Executive Summary
Table of Contents

Section 1  Page 3  Introduction
          Director's Letter
          Introduction to the Plan

Section 2  Page 9  Goals and Objectives

Section 3  Page 13  Stakeholder Engagement

Section 4  Page 19  Emerging and Continuing Trends
          Demographics
          Infrastructure
          Emerging Trends

Section 5  Page 29  Transportation System Needs and Revenues
Introduction
Residents and visitors alike use Missouri roads every day.

At the Missouri Department of Transportation (MoDOT), we build and maintain a transportation system that safely and reliably connects people with jobs and services, connects businesses with suppliers and customers, moves students to and from school and allows visitors to explore the state’s many destinations. Our aspiration is to provide a world-class transportation system that is safe, innovative, reliable and dedicated to a prosperous Missouri.

Planning efforts are, of course, the critical first steps in achieving that aspiration. Over the past eight months, MoDOT has worked to update our Long Range Transportation Plan (LRTP), which sets the 25-year vision for the state’s transportation system and establishes goals and objectives.
This year’s update is different from past LRTPs in three important ways:

- We utilized online outreach methods to gather a significant amount of public input in a cost-effective way
- We confirmed our previous goals were accurate and added a new goal
- We worked to ask the hard questions about what the future of technology holds for transportation in Missouri

At the end of the day, input from Missourians is the true driver of our planning process and we are national leaders in incorporating public feedback into planning. This year, while gathering input to develop our LRTP goals, we used traditional paper surveys and an online survey. The online survey yielded an outstanding response – more than 7,700 Missourians participated to tell us what they thought.

Incorporating this public feedback with stakeholder engagement, we confirmed our previous goals are still transportation priorities for Missouri. We also identified the improvement of reliability and the reduction of congestion on Missouri’s transportation system as a new goal.

Lastly, the LRTP is a 25-year glimpse into the future. We may not be able to accurately predict the future, but we do know that advancing technology will impact transportation systems. We convened a statewide conversation to discuss the future role of technology and what it might mean to safety, infrastructure investments and planning. That conversation provided focus for our technological efforts and a framework for further discussion.

MoDOT has always worked to balance limited resources with ever-increasing transportation needs. As we strive to implement the vision set forth by this LRTP, we believe our hard work to identify and address the needs of Missourians will carry the state successfully into the future.

[Signature]
“Our path forward is simple. We will work every day to improve the condition of our infrastructure and our organization.”

Patrick K. McKenna, Director of MoDOT
Introduction to the Plan

The Missouri 2018 LRTP is a performance-based policy plan which:

- evaluates future trends that will impact Missouri’s transportation system;
- updates the state’s transportation goals, objectives and performance measures;
- examines transportation system needs and anticipated revenues over the next 25 years.

With the input of more than 7,700 Missourians and transportation planning partners across the state, the analyses provided in this plan will inform future transportation decisions.

MoDOT has a long history of involving citizens in making decisions about the state’s transportation system. This public outreach process involves citizens from start to finish and the approach has earned MoDOT recognition as a national leader in public involvement and several industry awards. Building on the goals established in the 2014 LRTP, MoDOT reached out to stakeholders and citizens to determine the goals and objectives which will influence future transportation policy decisions in Missouri.

The updated goals and objectives included in the 2018 LRTP address Missourians’ transportation priorities, prepare Missouri for new and emerging transportation technologies, are aligned with the freight plan goals, and cover the national goals set by Congress.
A Citizen's Guide to Missouri's Transportation Future

Long Range Plan Update

Goals and Objectives
Mission Statement: Provide a world-class transportation system that is safe, innovative, reliable and dedicated to a prosperous Missouri.

Goals and Objectives
A key component of the 2018 LRTP update was to identify those goals that align with the transportation vision of Missourians. The LRTP goals and objectives are important because they are citizen-driven.

An additional goal was identified and several new objectives related to technology improvements, environmental stewardship, improvements in system reliability and project delivery are included.

Tangible Results
Since 2005, MoDOT has been a national leader in performance management and has achieved significant improvements in processes and services by implementing a performance based approach. MoDOT focuses efforts on seven Tangible Results. These are outcomes the public expects, and they guide MoDOT decision-making. MoDOT uses a range of performance measures to focus and encourage progress in achieving the seven Tangible Results. Through performance management efforts MoDOT has documented more than $4.9 billion in one-time or ongoing savings since 2007.

