coordinating Council.

Additional input for the programming process was provided by the Bicycle/Pedestrian Advisory Committee, Destination SAFE Leadership Team, Goods Movement Committee, Highway Committee, Regional Transit Coordinating Council, and the Sustainable Places Policy Committee.

The Air Quality Forum, TTPC and the MARC Board of Directors reviewed the proposed funding recommendations for the Surface Transportation, Congestion Mitigation/Air Quality and Transportation Alternatives programs at their August meetings.

Mark McHenry moved to *approve 2018 4th Quarter Amendment to the FFY 2018-2022 TIP*, Mayor Smedley seconded and the motion carried unanimously.

#### **4) *Proposed 2019 Unified Planning Work Program for Public Review & Comment\****

The Unified Planning Work Program (UPWP) 1) describes the transportation planning activities MARC and other agencies will undertake during the year; 2) documents the proposed expenditures of federal, state and local funds in support of applications for various planning grants; and 3) provides a management tool for MARC and the funding agencies in scheduling major transportation planning activities, milestones and products. A draft of the 2019 UPWP is available at:

[http://marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/Unified-Planning-Work-Program/UPWP-assets/Draft\\_2019UPWP\\_Oct2018.aspx](http://marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/Unified-Planning-Work-Program/UPWP-assets/Draft_2019UPWP_Oct2018.aspx)

Major Transportation Planning Initiatives proposed for 2019 include:

- Respond to the FAST Act – Tasks 1.1, 2.2, 3.9, 4.1, and 5.5
- DBE and Title VI program triennial updates – Task 1.1
- Creating/Planning Sustainable Places – Task 2.1
- Update of the Metropolitan Transportation Plan – Task 2.2
- Performance Measures and Targets – Tasks 2.2, 3.9, 4.1
- Regional Household Travel Survey Completion – Task 3.10
- Development of the 2020-24 Transportation Improvement Program – Task 4.1
- Smart Moves Implementation – Task 5.1, 5.2
- Prospect Bus Rapid Transit (BRT) Implementation – Task 5.2
- Independence Avenue Bus Rapid Transit (BRT) Project Development – Task 5.3
- Environmental Assessment ) for U.S. 169 Corridor from I-70 and I-35 to MO 9, Including the Buck O’Neil Bridge over the Missouri River – Task 5.7

The Draft 2019 UPWP has been developed based on funding levels resulting from the passage of FAST Act and the 2010 Census counts for urbanized area populations in Kansas and Missouri.

MARC hosted a conference call on August 30, 2018 with its planning partners to coordinate development of the 2019 UPWP. An initial version of the 2019 UPWP was circulated among the planning partners for comment in September 2018.

Mayor Slater moved to *approve the release of the proposed 2019 Unified Planning Work Program for Public Review & Comment*, Mayor Smedley seconded and the motion carried unanimously.

#### **5) *Changes to the MARC Roadway Functional Classification System\****

The Functional classification is the process by which roadways are categorized into classes, or systems, according to the type of service they are intended to provide. This system for roadway classification was developed by the Federal Highway Administration (FHWA), and has implications for the eligibility of a roadway to receive federal transportation funding. In addition to funding eligibility, the functional classification is used for the purposes of including planning, analysis, performance reporting and travel modeling.

Periodically, MARC works with local jurisdictions and the State DOTs to review and recommend changes to the FHWA functional classification system. The tables included with this report contain a list of recommended changes. All changes comply with federal criteria and guidelines for roadway functional classification. The functional classification system is used to determine eligibility for roadways in the region to receive federal transportation funding. Eligible roadways make up what is referred to as the Federal Aid Systems. It is not used to prioritize funding or assign points during the project scoring and selection process.

The proposed changes to the functional classification system were reviewed and approved by the MARC Highway Committee on September 26, 2018. The changes will ultimately need to be approved by the MARC Board of Directors.

Jack Messer moved to *approve* the changes to the functional classification system, Beth Wright seconded and the motion carried unanimously.

**6) *Endorse Regional Frameworks for Autonomous Vehicles (AV) and Unmanned Aircraft Systems (UAS)\****

The Endorse Regional Frameworks for Autonomous Vehicles (AV) and Unmanned Aircraft Systems (UAS) Emerging transportation technologies such as autonomous and connected vehicles are receiving a great deal of attention as public agencies and officials grapple with how to plan for their evolution and adoption. However, there's another transportation technology that has "taken off" tremendously in the last few years: drones. Also referred to as unmanned aerial systems (UAS), these remotely piloted aircraft are experiencing incredible growth both in terms of units sold and the uses to which they can be put. Governments, businesses, and private individuals alike are all getting into the game.

In June 2017, the Mid-America Regional Council launched a regional effort to examine AV/CV issues and create a policy framework that will help the region position itself to maximize opportunities and minimize negative impacts of these new and potentially disruptive transportation technologies. MARC formed an AV Task Force and convened a broad group of stakeholders, including seven work groups that each focused on a key policy area outlined in the whitepaper, which can be found here: <http://marc.org/Transportation/Plans-Studies/pdfs/Driving-Change-AV-White-Paper.aspx>

During the months of May, June and July 2018, MARC staff also worked with a UAS Leadership Team comprising a broad cross-section of regional stakeholders to develop a strategic approach to implementing UAS technologies within the Greater Kansas City region. Over the course of 3 engagements, the Leadership Team collaboratively built out an UAS Strategic Framework, which includes a vision, values and principles, and action steps for implementation. The Framework is primarily focused on activities to be undertaken within the public sector to ensure safe and successful UAS implementation.

Summaries of both regional frameworks are attached.

**UAS Strategic Framework:** The Regional UAS Strategic Framework is intended to serve as a resource for MARC staff, its member organizations and regional partners. Its development involved a diverse stakeholder involvement process, and the framework will guide strategic implementation of UAS technologies within the region.

**Autonomous Vehicle Policy Framework:** MARC encourages state policies that enable and encourage autonomous and connected vehicles to be deployed in a safe, efficient and effective manner that promotes local innovation, decision-making and public-private partnerships.

The Total Transportation Policy Committee endorsed the AV and UAS frameworks on October 16, 2018.

A committee member asked how does one control the drone and how do you go about enforcing laws. Mr. Hubbell responded that they are still controlled by a human operator who must maintain line of sight contact. In some cases, there are airspace restrictions built into their systems as well. While all airspace operations are regulated by FAA, FAA is not a law enforcement agency. The FBI has been involved in some cases involving national security.

Another committee member suggested having some form of license plate to ID drones, possibly digital, in order to better enforce laws.

There was inquiry into what having an endorsed framework means, and Ms. Graor replied that early policy guidance will help us get ahead of the work and technology that will follow; as there isn't much guidance at the moment. This will help with updates to transportation plans, legislative agendas, and other corresponding work.

There was inquiry into if MARC will use the USDOT definition of good and poor to determine the NHS condition measures and targets, and Mr. Hubbell acknowledged that MARC would, and will provide the definitions to local agencies.

Dick Jarrold moved to *approve the* endorsement of the AV and UAS regional frameworks, Mayor Smedley seconded and the motion carried unanimously.

## **7) KC Regional Transportation Data Pilot – Sidewalk Labs “Replica” Model**

In fall 2017, MARC entered an agreement with Sidewalk Labs and regional partners to develop and test an unprecedented transportation data analysis tool for the greater Kansas City region. The transportation data tool being developed for the Kansas City region is called “Replica,” and the primary goal of the tool is to help local public agencies better understand how people travel within a particular region. In addition to MARC, this 1-year pilot project involves KCATA, KC Streetcar, BikeWalk KC, and the cities of Overland Park, Olathe and Kansas City, MO.

Using a wide variety of data from both public and private sources, Sidewalk Labs has developed a model (Replica) that “replicates” travel within the Kansas City region for a typical day in a particular quarter (3-month period) in 2018. Recently, Sidewalk Labs completed and documented efforts to validate and calibrate Replica using real-world data and professional judgement. MARC staff will share a brief update on the status of the project, share examples of use cases, and invite questions and discussion from meeting attendees.

