ACTIVATE
MISSOULA 2045

Activate Missoula 2045

Missoula Long Range Transportation Plan

March 2017

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Acronyms/Abbreviations

The following guide lists transportation abbreviations and acronyms that appear in this Long Range Transportation Plan.

AADT	Average Annual Daily Traffic
ACS	American Community Survey (U.S. Census Bureau)
ADA	The Americans with Disabilities Act of 1990
ASUM	Associated Students of the University of Montana
BBER	Bureau of Business and Economic Research – University of Montana
BR	Bridges (funding program)
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAC	Community Advisory Committee
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality (funding program)
CTSP	Community Transportation Safety Plan
DOT	Department of Transportation
EMS	Emergency Medical Services
FAST Act	Fixing America's Surface Transportation Act or FAST Act
FTA	Federal Transit Administration
HSIP	Highway Safety Improvement Program (funding program)
IM	Interstate Maintenance (funding program)
ITS	Intelligent Transportation Systems
LOS	Level of Service
LRTP	Long Range Transportation Plan
MACI	Montana Air and Congestion Initiative (funding program)
MAP - 21	Moving Ahead for Progress in the 21st Century
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MIM	Missoula In Motion
MPO	Metropolitan Planning Organization
MRA	Missoula Redevelopment Agency
MRTMA	Missoula-Ravalli Transportation Management Association
MUTD	Missoula Urban Transportation District
NEPA	National Environmental Policy Act (1969)
NH	National Highways (funding program)
SFCN	State Funded Construction (funding program)
STPU	Surface Transportation Program Urban (funding program)
STPS	Surface Transportation Program Secondary Highway (funding program)
STPX	Surface Transportation Program Off-System Routes (funding program)
TA	Transportation Alternatives (funding program)
TAC	Technical Advisory Committee
TDM	Transportation Demand Management
TIF	Tax Increment Financing
TIGER	Transportation Investments Generating Economic Recovery (grant funding)
TIP	Transportation Improvement Program
TPCC	Transportation Policy Coordinating Committee
TTAC	Transportation Technical Advisory Committee
URD	Urban Renewal District
VMT	Vehicle Miles of Travel

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Introduction

I. Transportation and People

Transportation is a part of everyone's life. Whether you are commuting to work or school, going to the store or movie theater, expecting a delivery to your home or office, or taking the dog for a walk - transportation is a daily necessity. Activate Missoula 2045 is a plan for Missoula's transportation future. It provides a blueprint for creating an accessible and connected transportation system over the next 30 years.

At its heart, transportation is about moving people – in whatever way they choose to travel. As Missoula's multi-modal Long Range Transportation Plan (LRTP), Activate Missoula 2045, addresses all modes of travel, including vehicular, bicycle, transit, and pedestrian, because a strong and balanced transportation system provides access for all people, of all ages and abilities. Activate Missoula 2045 also seeks to support and play a role in the implementation of Missoula's policies related to growth and development, environmental protection, economic development, neighborhood preservation, climate change, and community health.

II. Plan for Missoula's Future

Activate Missoula 2045 is not only a transportation plan, but also an investment strategy to support regional goals. It is meant to coordinate the multitude of transportation projects and programs carried out by various transportation partners across the region to ensure that our system is comprehensive, seamless, and coordinated. Coordination is essential, not only because transportation investments are typically costly and require a lot of up-front planning, but also because needs and priorities change over time. To ensure that we provide the most effective and efficient system possible, we must carefully choose how we prioritize our investments and we must continuously evaluate and try to respond to the needs of the community.

The Missoula Metropolitan Planning Organization

The Missoula Metropolitan Planning Organization (MPO) is a regional transportation planning body that was established in Missoula in the early 1980s. Federal law requires the formation of an MPO when an area reaches a population of 50,000. There are over 400 MPOs across the country, all working within their regions to help local agencies plan for and provide coordinated and connected transportation systems.

Who makes transportation decisions?

The Transportation Policy Coordinating Committee (TPCC) is the MPO's governing body and is comprised of 7 voting representatives from multiple agencies:

- City of Missoula Mayor
- 1 City of Missoula Council member
- 2 Missoula County Commissioners
- Missoula District Administrator of Montana Department of Transportation
- 1 Missoula Planning Board member
- 1 Mountain Line Board member

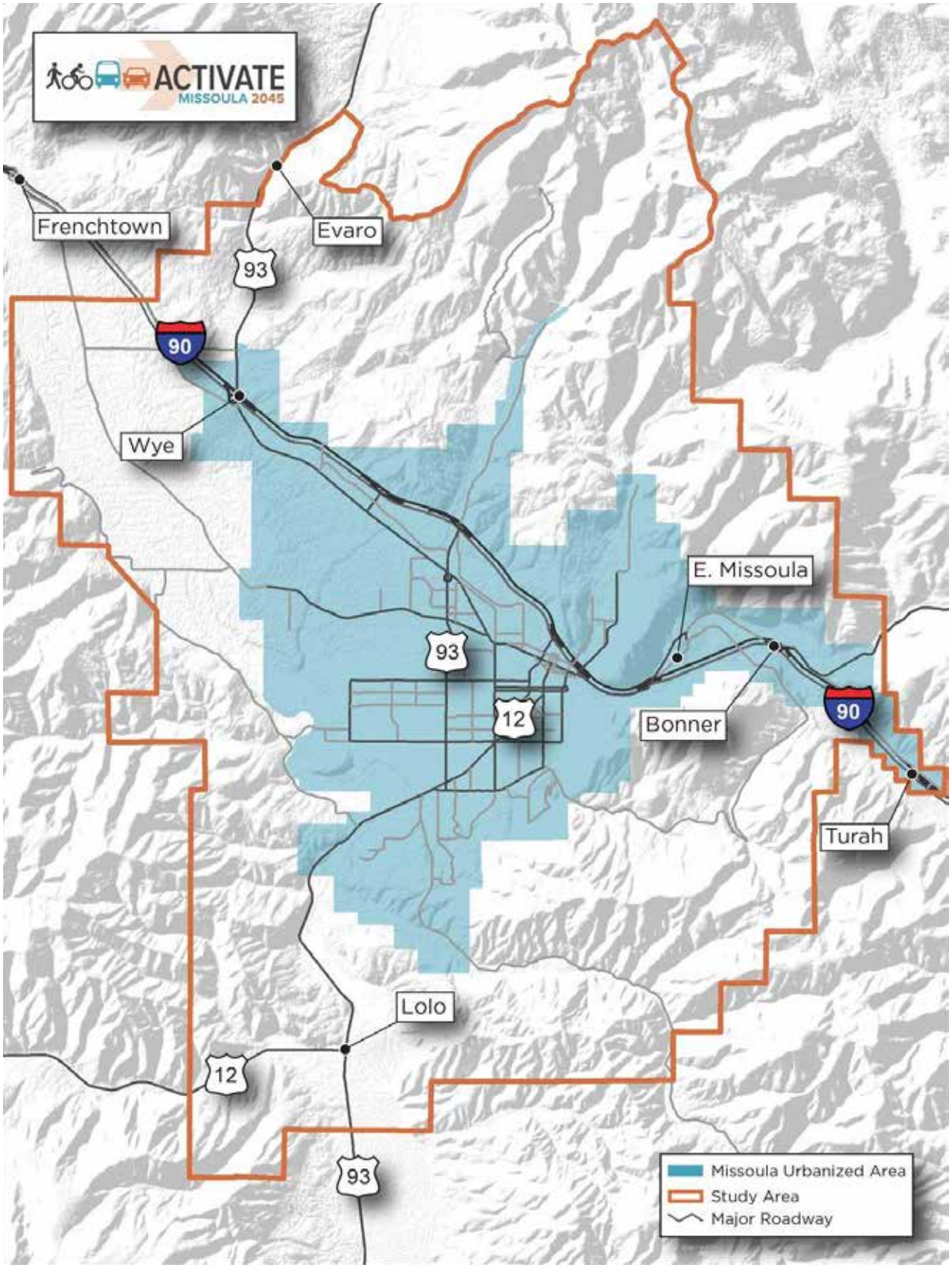


Figure 1. Missoula Metropolitan Planning Area boundary

MPOs work to bring agencies together to cooperatively identify regional transportation issues and needs and then prioritize the projects and programs meant to help address them. Missoula's MPO is small in comparison to the many others across the country, which may encompass multiple counties, numerous cities, or even cross state lines. Despite our small size, our transportation issues are not much different than those of larger metropolitan areas.