At MoDOT we are moving Missouri’s CITIZENS VISITORS & PRODUCTS Safely.
Our Goals

• Take care of the transportation system and services we enjoy today
• Keep all travelers safe, no matter the mode of transportation
• Invest in projects that spur economic growth and create jobs
• Give Missourians better transportation choices
• Improve reliability and reduce congestion on Missouri’s transportation system
Stakeholder Engagement
The 2018 LRTP used a highly effective public engagement process that included input from stakeholders across the state. Stakeholder input helped confirm goals from the existing LRTP and add an additional goal for the plan update.

Planning Partners Key to Success

MoDOT worked with planning partners representing metropolitan planning organizations (MPOs) and regional planning commissions (RPCs) to gather input from those organizations and from the public. Following an initial webinar with MPOs and RPCs, MoDOT encouraged its planning partners to ask stakeholders to participate in an online survey and share input on the LRTP. By reaching out through this planning partner network, MoDOT received far more responses to the survey than anticipated. This was an outstanding demonstration of the importance of partnering in planning efforts.
Discussion Questions

- Based on what you have heard, what do you think are the key issues for public sector leaders?
- What happens if we do nothing?
- Who should be at the discussion?
- Are there other areas of concern?

2) What Happen It We Do Abstract
   - Problem: Hazy Horizon
   - Consequences: Disrupt of More Technology
   - Inhibit Private Innovation
Participants were asked to rank their top three priority areas with the following results:

1. Preserve the existing system
2. Congestion reduction
3. System reliability
4. Sustainability
5. Advanced technology
6. Freight movement

Preserve the existing system is already an LRTP goal, which was confirmed during stakeholder engagement. Congestion and reliability ranked so highly, a fifth goal area - improve reliability and reduce congestion on Missouri’s transportation system - is being added to the LRTP update.

Participants were asked to rank a variety of scenarios by what was most important to them. Here’s how people rated each scenario.

- Improving road and bridge conditions, which means paying a little more and limiting the construction of new roadways.
- Seeking new revenue for other transportation options, such as increased public transit and rail, or bicycle and pedestrian facilities.
- Expanding the transportation system (adding lanes, building new roads and interchanges), which could mean paying more or seeing the condition of the system and services decline.
- Keeping my transportation costs the same, even if that means the condition of the system declines over time and no new facilities are built.
Social Media Extends Survey Reach

In addition to promoting the survey with planning partners, MoDOT utilized social media platforms to encourage Missourians to provide feedback on the LRTP update via the online survey. MoDOT received nearly 600 comments on its Facebook posts and more than 80 comments via Twitter.

Online Survey Participation

MoDOT used an online survey to gather input about priorities for the future of Missouri’s transportation system. The survey was open to stakeholders for one month and was available in both English and Spanish to all interested Missourians. Thanks to the support of MoDOT’s planning partners, the survey had a response of more than 7,700 participants. Participants represented a wide variety of locations from across the state.

Stakeholder Engagement Takeaways

During the survey, stakeholders indicated the four existing goals should be retained. Stakeholders also indicated support for adding a fifth goal – improve reliability and reduce congestion on Missouri’s transportation system – to the plan update. In addition to goals, stakeholders were asked to rate their priorities.
Emerging and Continuing Trends
Missouri’s Trends

The LRTP is informed by a thorough analysis of emerging and existing transportation trends, both nationally and in Missouri. These trends have implications for long-range planning and have been factored in while confirming statewide transportation goals and objectives. The LRTP also includes an analysis of emerging technology – like autonomous and connected vehicle technology (sometimes called driverless cars) – and its potential impact.

Population is getting older

Cities are growing

More interest in modal choice
Emerging trends include an aging population, increasing urbanization, a younger population that isn’t as interested in driving and advanced technology. These trends may combine in ways that significantly alter transportation needs. In addition, other trends likely to require evaluation of investment priorities include changing highway capacity needs, the expanding desire or need for a more robust multimodal transportation system, and the development of infrastructure required to sufficiently adapt to advancing technologies.