MARC's transportation planning work requires large amounts of regional data regarding household travel patterns, origins and destinations, mode share, system speeds and other information in order to calibrate travel demand models, identify transportation needs and support development of regional plans and programs. MARC and its regional partners are in constant pursuit of better data and tools to use in support of performance based planning and programming. Sidewalk Labs' Replica, and products like it, have the potential to drive better decisions that ultimately lead to improved transportation outcomes.

A committee member questioned if it is possible to get motorized and pedestrian data, and Mr. Hubbell answered that it is possible, and can even get data on things like Uber & Lyft.

## **8) Regional Transportation Plan 2050 (RTP2050)**

Martin Rivarola reported on progress to date and provided an overview on future steps. The Mid-America Regional Council (MARC) is responsible for developing and maintaining a metropolitan transportation plan (MTP) to guide federal investments and serve as a blueprint for managing the region's transportation system. **Transportation Outlook 2040**, the current MTP, was adopted in 2015 and the next plan will be due by June of 2020.

MARC is now working to develop the regional transportation plan for 2050, “RTP2050”. The first completed initial steps in this process have been:

- Development of [RTP2050 “road map”](#),
- Support towards MARC Board adoption of revised “[regional vision statement](#)” to guide future integrated planning work (including transportation and other issue areas),
- Identification of transportation needs through “[Needs Assessment](#)” process
- Adoption of [Interim Policy Framework](#) to guide future steps in development of RTP2050,
- [Public Engagement efforts](#), including development of “story-telling” online platform, including:
  - a. [RTP2050 Chapter 1 - Overview](#)
  - b. [RTP2050 Chapter 2 – Needs Assessment](#)

- Completion of [transportation model sensitivity testing/scenario analysis](#) (slides 10-36), in which initial transportation “investment packages” and land use (population/employment) growth scenarios were tested for performance in various metrics.

Upcoming steps in the RTP2050 development process will include:

- Development of “Story Map Chapter 3” - Scenario Analysis report,
- Ongoing targeted engagement efforts, online engagement, focus groups & MARC committee outreach.
- RTP Project Selection – The RTP must include financially constrained regionally significant projects. MARC will be deploying a process to develop this listing of projects over various months in 2019. (“RTP Project Selection Methodology Proposal” attached)

For more information, please see: [www.marc.org/2050](http://www.marc.org/2050)

The plan identifies needs and budget federal transportation funds that the metro area expects to receive over the next three decades. Currently, TO2040 contains:

- **Vision:** a long-term vision for the region’s transportation system.
- **Goals and strategies:** what we want to achieve by the year 2040 and how we plan to do it.
- **Transportation projects:** major regional transportation investments to help accomplish goals.

Once adopted, updated policies/goals and strategies identified in the MTP will guide transportation investments in our region in future years.

Sustainable Places Policy Committee, Air Quality Forum, Regional Transit Coordinating Council, Highway, Bicycle Pedestrian Advisory Committee, Aviation, Goods Movement, Technical Forecast Committee, and the MARC Board of Directors have all participated in prior discussions to support this work.

There was a question about how MARC will make sure there won’t be any bias against smaller jurisdictions during the project selection process, and Mr. Rivarola commented that will be a consideration as the scoring criteria are developed.

## 9) Electric Scooters

Dockless mobility devices, such as e-scooters and dockless bikeshare devices, are being introduced across the country. These new mobility options raise important questions about transportation planning, land-use planning, and how best to respond to rapid and disruptive mobility innovations within various regulatory frameworks.

It was asked that once the initial novelty of the trend goes away, will people buy their own scooters; and Mr. Stiehl remarked that is hard to predict but is likely to depend on their durability, cost and popularity.

## 10) Other Business

- Mr. Achelpohl announced that Amanda Graor is being promoted to Chief Innovations Officer and will be working in the Research department; while Jim Hubbell has accepted a position with Streetlight data, and will be leaving MARC.
- Mr. Achelpohl reminded everyone of the MoDOT meeting regarding Prop. D on October 30, 2018

## 11) Adjournment

With no further business the meeting was adjourned. The next meeting of TTPC will be held November 20, 2018.

## TTPC AGENDA REPORT

November 2018  
Item No. 3

### ISSUE:

VOTE: Proposed 2019 Unified Planning Work Program\*

### BACKGROUND:

The Unified Planning Work Program (UPWP) 1) describes the transportation planning activities MARC and other agencies will undertake during the year; 2) documents the proposed expenditures of federal, state and local funds in support of applications for various planning grants; and 3) provides a management tool for MARC and the funding agencies in scheduling major transportation planning activities, milestones and products. A draft of the 2019 UPWP is available at:

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Major Transportation Planning Initiatives proposed for 2019 include:

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- Update of the Metropolitan Transportation Plan - Task 2.2
- Performance Measures and Targets - Tasks 2.2, 3.9, 4.1
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- Environmental Assessment ) for U.S. 169 Corridor from I-70 and I-35 to MO 9, Including the Buck O'Neil Bridge over the Missouri River - Task 5.7

### BUDGET CONSIDERATIONS

The Draft 2019 UPWP has been developed based on funding levels resulting from the passage of FAST Act and the 2010 Census counts for urbanized area populations in Kansas and Missouri.

### COMMITTEE ACTION

MARC hosted a conference call on August 30, 2018 with its planning partners to coordinate development of the 2019 UPWP. An initial version of the 2019 UPWP was circulated among the planning partners for comment in September 2018.



TTPC authorized the release of the draft 2019 UPWP for public review and comment at their October 16, 2018 meeting. No comments were received during the public comment period.

**RECOMMENDATION**

Approve the 2019 Unified Planning Work Program.

**STAFF CONTACT**

Marc Hansen

## **TTPC AGENDA REPORT**

November 2018  
Item No. 4

### **ISSUE:**

REPORT: 2018 Ozone Season/Green Commute Challenge Update

### **BACKGROUND:**

The 2018 Ozone Season will ended October 31. Based on preliminary monitor values, the Kansas City region's 3-year average ground-level ozone concentration is 70 parts per billion (ppb). The 2015 National Ambient Air Quality Standard (NAAQS) for ozone pollution is 70ppb, meaning the region is very close to not meeting the national health-based standard at this time.

Air quality staff will also provide a summary of the 2018 Green Commute Challenge and other issues currently being monitored for the region.

### **BUDGET CONSIDERATIONS**

None.

### **RECOMMENDATION**

None. Information only.

### **STAFF CONTACT**

Amanda Graor  
Karen Clawson

## TTPC AGENDA REPORT

November 2018  
Item No. 5

### ISSUE:

REPORT: Autonomous Vehicle Policy Scrum Overview

### BACKGROUND:

In October, MARC hosted professors and students from the Harvard Kennedy School to facilitate an Autonomous Vehicle Policy Scrum. "The goal of the AV Policy Scrum sessions is to develop innovative and actionable policy approaches to AV technology implementation. The AV Policy Scrums serve as hackathons or design sprints for the various facets of AV policy." The Kansas City region was the third host of these sessions, following events held in Boston and Toronto.

The questions being asked of participants specific to the Kansas City region were:

- What infrastructure will AV fleet operators expect, how will the public earn a return on those investments and what new public value opportunities will AVs bring to the region?
- What are the necessary information flows between AV fleet operators as well as with the public sector to ensure safe, reliable and equitable operations as well as support other public interests?
- What regulatory framework best support AV fleet operations on a regional basis?

MARC staff will provide an overview of the sessions and the outputs recommended by participants during the scrum.

### BUDGET CONSIDERATIONS

None.

### RECOMMENDATION

None. Information only.

### STAFF CONTACT

Amanda Graor  
Ron Achelpohl

## TTPC AGENDA REPORT

November 2018  
Item No. 6

### ISSUE:

REPORT: Regional Transportation Plan 2050 (RTP2050) Update

### BACKGROUND:

The Mid-America Regional Council (MARC) is responsible for developing and maintaining a metropolitan transportation plan (MTP) to guide federal investments and serve as a blueprint for managing the region's transportation system. Transportation Outlook 2040, the current MTP, was adopted in 2015 and the next plan will be due by June of 2020.

MARC is now working to develop the regional transportation plan for 2050, "RTP2050".