The MPO works with multiple agencies, including the City of Missoula, Missoula County, the Montana Department of Transportation, Mountain Line, the University of Montana, and others to decide how best to spend limited transportation funds and which projects and programs are implemented within our region. Figure 1 shows the MPO's planning area and the study area for the Activate Missoula 2045 plan.

Missoula Long Range Transportation Plan

Federal transportation law requires the Missoula MPO to update and adopt an LRTP for the region every four years. The LRTP is required to address all modes of transportation and plan for, and prioritize, projects for the next 20 years (at a minimum). LRTPs are also required to be "fiscally constrained," which means that the projects and programs recommended for funding must not exceed the amount of funding that is anticipated to be received in that time frame.

ACTIVATE MISSOULA 2045 GOALS

- Maintain our existing transportation system
- Improve the efficiency, performance, and connectivity of a balanced transportation system
- Maximize the cost-effectiveness of transportation
- Promote consistency between land use and transportation plans to enhance mobility and accessibility
- Provide safe and secure transportation
- Support economic vitality
- Protect the environment
- Promote community health and social equity through the transportation system

The previous LRTP (Connections 2040) was completed in 2012 (adopted in January 2013). This update seeks to carry forward many of the same goals and objectives of the previous plan, and plans completed even earlier, particularly as it relates to the creation of a transportation system that is safe, connected, accessible, preserves the environment, and supports Missoula's economy and growth policies. Activate Missoula 2045's goals and objectives provide a framework for the future of Missoula's transportation system, looking ahead 30 years.

Plan Process

The Activate Missoula 2045 planning process kicked off in earnest in the fall of 2015 and has taken more than a year to complete. Figure 2 illustrates the general process, including the technical tasks that were involved, and the points in which public input was sought from the community.

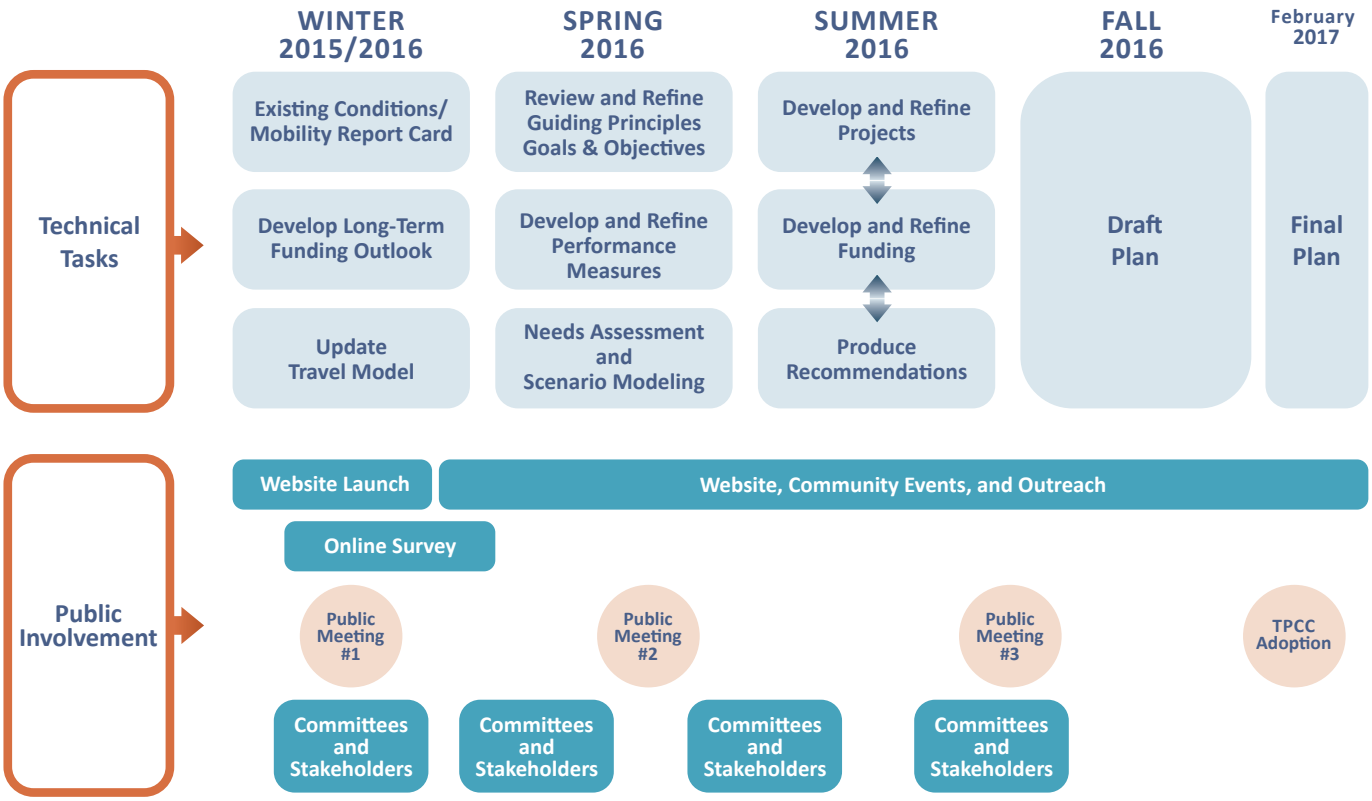


Figure 2. Project timeline

III. Structure of the Plan

The following chapters lay out the Activate Missoula 2045's development process, the ideas and issues studied, the public input involved, existing and future needs, and recommendations for the future. This multimodal plan integrates all modes and outlines policy and infrastructure investments at a regional scale:

Multimodal Vision Plan

- Chapter 1 – Introduction.
- Chapter 2 – Existing & Future Conditions – *describes the state of Missoula's infrastructure today and discusses anticipated growth and development that the transportation system will be required to support.*
- Chapter 3 – Community Outreach – *provides an overview of the public input process and community's involvement in development of the plan.*
- Chapter 4 – Performance Measures & Project Ranking – *summarizes the measures and tools used to evaluate project performance and prioritize investments.*
- Chapter 5 – Exploring the Future – *outlines the development of alternative approaches to the future transportation system and discusses opportunities for shifting travel behavior.*
- Chapter 6 – Our Transportation Future – *details the recommended plan, including funding and project recommendations.*
- Chapter 7 – Implementation – *outlines the actions and tools to accomplish the vision expressed in the recommended plan.*

Appendices

Bound separately, the appendices provide additional information and data on what is presented in the main document.

- A. Community Outreach Documentation
- B. Full project list
- C. Project scoring and ranking
- D. Revenue projections
- E. Air quality conformity
- F. Travel demand model documentation

Missoula's Plans

Activate Missoula 2045, Missoula's LRTP, is intended to support, inform, and build upon other plans and policies in the region, including the following:

- Bicycle Facilities Master Plan (2016) – completed simultaneously with Activate Missoula 2045
- City of Missoula Growth Policy (2015)
- Missoula County Growth Policy (2015)
- Community Transportation Safety Plan (2013)
- Active Transportation Plan (2011)
- Mountain Line Long Range Transit Plan (2012)
- Missoula County Parks and Trails Plan (2011) and Master Parks and Recreation Plan for the Greater Missoula Area (2004)
- Master Sidewalk Plan (Draft 2006)
- City of Missoula Complete Streets Resolution (2016)
- City of Missoula Conservation & Climate Action Plan (2013) and Missoula Community Climate Smart Action Plan (2015)

Existing & Future Conditions

I. Existing Transportation System

In many ways, the form of the transportation system in the Missoula area today is the same as it was when it was first laid out decades ago. The decisions contemplated in this plan, Activate Missoula 2045, and in every Long Range Transportation Plan have the opportunity to influence the region for generations.