Continuing trends include an anticipated 55 percent growth in truck freight between 2011 and 2030, commuters overwhelmingly preferring to drive alone in private automobiles to and from work, and increasing vehicle miles traveled (VMT) as fuel prices remain at or near existing rates. These trends will continue to be the most significant influencing factors on the use of the transportation system. Additionally, trends that will continue to drive the evaluation of investment priorities in the near term include improving safety, expanding or adding new highways, addressing bottlenecks that tie up freight movement, and maintaining highway and bridge conditions.
Missouri Transportation
By the Numbers

TRENDS: 16-24 YEAR OLD MISSOURI RESIDENTS WITH DRIVERS LICENSE

<table>
<thead>
<tr>
<th>Year</th>
<th>Number Licensed</th>
<th>Percentage with License</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>79%</td>
<td>800,000</td>
</tr>
<tr>
<td>2007</td>
<td>78%</td>
<td>700,000</td>
</tr>
<tr>
<td>2008</td>
<td>77%</td>
<td>600,000</td>
</tr>
<tr>
<td>2009</td>
<td>76%</td>
<td>500,000</td>
</tr>
<tr>
<td>2010</td>
<td>75%</td>
<td>400,000</td>
</tr>
<tr>
<td>2011</td>
<td>74%</td>
<td>300,000</td>
</tr>
<tr>
<td>2012</td>
<td>73%</td>
<td>200,000</td>
</tr>
<tr>
<td>2013</td>
<td>72%</td>
<td>100,000</td>
</tr>
<tr>
<td>2014</td>
<td>71%</td>
<td>0</td>
</tr>
<tr>
<td>2015</td>
<td>70%</td>
<td>0</td>
</tr>
</tbody>
</table>

16 to 24 Missouri Population | NumberLicensed | Percentage with License
Missouri Transportation Safety

- 25 percent reduction in fatalities from 2005-2016
- Trend has seen an increase in fatalities from 757 in 2013 to 947 in 2016
- MoDOT launched Buckle Up, Phone Down campaign in 2017
- MoDOT has challenged the public, schools, community leaders and business to take the challenge by signing a commitment to make Missouri roads safe

HOW RESIDENTS GET TO WORK

Percentage of workers over age 16, 2013

<table>
<thead>
<tr>
<th>Mode</th>
<th>Missouri</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove alone</td>
<td>81.7</td>
<td>76.4</td>
</tr>
<tr>
<td>Carpool</td>
<td>9.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Public Transportation</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Bicycle</td>
<td>5.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Walked</td>
<td>2.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Taxi, Motorcycle, Other</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>4.1</td>
<td>4.4</td>
</tr>
</tbody>
</table>

HIGHWAY TRAVEL

Billions of vehicle miles traveled, 2003-2016

- 2003: 68.2
- 2016: 74.5

TRANSPORT RIDERSHIP

2017: 62.5m

AIR CARRIER ENPLANEMENTS

2016: 12.8m
## Major Truck Freight Flows to, From, and Within Missouri, 2012

### Value of Freight Flow

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Change</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Gross Domestic Product</strong></td>
<td>$276.7b</td>
<td>▲ 15.1%</td>
<td>2003-2013</td>
</tr>
<tr>
<td><strong>Value of Freight Flow</strong></td>
<td>$496.8b</td>
<td>▲ 7.3%</td>
<td>2007-2013</td>
</tr>
<tr>
<td><strong>Tons of Freight Flow</strong></td>
<td>585.3m</td>
<td>▲ 3.0%</td>
<td>2007-2013</td>
</tr>
</tbody>
</table>

### Top Commodities Shipped From Missouri

<table>
<thead>
<tr>
<th>Description</th>
<th>Value Moved (in billions of current dollars, 2013)</th>
<th>Weight Moved (in millions of tons, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top Commodities Shipped From Missouri</strong></td>
<td>By value moved</td>
<td>By weight moved</td>
</tr>
<tr>
<td>Motorized vehicles</td>
<td>$24.5</td>
<td>Cereal grains 27.4</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>$15.3</td>
<td>Gravel 22.9</td>
</tr>
<tr>
<td>Misc. mfg. prods.</td>
<td>$12.0</td>
<td>Waste/scrap 12.8</td>
</tr>
<tr>
<td>Machinery</td>
<td>$11.2</td>
<td>Nonmetal min. prods. 10.2</td>
</tr>
<tr>
<td>Chemical prods.</td>
<td>$10.1</td>
<td>Other ag. prods. 8.3</td>
</tr>
</tbody>
</table>

### Top Commodities Shipped To Missouri

<table>
<thead>
<tr>
<th>Description</th>
<th>Value Moved (in billions of current dollars, 2013)</th>
<th>Weight Moved (in millions of tons, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top Commodities Shipped To Missouri</strong></td>
<td>By value moved</td>
<td>By weight moved</td>
</tr>
<tr>
<td>Motorized vehicles</td>
<td>$22.5</td>
<td>Coal 43.6</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>$18.9</td>
<td>Natural sands 12.1</td>
</tr>
<tr>
<td>Electronics</td>
<td>$13.4</td>
<td>Coal-n.e.c. 10.7</td>
</tr>
<tr>
<td>Machinery</td>
<td>$12.7</td>
<td>Cereal grains 10.5</td>
</tr>
<tr>
<td>Base metals</td>
<td>$12.0</td>
<td>Base metals 5.8</td>
</tr>
</tbody>
</table>