The RTP must include financially constrained regionally significant projects. As a major next step towards completion of RTP2050, MARC will be deploying a process to develop this listing of projects over various months in 2019. At the upcoming TTPC meeting, MARC Staff will further report on upcoming future steps, which include:

#### November 2018

Issue notice of 2019 RTP project selection process to agencies which sponsored TO2040 projects. Projects included in current TO2040 will be asked to be resubmitted with updated project information (scope, cost, funding mechanisms, etc.) for reconsideration.

#### December 2018 /January 2019:

MARC staff will work with Committees/stakeholders to reach consensus on appropriate solutions for regional needs.

- Develop initial MARC generated project list. Develop Project Costing process. Individually consult with system owner/sponsors regarding MARC generated project list prior to public release of list.
- Develop Project Scoring Criteria for "Call for Projects".
- Present to Steering Workgroup/TTPC/Board to seek concurrence.

#### February:

- Launch "Request for comments/Call for Projects".

Other ongoing upcoming steps in the RTP2050 development process will also include:

- Development of "Story Map Chapter 3" - Scenario Analysis report,
- Ongoing targeted engagement efforts, online engagement, focus groups & MARC committee outreach.
- For more information, please see: [www.marc.org/2050](http://www.marc.org/2050)

## **POLICY CONSIDERATIONS**

The plan identifies needs and budget federal transportation funds that the metro area expects to receive over the next three decades. Currently, TO2040 contains:

- Vision: a long-term vision for the region's transportation system.
- Goals and strategies: what we want to achieve by the year 2040 and how we plan to do it.
- Transportation projects: major regional transportation investments to help accomplish goals.

Once adopted, updated policies/goals and strategies identified in the MTP will guide transportation investments in our region in future years.

## **COMMITTEE ACTION**

Sustainable Places Policy Committee, Air Quality Forum, Regional Transit Coordinating Council, Highway, Bicycle Pedestrian Advisory Committee, Aviation, Goods Movement, Technical Forecast Committee, and the MARC Board of Directors have all participated in prior discussions to support this work.

## **RECOMMENDATION**

None. Information Only.

## **STAFF CONTACT**

Martin Rivarola  
Ron Achelpohl

## **TTPC AGENDA REPORT**

November 2018  
Item No. 7

### **ISSUE:**

REPORT: 2018 Transportation Performance Measures Update

### **BACKGROUND:**

In support of a performance-based planning process, Regional Transportation Plan 2050 includes a set of regional performance measures related to the vision and goals defined in the plan's Policy Framework. Since 2010, MARC has produced an annual Performance Measures Report to monitor trends and help MARC and regional transportation stakeholders to better understand and evaluate progress towards achieving the plan goals.

In 2018, many of the FAST ACT Performance Measure Targets have been finalized and have been incorporated into the report. MARC staff has been working with regional stakeholders and both DOTs to obtain the necessary data to update the federal measures to reflect their new calculation processes and new measures. MARC staff has also worked with local stakeholders and both DOTs in the development of targets for all required measures.

With each update to the performance measures report, MARC staff produces two documents: a Performance Measures Snapshot, and a Performance Measures Report. The Snapshot provides a brief summary of how each measure has changed since the last update. The Report goes into more depth and detail, providing a description of each measure, visualization of long-term performance, and interpretation of trends. A copy of the 2018 Snapshot is attached.

MARC staff will introduce the 2018 Transportation Performance Measures update, highlighting a selection of key findings and trends.

### **POLICY CONSIDERATIONS**

The annual Performance Measures Report provides an update on the region's progress towards achieving the goals and objectives in Transportation Outlook 2040. The information is provided to be considered by TTPC and other MARC committees in the context of regional transportation policies and priorities.

### **COMMITTEE ACTION**

Targets for Safety, Transit State of Good Repair, National Highway System (NHS) Bridge and Pavement Condition, and NHS Reliability measures have been adopted by TTPC.

### **RECOMMENDATION**

None. Information only

**STAFF CONTACT**  
Ron Achelpohl



# **2018 Transportation Performance Measures Update**

Mid-America Regional Council  
Transportation and Environment





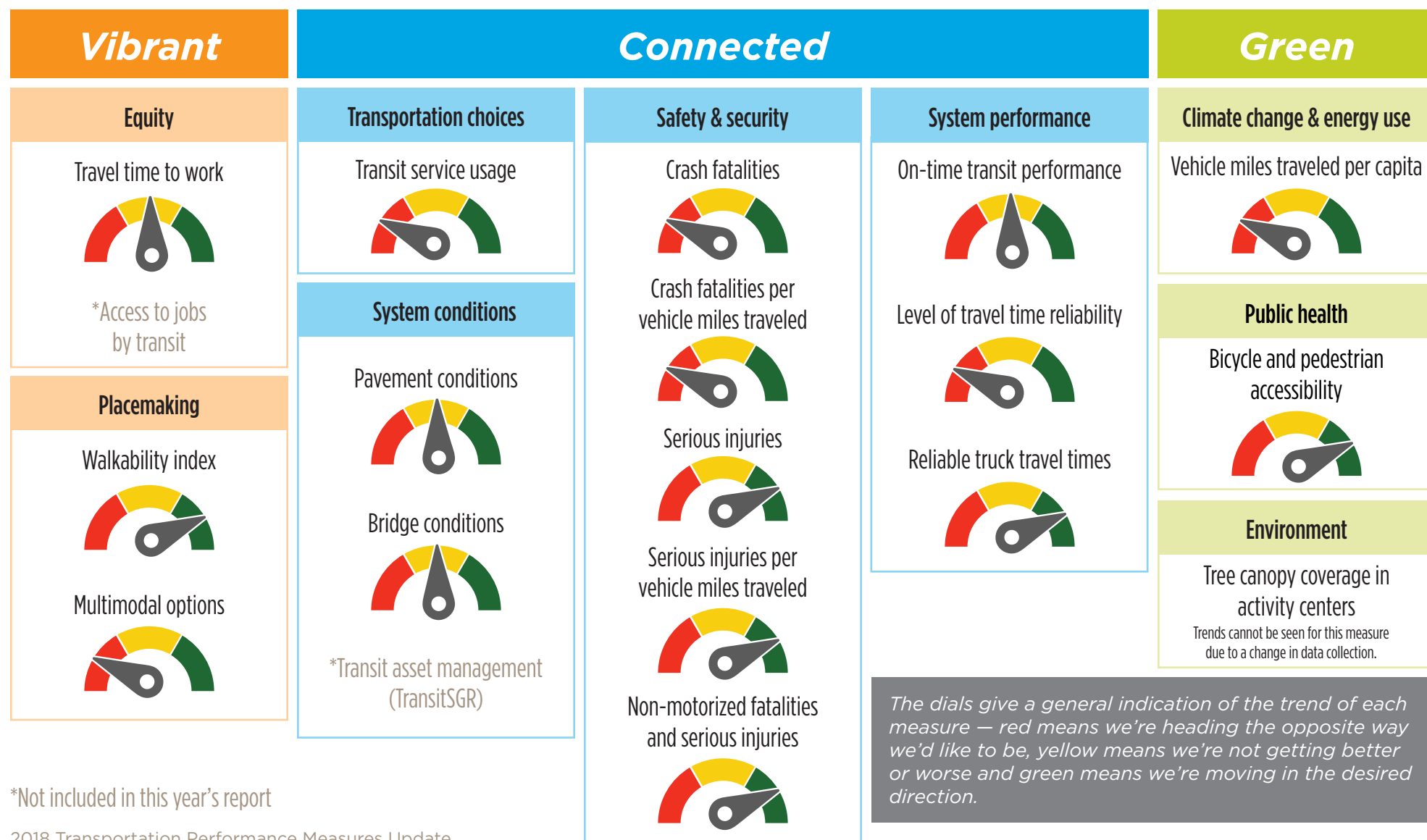
**T**ransportation Outlook 2040 (TO 2040) is the metropolitan transportation plan for the bistate Kansas City region. It provides a policy framework for the investment of anticipated federal, state and local funds based on anticipated needs and regional goals and objectives through the year 2040. Based on these goals, MARC developed a series of

performance measures to monitor trends and track progress toward desired outcomes.