The development of the Activate Missoula 2045 Plan began with a systematic evaluation of the performance of the existing transportation system, followed by an estimate of the region's 2045 transportation needs based on anticipated growth. While there is a long list of needs for all modes of transportation, there is a limited amount of funding.

The transportation system in the Missoula MPO region is multimodal. Streets and highways, transit

CHAPTER CONTENTS

I. Existing Transportation System
II. Household, Population and Employment Growth
III. Previous Committed Transportation Projects
IV. Forecast 2045 Transportation Conditions
V. Projects and Costs to Address Future Need
VI. Anticipated Funding

and paratransit services, bicycle and pedestrian facilities, airports and rail facilities - all provide for the movement of people and goods in the region. How these systems connect to each other and interact influences the efficiency of the system. Providing a balanced and connected system that includes multiple options to move in and around Missoula is key to supporting residents, businesses, and freight through the area.

Streets and Highways

A well-connected and designed roadway network is essential for safe and efficient travel. Such a network can reduce travel times, reduce crashes on certain facilities, assist in emergency operations, and help make the most of limited transportation funding.

The Federal Highway Administration groups roadways into classes according to the character of service they provide. For the purpose of allocating state and federal highway funds, Montana's public highways and streets are placed on systems based in part on the functional classification system.

There are three basic highway classifications: Arterial, Collector and Local. All streets and highways are grouped into one of these classes depending on the character of the traffic and the degree of land access that they allow (Table 1). Figure 3 illustrates the street and highway system for the study region.

Congestion

Traffic congestion results when traffic demand approaches or exceeds the available capacity of the system. One way to gauge the level of congestion is grading a facility on its level of service.

Level of Service (LOS) is a letter designation that rates the congestion conditions on a particular type of facility. The Highway Capacity Manual defines LOS as "qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers." Just like in school, an A is better than a B and an F is failing. Figure 4 shows the range of LOS and what it generally translates to in terms of congestion.

Table 1. General Federal Functional Classification

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. Categories under the Arterial system include Interstate Highway and Freeway/Expressway, Principal Arterial, and Minor Arterial.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials. The Collector system in Missoula includes federal aid and local Collector designations.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

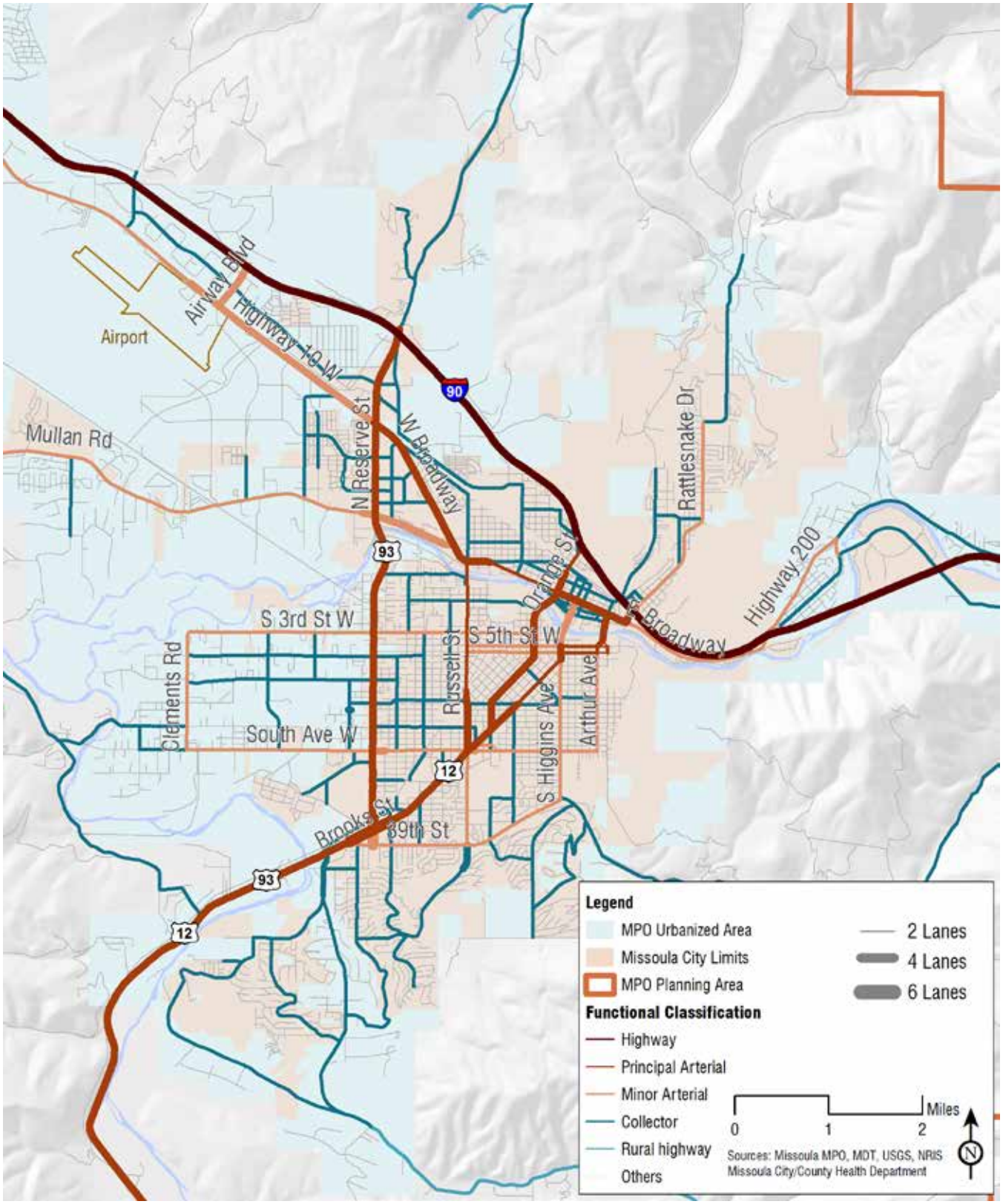


Figure 3. Street and highway system

Overall, the LOS in the Missoula metropolitan area is pretty good (Figure 5 and Figure 6). While there are some roadways that experience peak-hour congestion, most facilities function at a LOS of A to C (excellent to average). There are several locations that continue to experience congested travel at LOS E or F. Examples include Reserve, Russell, Brooks and Broadway. Congestion exists in Missoula, but not to the point that the overall street system will fail routinely.

Between 2010 and 2015, overall system function appears to have improved, with reductions in overall average daily vehicle miles traveled (VMT), average travel time, and delay. This doesn't mean there are fewer cars on the road (Table 2). Reduction in VMT can be a result of transportation projects that shorten a driver's travel distance. A number of significant projects were completed between 2010 and 2015, including 3rd Street reconstruction, 5th/6th/Arthur reconfiguration and traffic signal timing adjustment. All of these projects may contribute to VMT reduction by providing a more direct path to a destination. However, VMT may also be influenced by other factors such as transition to transit or non-motorized transportation and gas prices.