### Top Commodities Shipped Within Missouri

<table>
<thead>
<tr>
<th>Description</th>
<th>Value Moved (in billions of current dollars, 2013)</th>
<th>Weight Moved (in millions of tons, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top Commodities Shipped Within Missouri</strong></td>
<td>By value moved</td>
<td>By weight moved</td>
</tr>
<tr>
<td>Machinery</td>
<td>$17.0</td>
<td>Gravel 70.2</td>
</tr>
<tr>
<td>Motorized vehicles</td>
<td>$11.2</td>
<td>Cereal grains 40.0</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>$9.0</td>
<td>Nonmetal min. prods. 32.1</td>
</tr>
<tr>
<td>Mixed freight</td>
<td>$8.3</td>
<td>Natural sands 24.4</td>
</tr>
<tr>
<td>Other foodstuffs</td>
<td>$5.5</td>
<td>Waste/scrap 23.2</td>
</tr>
</tbody>
</table>
Emerging Technologies

Autonomous and connected vehicle technologies promise many changes in how we move people and goods throughout the nation. Transformational changes appear likely in most areas of transportation, including the development of infrastructure capable of handling new technology, land use, traffic volumes, safety, vehicle ownership, operations, maintenance, data sharing and funding.

To begin to prepare for changing technology, MoDOT analyzed both national trends and internal state efforts currently in place. It is important Missouri considers these technologies and how they may impact investments in things like new highways, shoulders and equipment.

- J.D. Power’s 2017 study found 43 percent of millennial and post-millennial consumers were supportive of full self-driving vehicles, compared to only seven percent of baby boomers

- An Insurance Information Institute Pulse survey conducted in May 2016 found 55 percent of consumers said they would not ride in an autonomous vehicle

- According to the Alliance of Automobile Manufacturers, in 2015, Missouri’s average vehicle age was 11.9 years, about six percent higher than the national average

- Some projections indicate 35 percent of light-duty car sales worldwide will be non-gasoline vehicles by 2040

- Nationwide in 2016, there were 567,000 all-electric vehicles on the road, with annual sales projected to reach 1.2 million by 2025

Perceived Benefits of Driverless Cars:

- Easier/less stressful transportation
- Increased road safety
- Lower insurance costs

Source: Insurance Journal
October 3, 2017
System Needs and Revenue
Needs and Revenues

MoDOT is responsible for maintaining a network of 33,856 miles of highway and 10,403 bridges. In addition, the state has responsibilities for non-highway modes of transportation including transit, aviation, railroads, bicycle and pedestrian and waterways. The state does not own most multimodal facilities, but instead primarily administers the funding and provides oversight for multimodal investments.

Nearly two-thirds of the state’s transportation funding comes from state user fees and one-third from federal revenue. A small fraction comes from Missouri’s General Revenue Fund, which receives revenue from the state’s income tax and general sales tax.

Given the current funding resources, most of the revenue will address maintaining and preserving the existing system in the current condition. Many high-priority unfunded annual needs still exist, as summarized in the graphic below.

![High-Priority Unfunded Annual Transportation Needs](image-url)
Our Thanks

Boonslick Regional Planning Commission
Bootheel Regional Planning & Economic Development Commission
Capital Area Metropolitan Planning Organization
Columbia Area Transportation Study Organization
East West Gateway Council of Governments
Green Hills Regional Planning Commission
Harry S. Truman Coordinating Council
Joplin Area Transportation Study Organization
Kaysinger Basin Regional Planning Commission
Lake of the Ozarks Council of Local Governments
Mark Twain Regional Council of Governments
Meramec Regional Planning Commission
Mid America Regional Council
Mid-Missouri Regional Planning Commission
Mo-Kan Regional Council
Northeast Missouri Regional Planning Commission
Northwest Arkansas Regional Planning Commission
Northwest Missouri Regional Council of Governments
Ozark Foothills Regional Planning Commission
Ozarks Transportation Organization
Pioneer Trails Regional Planning Commission
St. Joseph Area Transportation Study Organization
South Central Ozark Council of Governments
Southeast Metropolitan Planning Organization
Southeast Missouri Regional Planning and Economic Development Commission
Southwest Missouri Council of Governments