This report provides historical data for selected performance measures. The document is organized according to goals in the TO 2040 policy framework, which is based on a shared vision of a more vibrant, connected and green region. In general, performance measures are

calculated based on data for the eight-county MARC transportation planning boundary.

Each performance measure corresponds to at least one goal in the TO 2040 policy framework, as depicted in the figure below. Some measures are cross-cutting and may be applicable to more than one goal.



\*Not included in this year's report

# Performance measures development

## Regional performance measures

In 2015, MARC committees responsible for regional transportation planning agreed on a set of performance measures based on best practices research. MARC staff developed a list of candidate measures, which were evaluated according to several criteria including data availability, transportation nexus, the ability to forecast, scalability, and realistic potential to be influenced by transportation planning and programming.

### Performance-based planning

Performance-based planning and programming (PBPP) refers to the application of performance management principles within the planning and programming processes of transportation agencies to achieve desired performance outcomes for the multimodal transportation system.

PBPP attempts to ensure that transportation investment decisions are made — both in long-term and short-term planning — based on their ability to meet established goals for improving the overall transportation system. Furthermore, it involves measuring progress toward meeting goals and using information on past and anticipated future performance trends to inform investment decisions.

## Federal performance management requirements

The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, incorporated performance management requirements intended to transform the federal-aid highway program and encourage the most efficient investment of federal transportation funds. MAP-21 aimed to:

- Refocus on national transportation goals.
- Increase the accountability and transparency of the federal-aid highway program.
- Improve project decision-making through performance-based planning and programming.

In 2015, Congress passed the Fixing America's Surface Transportation (FAST) Act into law. The FAST Act continues MAP-21's overall performance management approach and seeks to establish a series of performance measures related to national transportation goals of safety, infrastructure condition and system performance.

The U.S. Department of Transportation is charged with developing these performance measures through a federal rule-making process that solicits and incorporates

The 2018 Transportation Performance Measures Report includes performance measures defined specifically for Greater Kansas City, as well as measures required by the FAST Act.

In this document, unique symbols are used to differentiate between regionally defined and federally required performance measures.



Federal measure



Regional measure

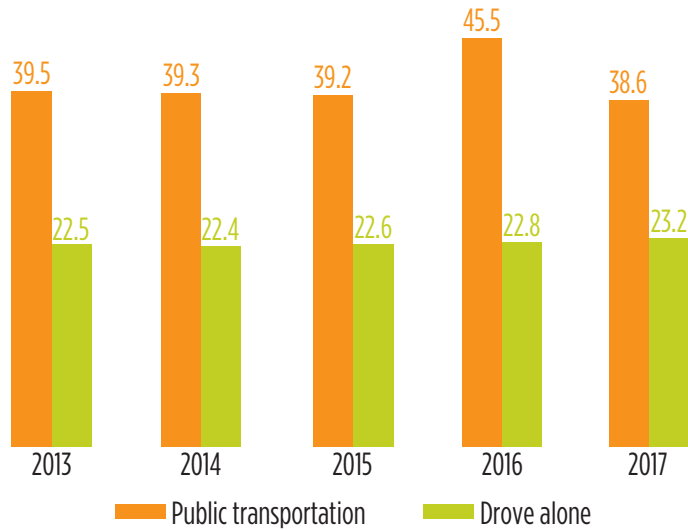
stakeholder comments. State departments of transportation and metropolitan planning organizations are required to establish targets for the performance measures, and work towards achieving them through transportation planning and programming activities.

Targets were finalized for all federal measures in October 2018.

# Travel time to work



## Comparison of travel time to work in minutes

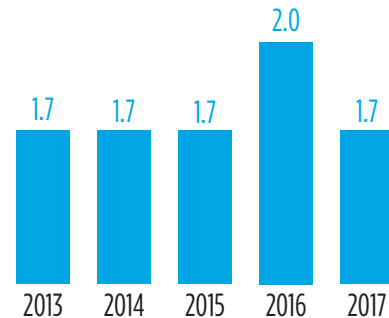


This measure looks at the average travel time for commuters driving alone compared to those taking public transportation. There is considerable difference between the commute times for driving alone and using public transportation.

The American Community Survey calculates annual estimates of the average travel time to work (in minutes) for various modes of transportation. Travel time for automobiles is influenced by a variety of factors such as trip length, traffic volume, roadway capacity and signal timing. Travel time for public transportation is also affected by service frequency, vehicle capacity, boarding and dwell times and number of transfers.

Transportation can play a key role in providing equitable access for low-income and minority residents to jobs, other services and opportunities.

### Ratio of travel time to work for driving alone versus using public transportation

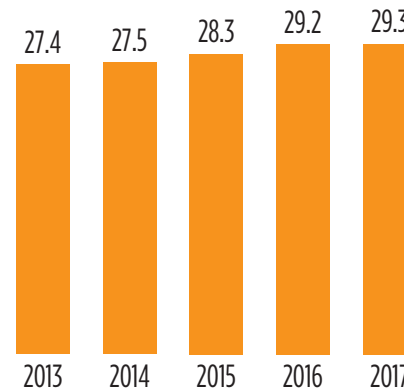


Data source: American Community Survey - 1 year estimates 2010-2016

# Vehicle miles traveled per capita



## Daily vehicle miles traveled per capita



While multiple variables influence the amount of vehicle travel, daily vehicle miles traveled (VMT) per capita is increasing at a time when carpooling and transit ridership are decreasing. It is also increasing faster than the rate of population growth.

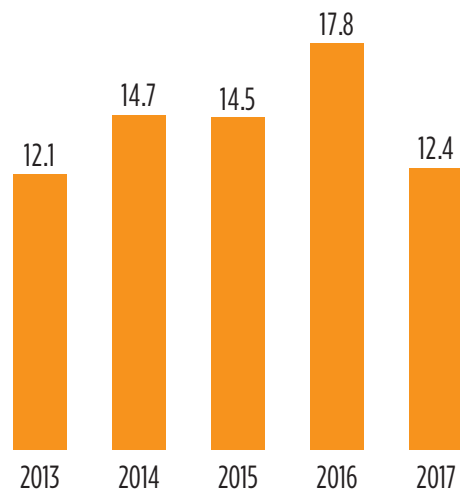
Reducing fuel consumption and emissions can have a positive impact on air quality. One key measure of how the transportation system is affecting air quality and energy use is VMT per capita.

VMT quantifies the extent of motor vehicle operation on roadways. An increase in VMT typically correlates to a region's growth in population and economic development, but also contributes to traffic congestion and air pollution. Because population growth affects total VMT, we measure performance using miles per capita.

As the Kansas City region continues to grow, TO 2040 supports policies and alternative modes of transportation that can reduce per capita VMT, improve air quality and reduce congestion on the region's roadways.

Data source: Kansas Department of Transportation (KDOT) and Missouri Department of Transportation (MoDOT) 2012-2016 State DOT Roadway Databases

## Percent of regional permits for new housing units within walkable areas

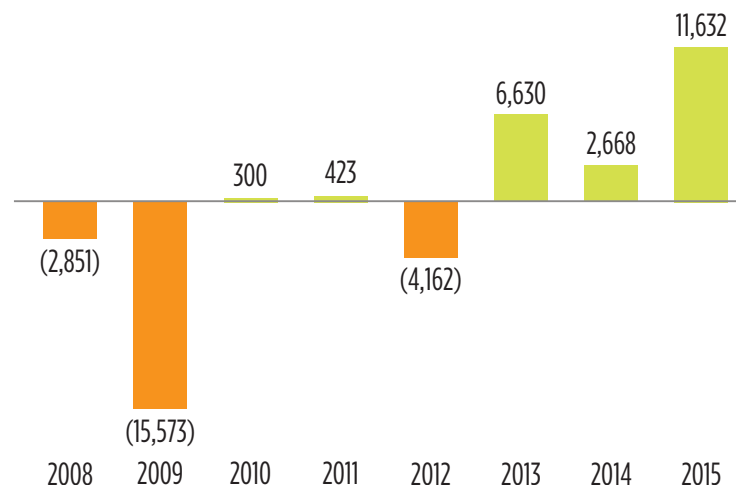


This measure calculates the percent of annual housing permits in the region's most vibrant, walkable areas.