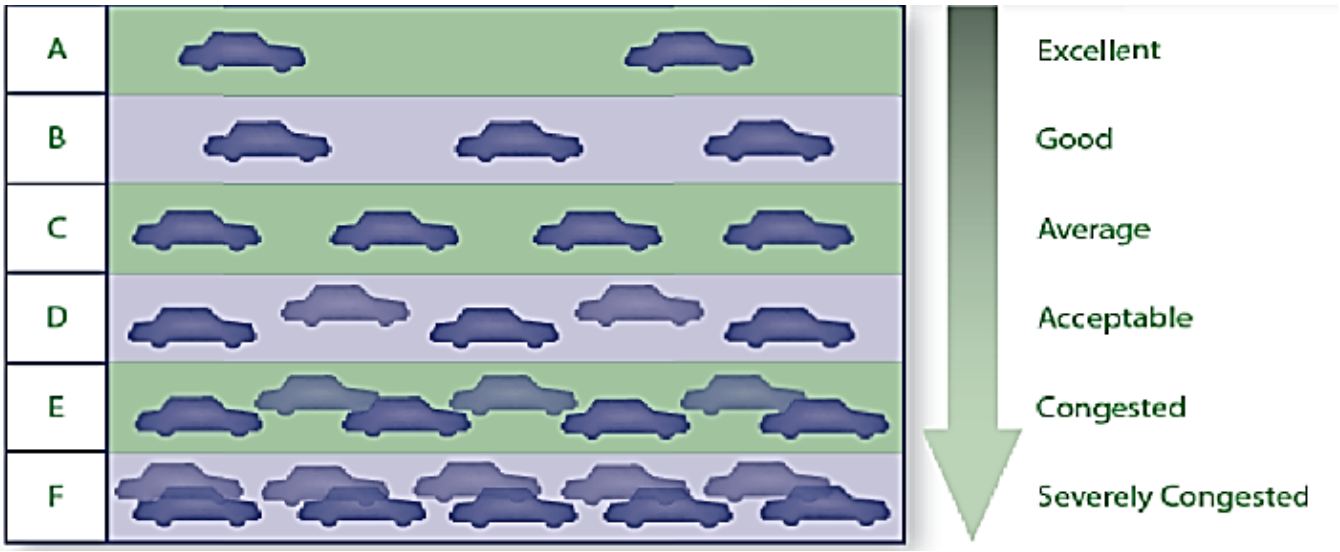


Figure 4. Level of Service (LOS) designation system

Table 2. 2010 and 2015 Congestion comparison

Daily Average	2010	2015
Vehicle Miles of Travel (VMT)	1,826,506	1,642,953
% Lane Mile Congested	1.41%	0.59%
Average Travel Time per trip (mins)	11.66	8.80
Average Delay per trip (mins)	2	1
Delay as a % of trip time	15%	9%

Source: MPO Travel Demand Model

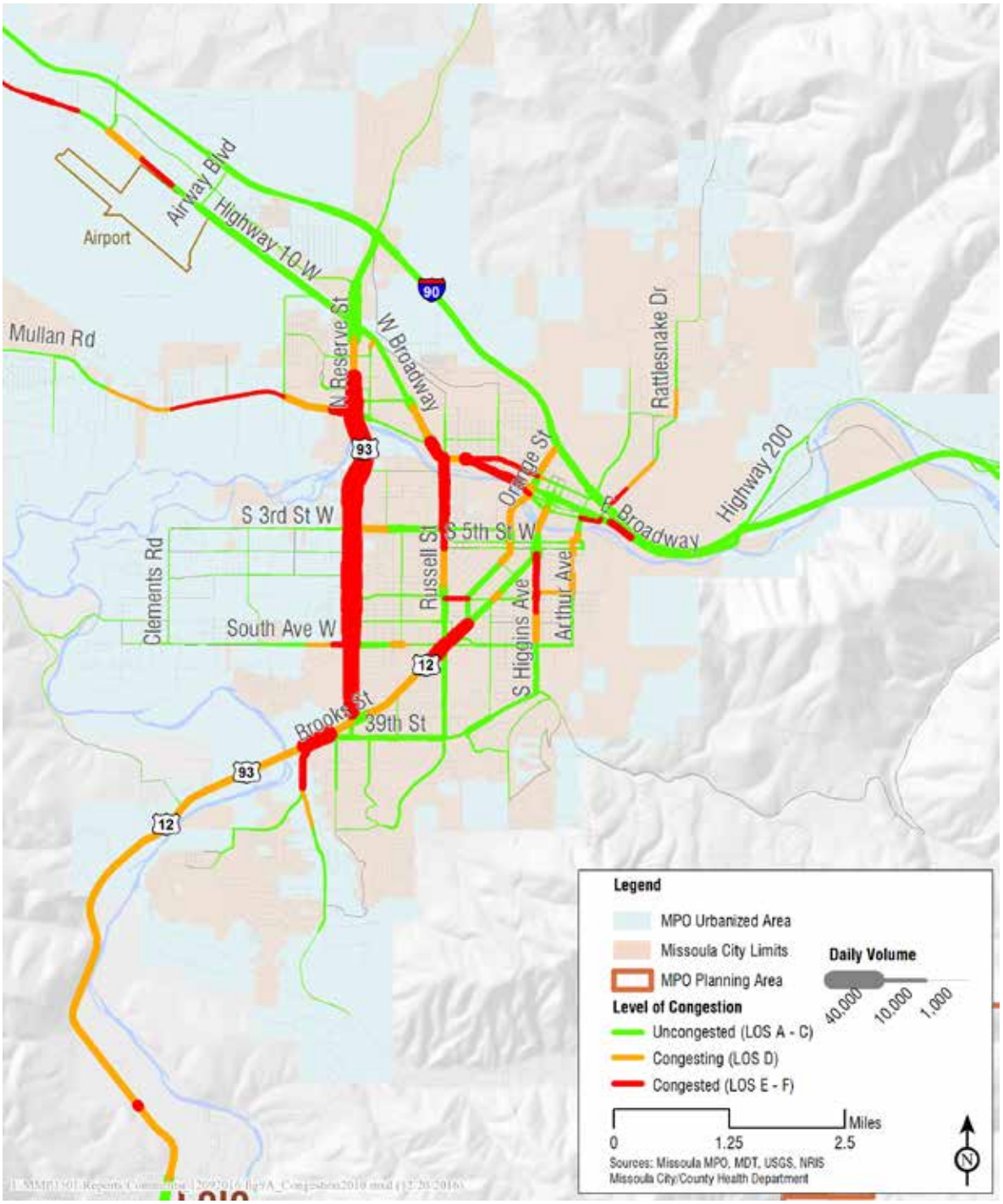


Figure 5. 2010 Congestion (Source: MPO Travel Demand Model)

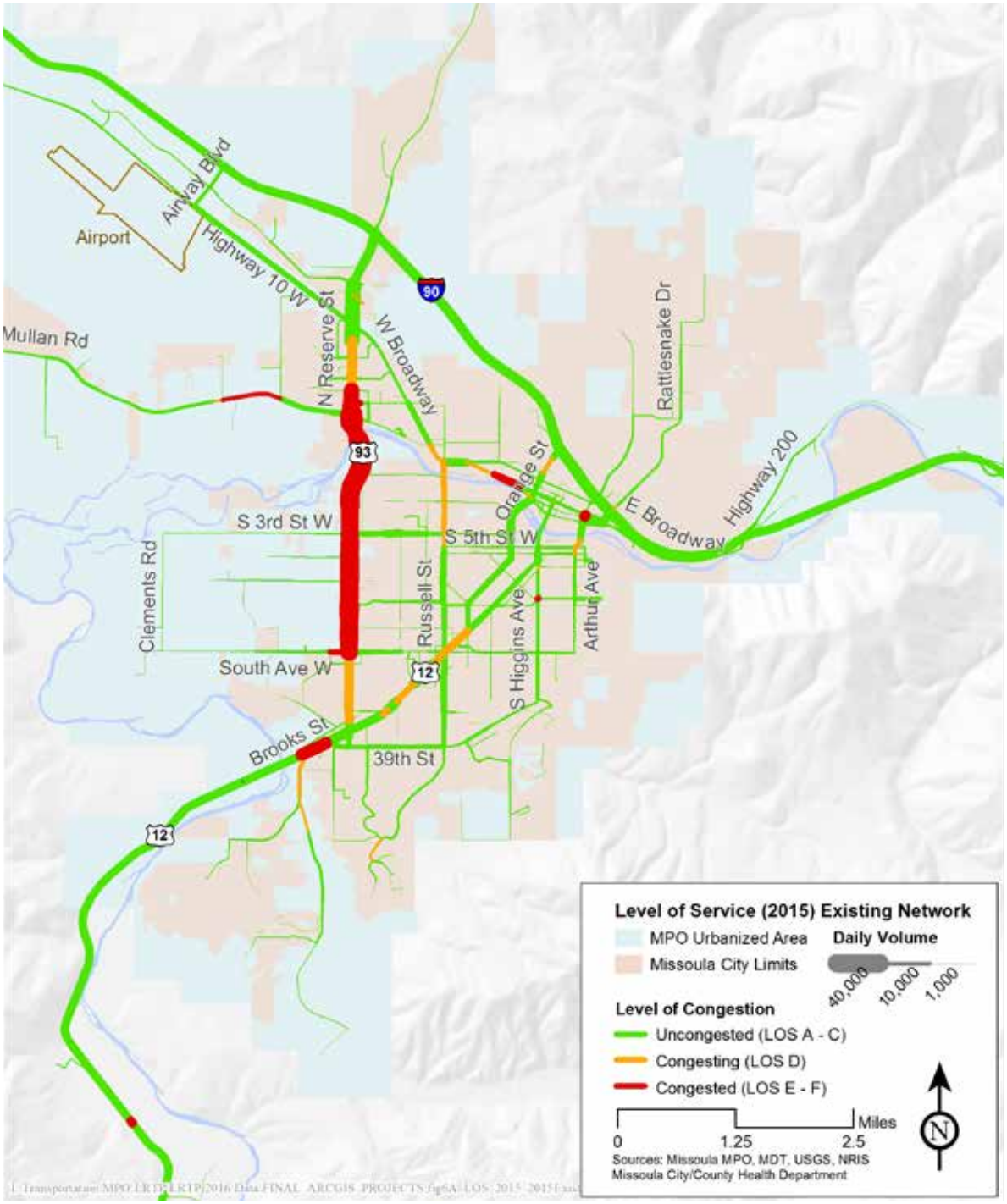


Figure 6. 2015 Congestion (Source: MPO Travel Demand Model)

Deteriorating sidewalks on the Russell Street Bridge

Incomplete sidewalks, poor roadway and bridge condition along Russell Street

Pavement Condition

Most roadways within the Missoula metropolitan area are paved. Pavement condition data is typically gathered every several years to help prioritize roadway maintenance activities. Collecting regular condition data is extremely important. In some cases, if a roadway does not receive required surface maintenance, it becomes necessary to completely reconstruct it, which is significantly more costly.

MDT maintains all major roadways, sometimes under an agreement with the City of Missoula, and the City maintains local streets. Unfortunately, sufficient pavement condition data for local City of Missoula roadways is currently not available or not recent enough for accurate analysis. Transportation partners should work together to ensure that this data is collected regularly and accurately.

Bridges

There are many bridges located throughout the MPO Planning area, all of which are inspected by MDT regularly. All bridges within the region are currently rated between fair to excellent condition except for four bridges: Russell, Madison, Higgins and Maclay, which are rated poor. All four of these bridges are scheduled for either replacement or major rehabilitation within the next 5 years.

Transit

Missoula-area transit service includes fixed-route transit, intercity transit, paratransit, senior transit, rural transit, and private transit services.

The Missoula Urban Transportation District (MUTD) provides the region with fixed route transit (Mountain Line buses), paratransit, and senior van services. Demand response service (paratransit) is any non-fixed-route system of transporting individuals that requires advanced scheduling by the customer including services provided by public entities, non-profits, and private providers.

Fixed-route services include any transit service in which vehicles run along an established path at preset times. Mountain Line had 12 fixed-route transit lines in 2010 and continues to provide 12 routes in 2015 as presented in Figure 7.

The transit coverage area within the City is extremely good with most of the region's population within 1/4 mile of a transit stop. Increased coverage area, higher transit frequency (Bolt! service), and Zero Fare for all has increased transit ridership from 2010 to 2015 by 56% as illustrated in Figure 8.

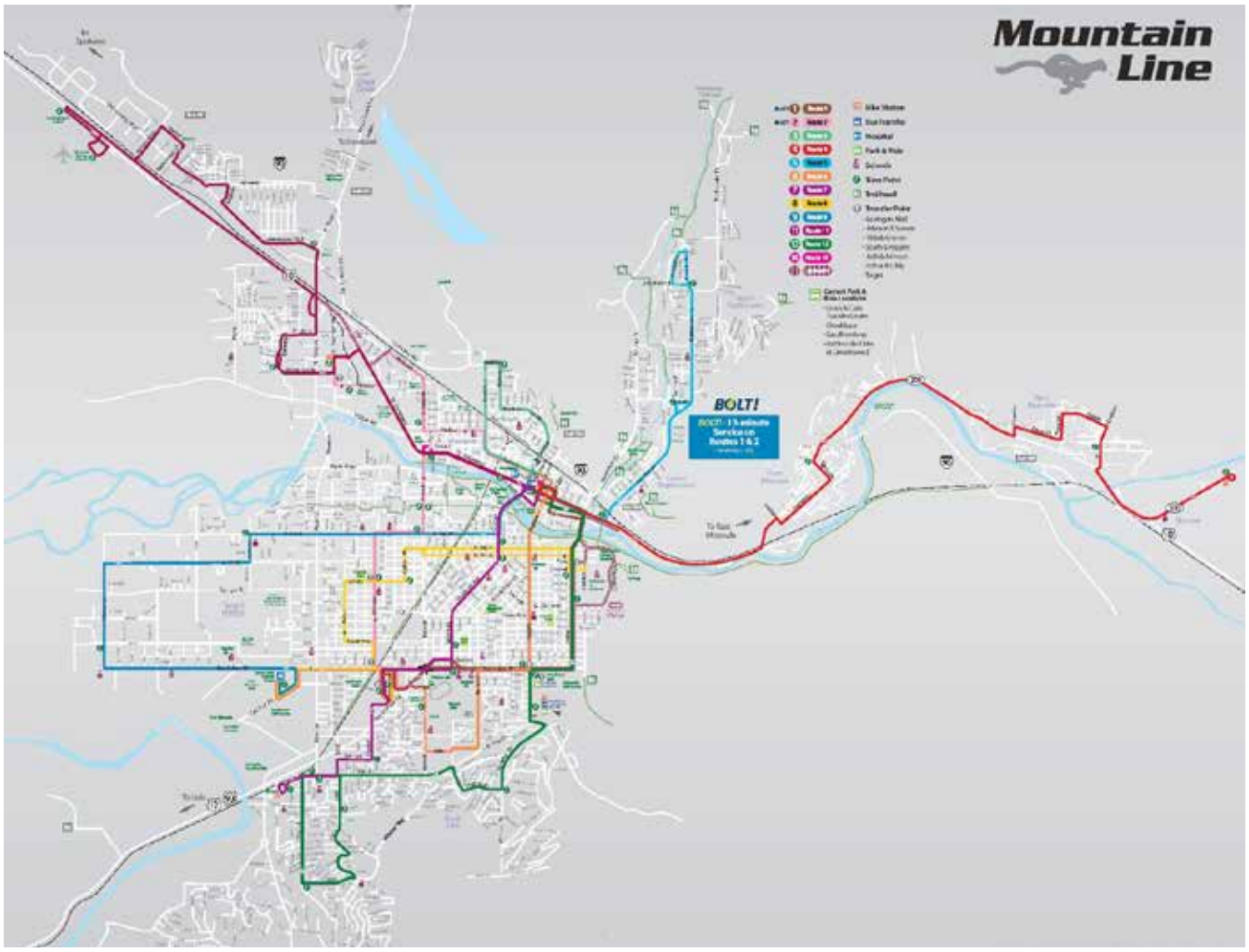


Figure 7. Mountain Line transit service routes (2015)