The percent of regional permits for new housing units within walkable areas is obtained by subtracting the housing units within a quarter mile of walkable area from the total housing units in eight of the nine MARC counties, excluding Ray county.

*Focusing residential development in vibrant, walkable areas facilitates use of sustainable transportation modes such as walking, biking, carpooling and public transportation.*

## Change in employment within walkable area



This measure tracks the year-over-year change in employment within a quarter mile of the most vibrant, walkable areas.

Vibrancy may involve providing people with access to services, entertainment and social interaction, plus employment, transportation and housing options. Vibrancy depends on density, mixed use, and urban design that supports access by pedestrians, bicycles and transit.

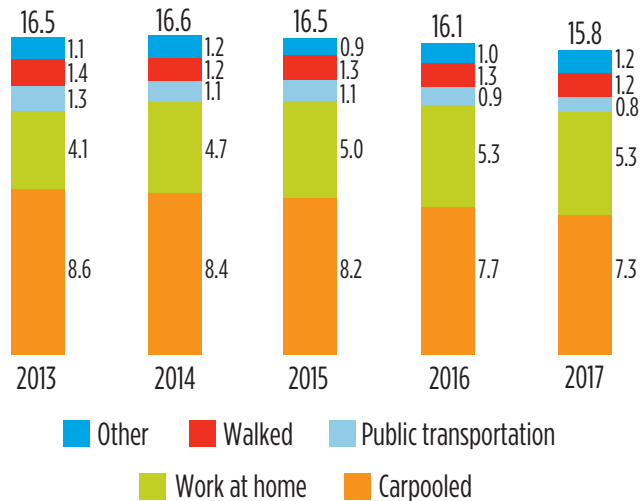
MARC's walkability index measures vibrancy by combining intensity of development (population and employment density), mixed land use, density of businesses and other destinations, transit access, and walkable street layout.

The change in employment is calculated by subtracting the total employment within one mile of walkable area from one year to the next. This creates the time frame for each two year period to measure the change in employment.

# Multimodal options



## Percent of work trips using alternative modes

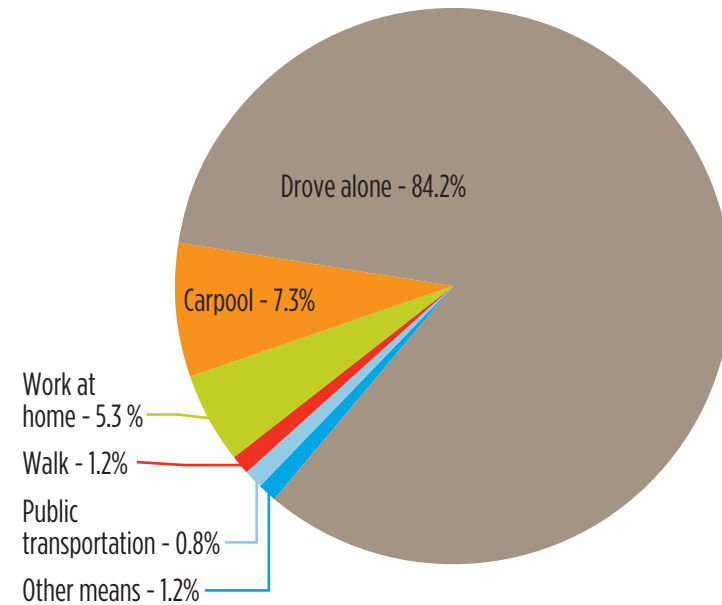


This measure represents the percent of workers who commute to work by carpooling, walking, taking public transportation, working from home or other means.

TO 2040 seeks to improve transportation choices by prioritizing complete streets, expanding transit coverage and service levels, and building out bicycle and pedestrian networks. The plan also supports public and special transportation services, and encourages ridesharing, such as carpooling and vanpooling.

While mode choice depends on available options, it's also influenced by the built environment — physical factors such as community design, land use, residential density, street connectivity and proximity of destinations.

## 2017 commute habits within the MARC region



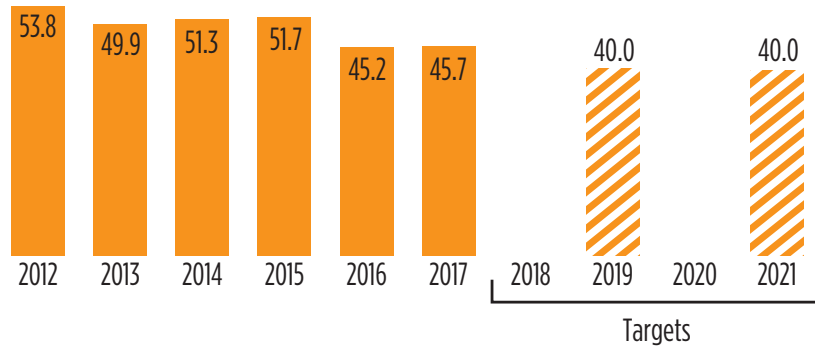
The Regional Plan for Sustainable Development encourages pedestrian connections, transit-supportive development and links among activity centers. Vibrant, mixed-use centers and corridors accommodate mobility needs of residents, enhance the character of a community and help sustain neighborhood longevity.

*According to the 2009 National Household Travel Survey (NHTS), commuting accounts for nearly 28 percent of vehicle miles of traveled in the United States. Driving alone contributes to traffic congestion, increases the amount of space needed for parking and is not an affordable option for many households.*

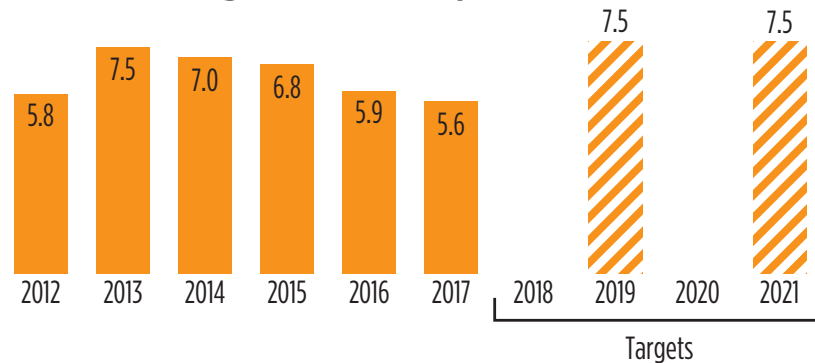
# Bridge conditions



## Percent of bridge deck area in good condition



## Percent of bridge deck area in poor condition



A quality transportation network ensures efficient performance and reliability in moving users from place to place. A system that is not well maintained can pose barriers to performance and safety. Transportation Outlook 2040 supports maintaining the condition of the region's transportation infrastructure in order to improve performance and avoid higher maintenance costs associated with deterioration.

The classification of this performance measure is based on National Bridge Inventory (NBI) condition ratings for items 58 (deck), 59 (superstructure), 60 (substructure) and 62 (culvert). Condition is determined by the lowest rating of deck, superstructure, substructure or culvert. If the lowest rating is greater than or equal to 7, the bridge is classified as good; if it is less than or equal to 4, the classification is poor. (Bridges rated below 7 but above 4 will be classified as fair; there is no related performance measure.) This measure addresses National Highway System bridge deck area only.

*Pavement and bridge conditions on the transportation network directly impact safety, performance and economic vitality in the Kansas City region.*

## Pavement conditions

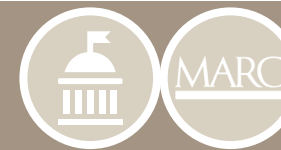


Percent of	2017	2019 Goal
Interstate roads in good condition	73.1	72.6
Interstate roads in poor condition	0.1	0.2
Non-Interstate roads in good condition	54.7	52.0
Non-Interstate roads in poor condition	0.7	0.5

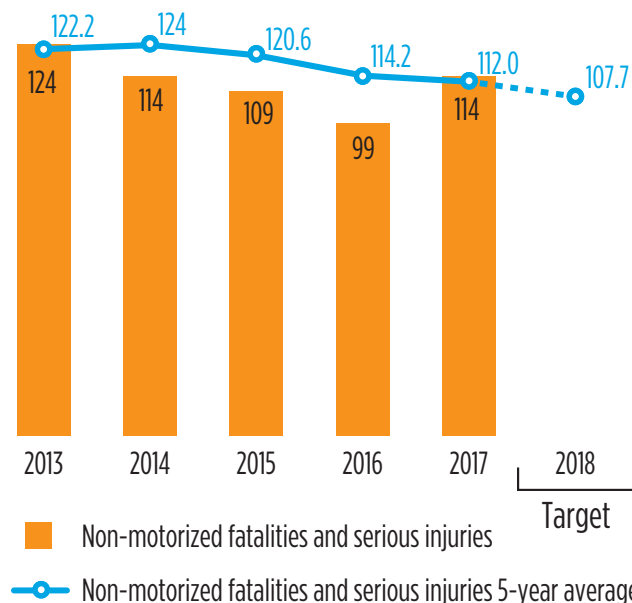
Accurate and timely data on pavement condition is used to assess system performance and deterioration, identify maintenance and reconstruction needs and determine financial needs. The Kansas Department of Transportation (KDOT) and Missouri Department of Transportation (MoDOT) determine whether highway pavement is in acceptable condition.

Prior to 2017, Kansas and Missouri defined pavement conditions differently. There is no historical data because this is the first year the definitions of good and poor have been the same for each state.

## Non-motorized fatalities and injuries



### 5-year average of non-motorized fatalities and serious injuries



This measure tracks the number of non-motorized — primarily bicycle and pedestrian — fatalities and serious injuries during a calendar year. Many non-motorized accidents go unnoticed or unreported.

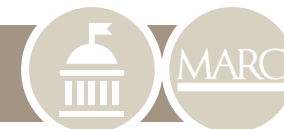
The 5-year average of non-motorized fatalities and non-motorized serious injuries is equal to the total number of non-motorized fatalities and serious injuries in a five year period, divided by five.

The region's next Metropolitan Transportation Plan calls for the reduction of non-motorized fatality and disabling injury crashes by half through the plan's maturation in 2050.

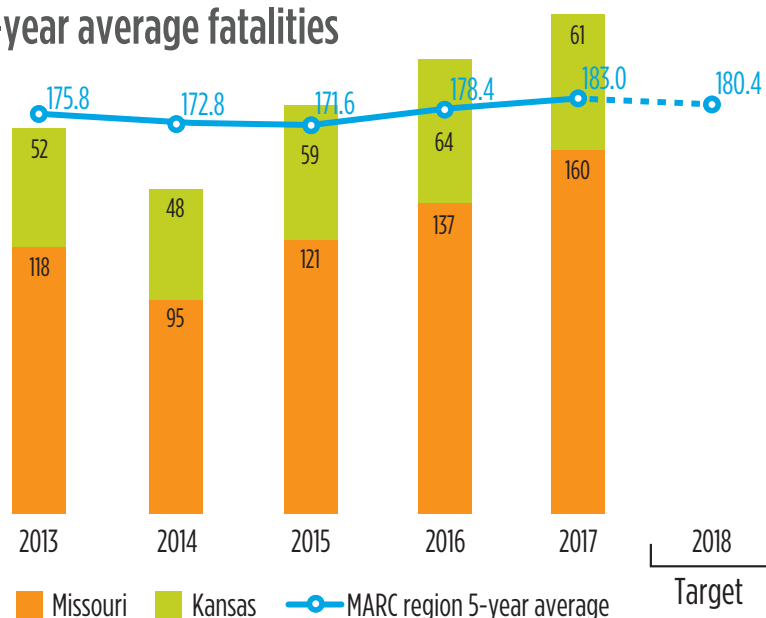
*It is imperative as a region that planners and safety stakeholders give non-motorized accidents the same attention as motorized crashes.*



# Fatalities



## 5-year average fatalities

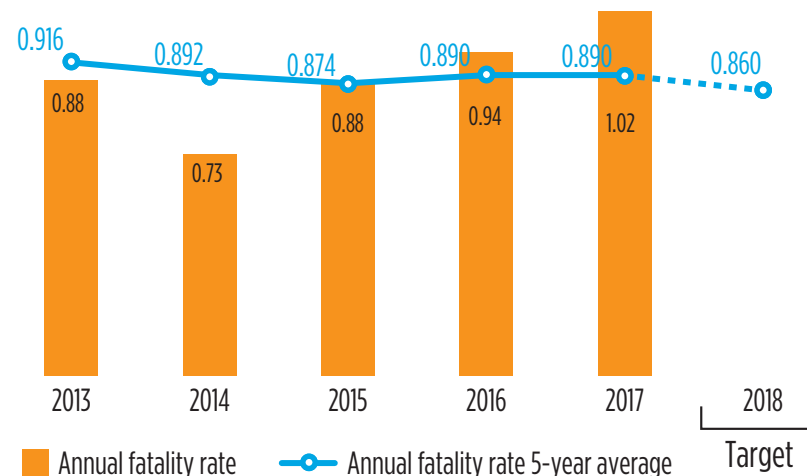


Transportation infrastructure, education, enforcement, engineering and emergency service strategies all play important roles in improving safety and security for the traveling public. One specific performance measure is the number of roadway fatalities that result from crashes on the transportation network.

This measure tracks the 5-year average of fatalities in the MARC region — simply the sum of annual fatalities over a 5-year period divided by five. The number of fatalities resulting from crashes can sometimes vary significantly from one year to the next. Using the average is a way to smooth out annual variations and observe trends over time. The bars of show the number of fatalities for that year, while the blue line shows the average for the 5-year period ending that year. The 2018 data point shows the target 5-year average.

Ideally, roadways on the transportation network would be completely safe, but unfortunately automobile crashes occur daily across the region. Traffic crashes can involve multiple contributing factors, including infrastructure-related and behavior-related factors.

## 5-year average rate of fatalities per 100 million vehicle miles traveled



Another way to measure fatalities is to consider them within the context of total travel. There is a relationship between the amount of travel and the probability of a crash (and fatal injury).

This measure tracks the 5-year average for the rate of fatalities per 100 million vehicle miles traveled (VMT). To calculate the annual fatality rate per 100 million VMT, the annual number of fatalities is multiplied by 100,000,000, and the result is divided by the annual vehicle miles traveled. The 5-year average fatality rate is then calculated by averaging the annual rates over a 5-year period. The bars represent the fatality rate for only that year, while the blue line shows the 5-year average rate for the 5-year period ending that year. The 2018 data point shows the target 5-year average.

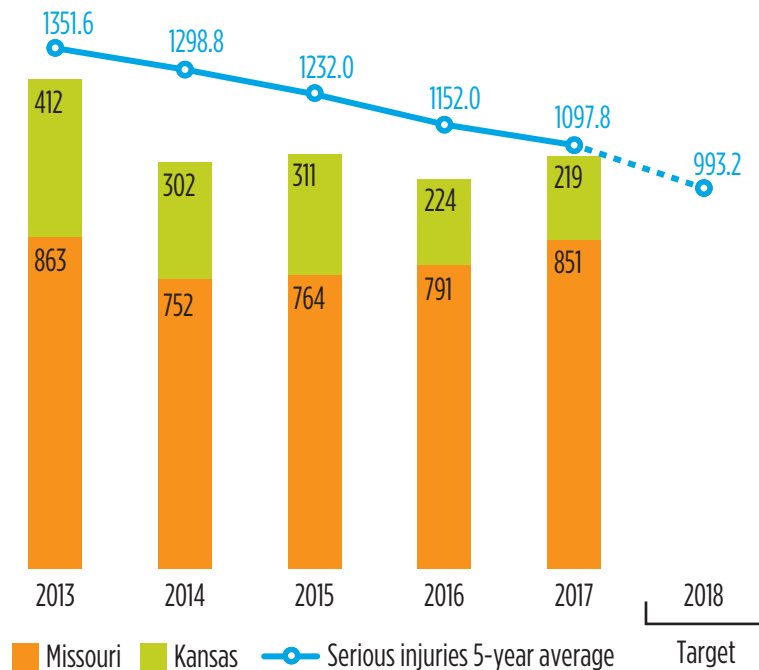
*Roadway crashes have tremendous financial consequences and human tolls. Tracking fatalities and injuries helps inform efforts by area planners and policy makers to combat a range of crash causes.*