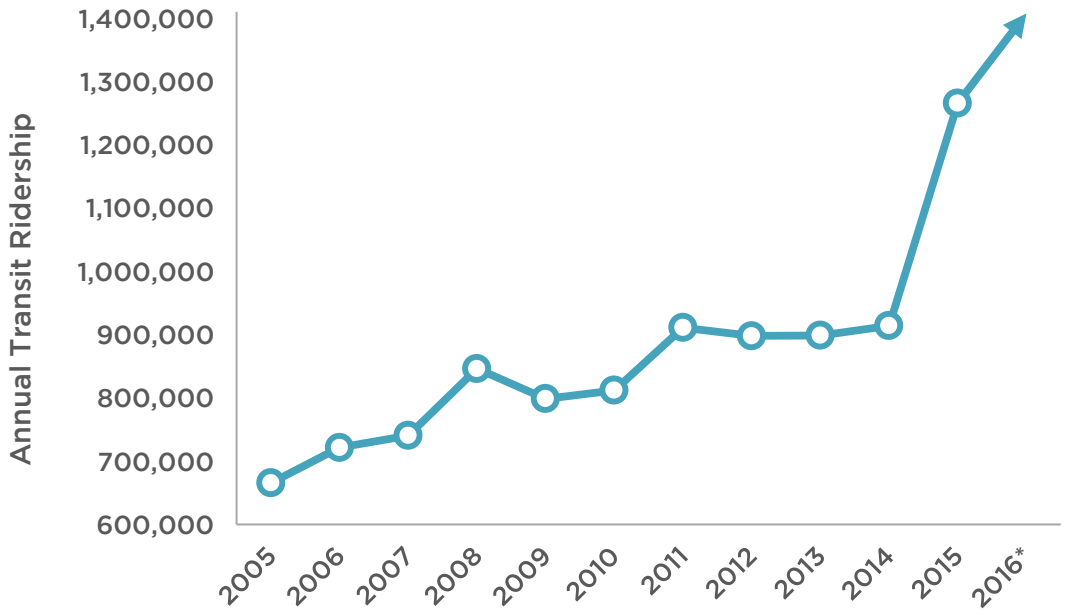


Figure 8. Mountain Line annual transit ridership, 2005-2016 (Source: Mountain Line rider count program)

Bicycle

Decades of development has resulted in a robust network of bike lanes, routes, and shared-use paths. Some intersections have incorporated bicycle specific improvements, and there is a genuine interest by all levels of County, City, and MPO staff to continue to make improvements.

Missoula's existing on-street system is generally limited to collector and arterial streets, though bicyclists frequently use local residential streets, even though they are not technically designated facilities.

Each type of facility has certain characteristics that are appropriate depending on the context and provide different levels of safety and comfort for riders. Table 3 outlines the different types of facilities in Missoula.

Many of the arterial roadways in Missoula have bike lanes (68 percent). Missoula has also been experimenting with lower stress facilities like the Higgins Avenue cycle track and the two-way cycle track along Maurice Avenue.

A protected cycle track along Maurice Avenue near the University of Montana

Table 3. Types of bicycle facilities

Type of Facility	Description
Cycle Tracks	Also known as Protected or Separated Bike Lanes, cycle tracks combine the user experience of a separate path with the on-street infrastructure of conventional bike lanes through various forms of physical separation from adjacent traffic. Cycle tracks are distinct from the sidewalk and can have many forms. In situations where on-street parking is allowed, cycle tracks are located to the curb-side of the parking (in contrast to bike lanes). Cycle tracks can be at street level, at sidewalk level, or at an intermediate level. By providing greater separation from motor vehicle traffic, cycle tracks offer a higher level of security than bike lanes and are attractive to a wider spectrum of the public. Missoula currently has two such facilities, a one-way raised cycle track on Higgins Avenue and a two-way street level cycle track on Maurice Avenue.
Bike Lanes	A bike lane uses signage, striping, and stenciling to designate a portion of the roadway for the preferential or exclusive use of bicyclists. Bike lanes allow bicyclists to ride at their preferred speed without interference from prevailing traffic conditions. Bike lanes can vary considerably with the amount of comfort they provide to users. A bike lane on a two lane collector with a 25 to 30 mph limit will feel much more comfortable than one on a higher speed arterial with multiple travel lanes. Similarly, the presence of on-street parking makes a bike lane less comfortable to users.
Buffered Bike Lanes	Buffered bike lanes are enhancements of conventional bike lanes by including a designated painted buffer space separating the bike lane further from the adjacent vehicle travel and/or parking lane. Missoula currently has buffered bike lanes on East Spruce Street and Arthur Avenue. Buffered bike lanes can be considered on any street where sufficient width exists.
Bike Routes	Bike Routes include paved shoulders and shared roadways where bicyclists and cars operate within the same travel lane, either side by side or in single file depending on roadway configuration. The most basic type of bikeway is a signed shared roadway. This facility is used to connect other bikeways (usually bike lanes), or designate preferred routes through high-demand corridors. Bike routes are typically signed with bike route or wayfinding signage and can have shared lane pavement markings. In contrast to most other communities, Missoula only designates bike routes on collector or arterial roadways. This results in situations where vehicle volumes and speeds are higher and can make sharing a lane uncomfortable to most bicyclists.
Shared Use Paths	Shared-use paths are paved off-street bikeways that are open to most forms of non-motorized use including skateboarders and roller bladers. Shared-use paths are physically separated from roadways either in their own right of way or paralleling a roadway. Shared-use paths that parallel roadways are called side paths. Shared-use paths can serve as transportation and/or recreation facilities. Missoula's most notable shared-use paths are the riverfront trail system, the Milwaukee Trail, and the Bitterroot Trail.
Unpaved Trails	Natural surface trails are present in many parts of Missoula. These facilities link neighborhoods, and provide access to recreational areas. Natural surface trails can be narrow and steep such as those on Mount Jumbo, or similar in configuration to a shared-use path like the Milwaukee Trail.