# Serious injuries



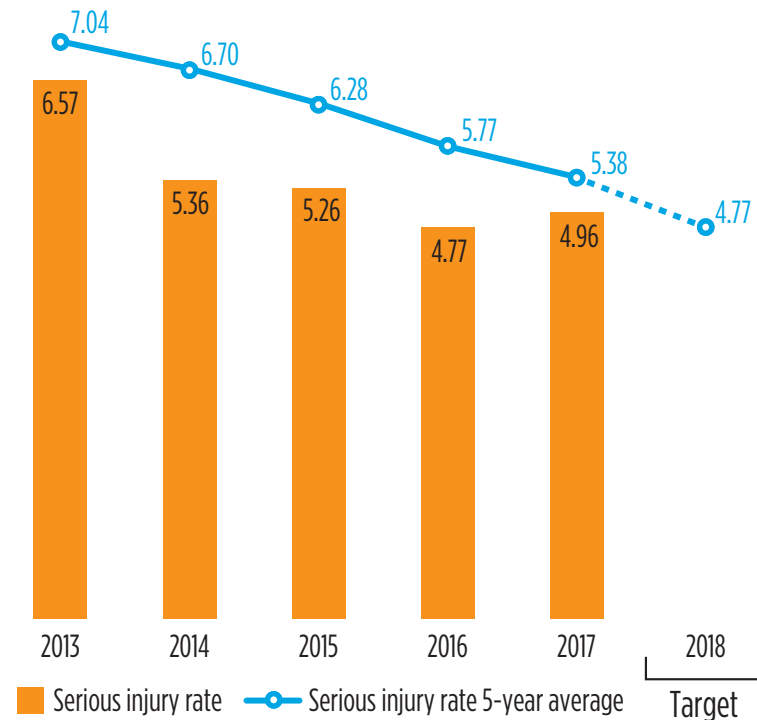
## 5-year average serious injuries



Serious (sometimes called disabling) injuries are also a major focus of transportation safety planning. Generally, an injury is considered serious when a vehicle occupant must be transported from the crash site in an ambulance.

This measure tracks the 5-year average of serious injuries in the MARC region — simply the sum of annual serious injuries over a 5-year period divided by five. The number of serious injuries resulting from crashes can sometimes vary significantly from one year to the next. Using the 5-year average is a way to smooth out annual variations and observe trends over time. The bars show the number of serious injuries for that year, while the blue line shows the average for the 5-year period ending that year. The 2018 data point shows the target 5-year average.

## 5-year average rate of serious injuries per 100 million VMT



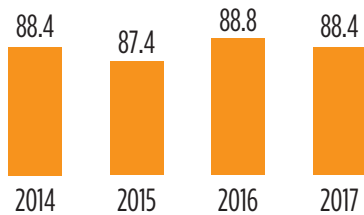
Another way to measure serious injuries is to consider them in the context of total travel. There is a relationship between the amount of travel and the probability of a crash (and serious injury).

This measure tracks the 5-year average of the rate of serious injuries per 100 million vehicle miles traveled (VMT). To calculate the annual serious injury rate per 100 million VMT, the annual number of serious injuries is multiplied by 100,000,000, and the result is divided by the annual vehicle miles traveled. The 5-year average is then calculated by averaging the annual rates during the 5-year period. The bars represent the rate of serious injuries for only that year, while the blue line shows the 5-year average rate for the 5-year period ending that year. The 2018 data point shows the target 5-year average.

## On-time transit performance

MARC

### Transit on-time performance



As the Kansas City region's largest transit service provider, the Kansas City Area Transit Authority's (KCATA) on-time performance has remained high and fluctuated only slightly over the past few years.

For transit riders, on-time performance is a key measure of quality service. Regular schedule adherence and system reliability are important factors in maintaining a reliable transit system.

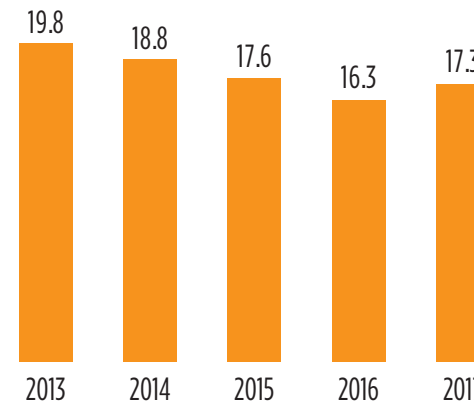
For the Kansas City region, on-time performance data was collected from the Kansas City Area Transportation Authority (KCATA) and Johnson County Transit (The JO). Although both use the industry standard definition of one-minute early to 5 minutes late, KCATA collects data using Automatic Vehicle Location (AVL) software, while Johnson County relies on random fieldwork to collect data. Because these methods are so different, comparing the two sets of data is difficult, therefore, the data shown here is only from KCATA.

Data source: Transit on-time performance data from KCATA

## Transit service usage

MARC

### Average transit boardings per hour of service



■ RideKC (KCATA, Johnson County, Unified Government Transit, IndeBus and KC Streetcar)

\*Data prior to 2017 does not include KC Streetcar boardings.

Each transit operator in the region — Kansas City Area Transit Authority, Johnson County Transit and Unified Government transit — experienced different trends for ridership and service hours.

This measure divides the total number of annual, unlinked passenger trips (boardings) on transit vehicles by the number of hours those vehicles are in service.

This ratio is a way to measure the utilization rate of fixed-route public transportation services. By comparing those two values, transit operators can maximize efficiency by balancing the amount of service (supply) with ridership (demand). Ideally, boardings per revenue service hour should approach, but not exceed, the overall carrying capacity of the transit system.

Public transit in the Kansas City region is provided by five area transit agencies. Together, this network of services aims to provide equitable alternatives to trips made in personal vehicles.

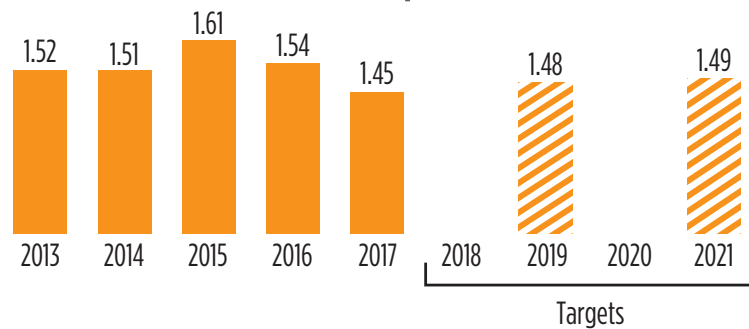
*Increased transit ridership not only benefits providers in terms of efficiency, but also helps to relieve congestion on major roadways and improves air quality for the region.*

Source: National Transit Database (NTD) Annual Transit Profiles and Federal Transit Administration.

# Reliable travel times



## Truck travel time reliability index



Travel times for trucks in the urbanized Kansas City area are highly unreliable. This seems to contrast with travel time reliability for the general public, although they are measured differently (percentage of reliable miles traveled versus a plain index).

The Truck Travel Time Reliability (TTTR) Index measures the extent of unexpected delay for freight movement. It is expressed as a ratio. When the ratio is higher, truckers experience more unexpected delay on the roads. When it is lower (closer to 1), the roads are more reliable.

Reporting is divided into five periods:

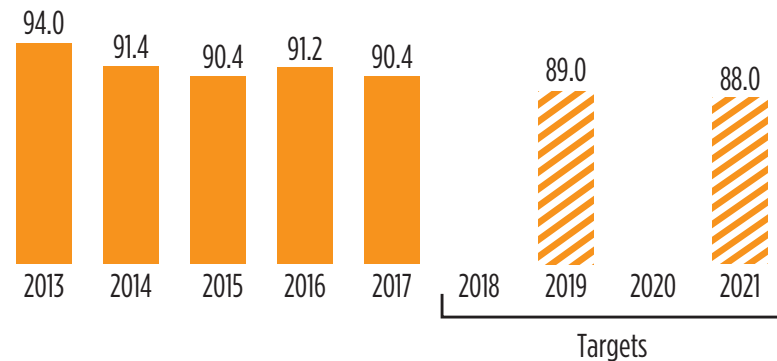
- Morning peak — 6 to 10 a.m. Mondays through Fridays.
- Midday — 10 a.m. to 4 p.m., Mondays through Fridays
- Afternoon peak — 4 to 8 p.m., Mondays through Fridays
- Weekends — 6 a.m. to 8 p.m., Saturdays and Sundays
- Overnights — 8 p.m. to 6 a.m., all days

The TTTR ratio is generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. The TTTR Index is generated by multiplying each segment's largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate.

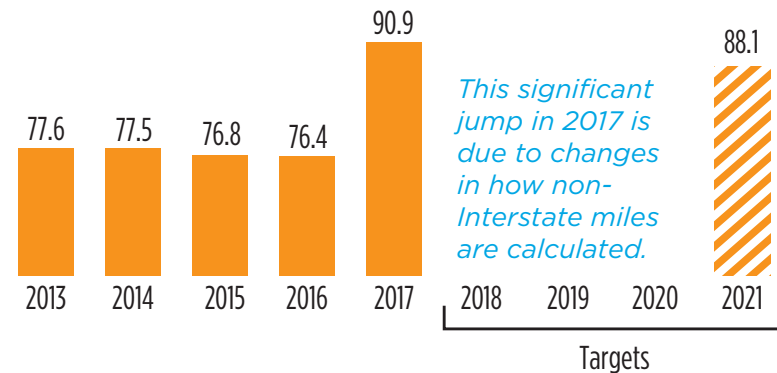
The targets in 2019 and 2021 represent ratios the region would like to stay at or below.

*For truckers, it is important to make deliveries on time. A better level of reliability would help them accomplish their goals.*

## Percent of reliable Interstate miles



## Percent of reliable non-Interstate miles



Travel time reliability measures the extent of unexpected delay. This is represented as the percent of miles traveled where users do not experience significant unexpected delay. The targets for 2019 and 2021 indicate levels that the region would like to stay at or above.

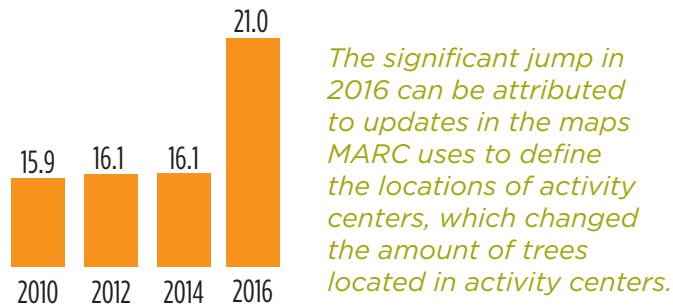
Most travelers are not tolerant of unexpected delays because they will have larger consequences than expected delays due to everyday congestion. Travelers also tend to remember the few bad days spent in traffic, rather than the average time for travel throughout the year. In order to improve travel time reliability, the first step is to measure it. This measure better represents a commuter's experience than a simple average travel time.

*These targets are lower than the current measures because it is anticipated that the region won't have the resources over time to maintain its current transportation system.*

# Tree canopy coverage

MARC

## Tree canopy coverage



Tree canopy coverage had remained near 16 percent since 2010 with a 1.16 percent standard error until 2016 when the coverage rose to 21 percent. This change can be attributed to updates in the maps MARC uses to define the locations of activity centers, which would change the amount of trees located in activity centers.

Tree canopy coverage quantifies urban forestry within the activity centers of the MARC region, facilitating efforts for more environmental services. Trees reduce smog, create oxygen, diminish heat and produce a cooling effect. They also reduce storm water runoff and noise pollution.

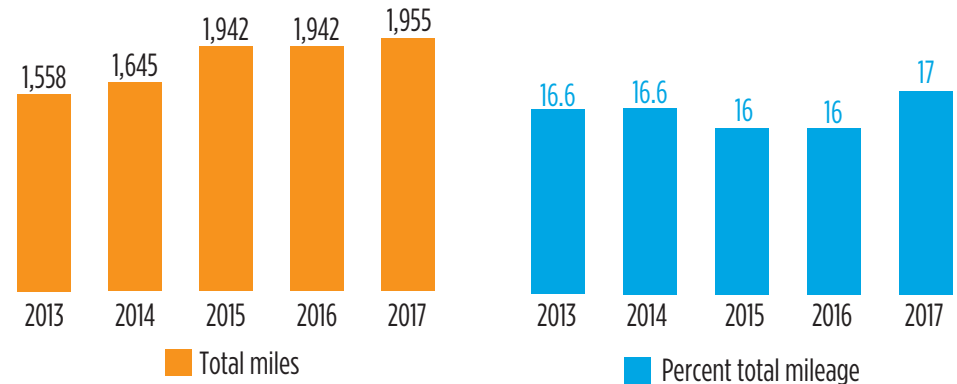
The tree canopy coverage measure is designed to allow easy and accurate estimates of tree coverage using National Agriculture Imagery Program (NAIP) aerial imagery. NAIP imagery for Kansas and Missouri is collected and made available every other year.

**Activity centers** are focal points or destinations within a community. They are vibrant areas containing a concentration of mixed land uses, diversity of demographics and face-to-face social interaction. This includes housing, retail, offices, restaurants, medical care and other services. Their scale ranges from large regional centers to mid-size community centers, down to neighborhood-level convenience centers. In terms of transportation planning, activity centers provide a variety of mobility options and serve as connection points helping people reach their destinations.

# Bicycle and pedestrian accessibility

MARC

## Percent of bike facility mileage serving activity centers



Convenient access to bicycle and pedestrian facilities increases the viability of these modes as alternative transportation choices. Bicycling and walking are environmentally friendly modes of transportation that do not contribute to roadway congestion or air pollution. These facilities can connect residents to activity centers, transit routes and recreational opportunities. They can also minimize hazards at major barriers to non-motorized travel, such as rivers or highways. These facilities are valuable components of livable communities.

This calculation shows not only the progression of the region's bicycle and pedestrian infrastructure, but also its effectiveness in providing mobility options and access to jobs and community resources for the region. This measure specifically focuses on bicycle facilities that serve mixed-use centers, encouraging bicycle trips for purposes other than recreation.

*Tracking bicycle and pedestrian access to the region's mixed use and activity centers encourages municipalities in the region to focus investments in areas that may promote the use of bicycles for purposes other than recreation. However, the quality of a network of bicycle and pedestrian infrastructure involves more than just measuring completed linear mileage. Understanding the location of bicycle and pedestrian facilities in terms of populations served is key to assessing the performance of the regional network.*

## TTPC AGENDA REPORT

November 2018  
Item No. 8

### ISSUE:

REPORT: Household Travel Survey Update

### BACKGROUND:

MARC periodically conducts regional household travel surveys to obtain detailed information about the socio-economic characteristics and travel behavior of persons living in the Greater Kansas City region. The information collected is used as the foundation for developing travel demand forecasts, a key requirement of federal metropolitan transportation planning regulations. The last regional household travel survey was completed in 2004, and since that time the region has experienced significant shifts in travel behavior due to changing demographics, generational preferences, and the emergence of new modes like transportation network companies (i.e. Uber and Lyft), bike share and the KC Streetcar.

The outcome of this effort will inform future household travel data collection by MARC and ensure these efforts are accurate, cost-effective and responsive to rapidly-changing transportation behavior. In addition to updating regional travel behavior information, this project will include the development of a methodology for comparing household survey data with results produced by the Sidewalk Labs Replica model (and similar products using mobile device data). The project is anticipated to last approximately 12 months, and will be completed by late-2019.

MARC staff will provide more detail about the scope and schedule of this initiative at the meeting.

### POLICY CONSIDERATIONS

None.

### COMMITTEE ACTION

None.

### RECOMMENDATION

None. Information only

### STAFF CONTACT

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