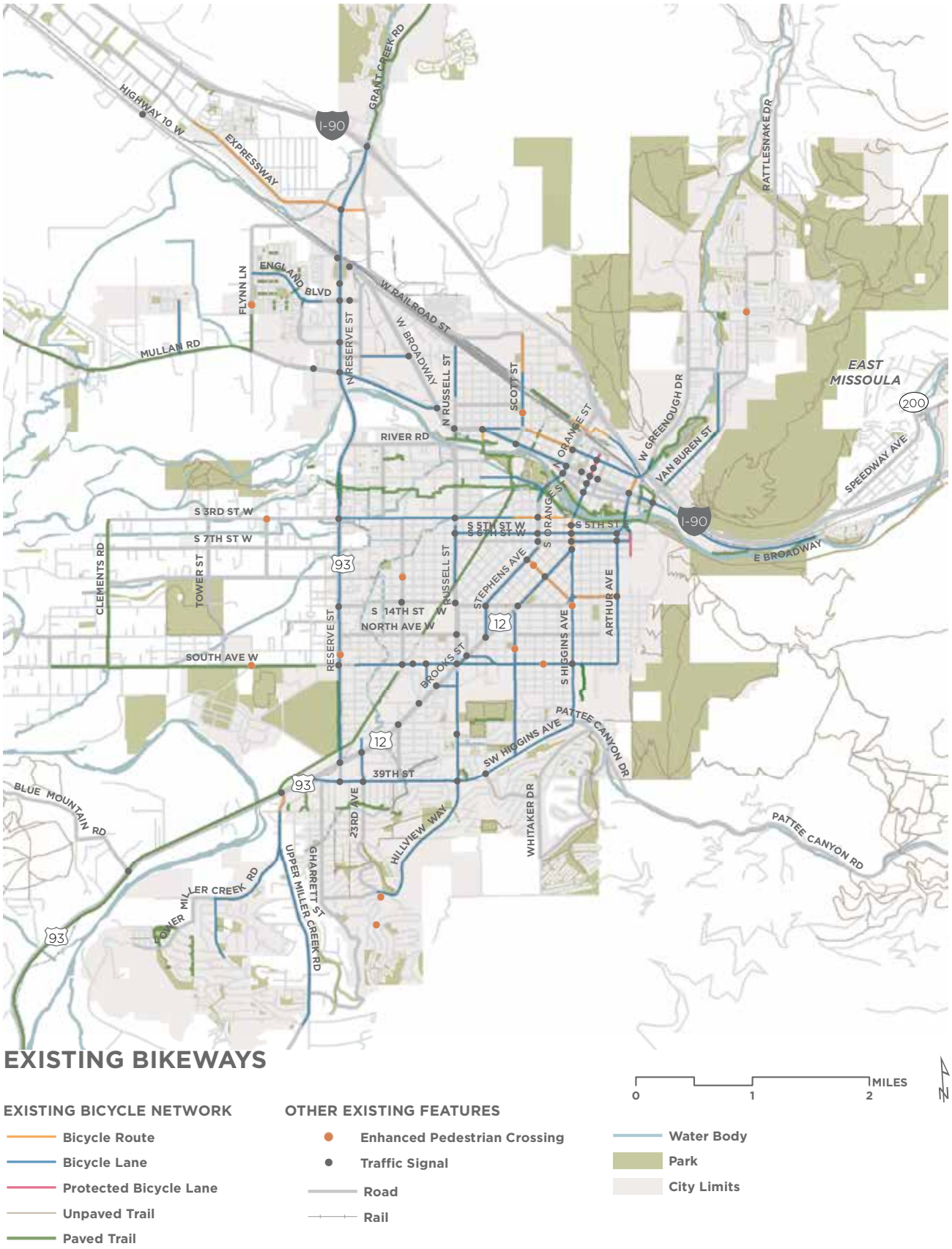


Figure 9. Existing bicycle facilities (2015)

The shared use pathway system along the Bitterroot Trail and Milwaukee Trail are vital components of the bikeway network. The new Missoula to Lolo Trail is a significant improvement to regional transportation. As such, bicycle activity between 2010 and 2014 has increased by 18 percent according to the MPO's count program.

While 68 percent of arterial roadways have bike lanes, several major collectors and arterial roadways still do not have bike lanes and bicyclists are expected to share the lane with vehicles on higher speed and volume roadways. While some people are comfortable with this, there are many riders (or would-be riders) who are not. Providing designated facilities on lower-stress local streets may help to further increase bicycling, making it a more viable option for transportation.

Pedestrian

Pedestrian mobility is provided through a network of sidewalks and shared use paths, tunnels, bridges, and street crossings. A map of the region's sidewalks and gaps is presented in Figure 10 for year 2015. According to the MPO's count program, pedestrian activity has increased by 25 percent between 2010 and 2014.

People walking and on bikes use the Van Buren Pedestrian Bridge

There are still many missing sidewalks throughout Missoula. Currently, sidewalk gaps are filled as new development occurs, with the City requiring developers to install sidewalks and other transportation infrastructure as necessary. Additionally, the Missoula Redevelopment Agency has constructed many sidewalks within Missoula Urban Renewal Districts (URDs) over the years.

Moreover, in 2010, the City started a sidewalk subsidy program to attempt to increase the rate of sidewalk installation. The program, which allocates up to $600,000 annually of road district funds, is intended to assist property owners with the cost of sidewalk installation at an approximate ratio of 2:1. Prior to the program, the City would require the property owner to fund 100 percent of the cost. It is undetermined thus far if the program has helped increase the rate of sidewalk completion, or if it has just lessened the cost-burden for property owners.

A sidewalk in the University neighborhood

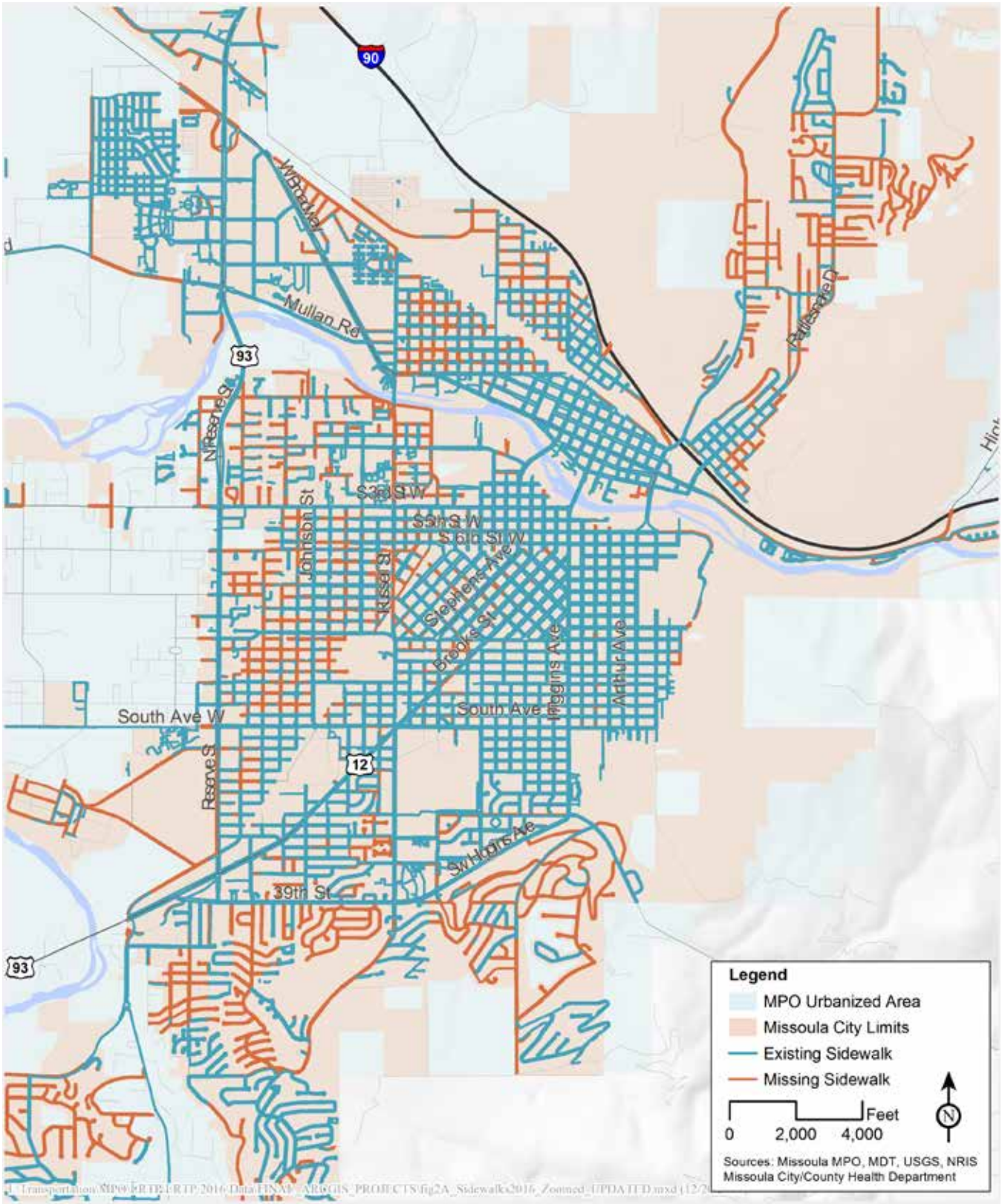


Figure 10. Sidewalk network, 2015 (Source: MPO sidewalk inventory

Safety and Security

The MPO tracks annual vehicle, pedestrian, and bicycle crashes utilizing data from MDT that is submitted by local law enforcement agencies. The MPO's Community Transportation Safety Plan (2013) establishes goals and actions for local agencies to help reduce crash totals and crash severity, through a combination of education, enforcement, engineering, and emergency medical services (EMS).

Figure 11 presents fatal and incapacitating crash averages for motor vehicles, bicycles, and pedestrians. Figure 12 through Figure 14 illustrate the locations of the vehicle, bicycle and pedestrian crashes that have occurred between 2007 and 2014. Most crashes occur along high volume corridors and busy intersections.

Understanding where crashes occur, their frequency, severity and causes, helps to identify possible improvements to reduce crashes and improve safety across the region. Crash rates provide a simple consistent measure that can be used to assess intersection safety. The rates are used in the project ranking process to help identify and prioritize those intersections where improvements should be evaluated. The rate indicates the number of crashes, based on historical data, that could be expected for every million vehicles entering an intersection (Table 4).

On a positive note, the number of fatalities and incapacitating injuries has decreased over the past ten years for vehicles and stayed similar for bicycles and pedestrians.

In addition, emergency services continue to have good response times, with most of Missoula within 5 minutes of an EMS or fire station. Figure 15 illustrates the location of emergency services and general response times from each location.

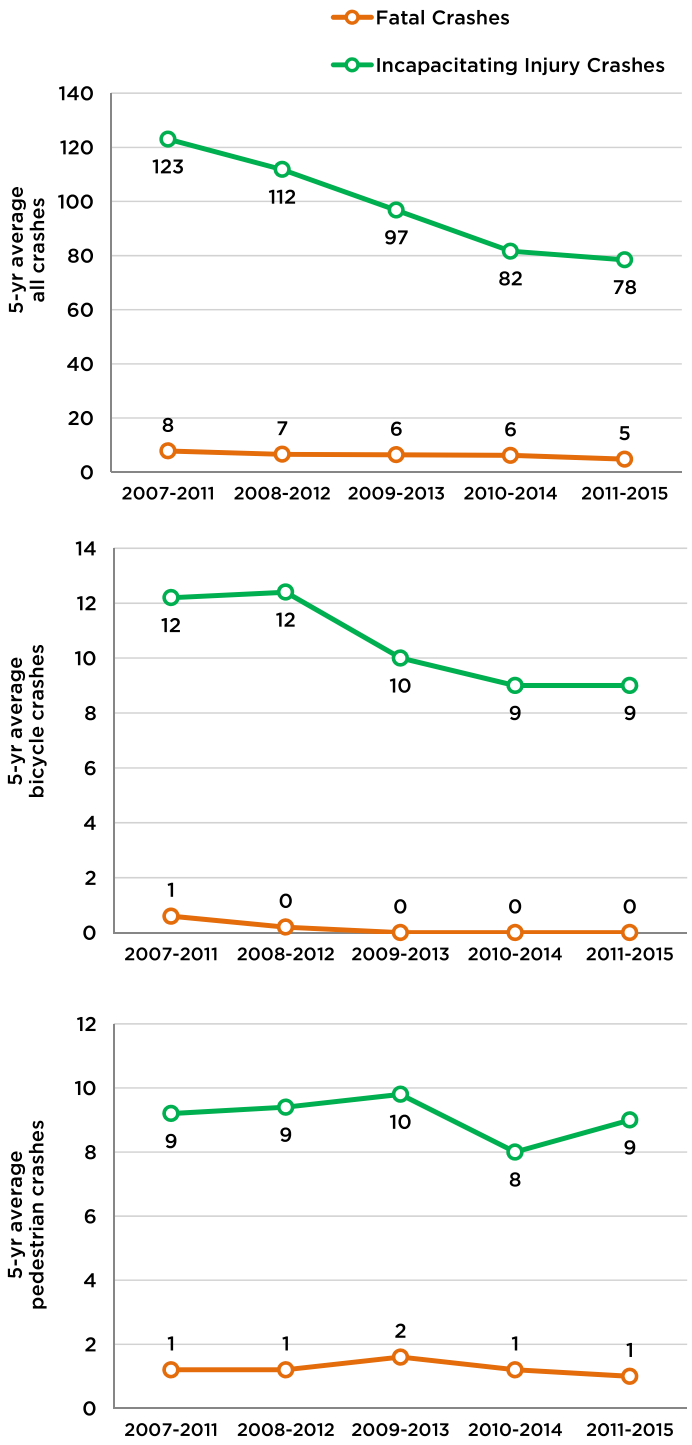


Figure 11. Five-year average fatal and incapacitating injury crash rates

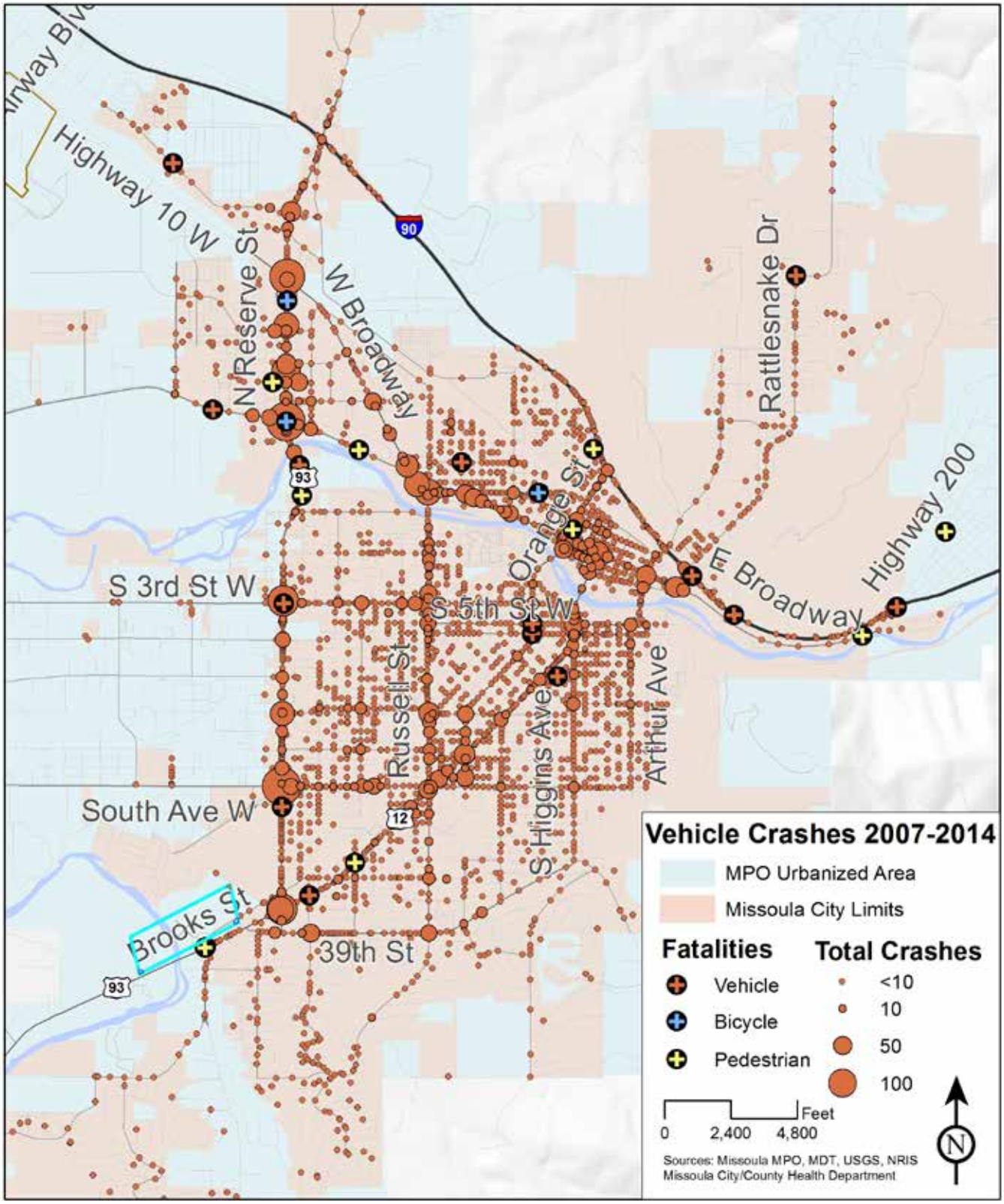


Figure 12. Motor vehicle crash locations, 2007- 2014

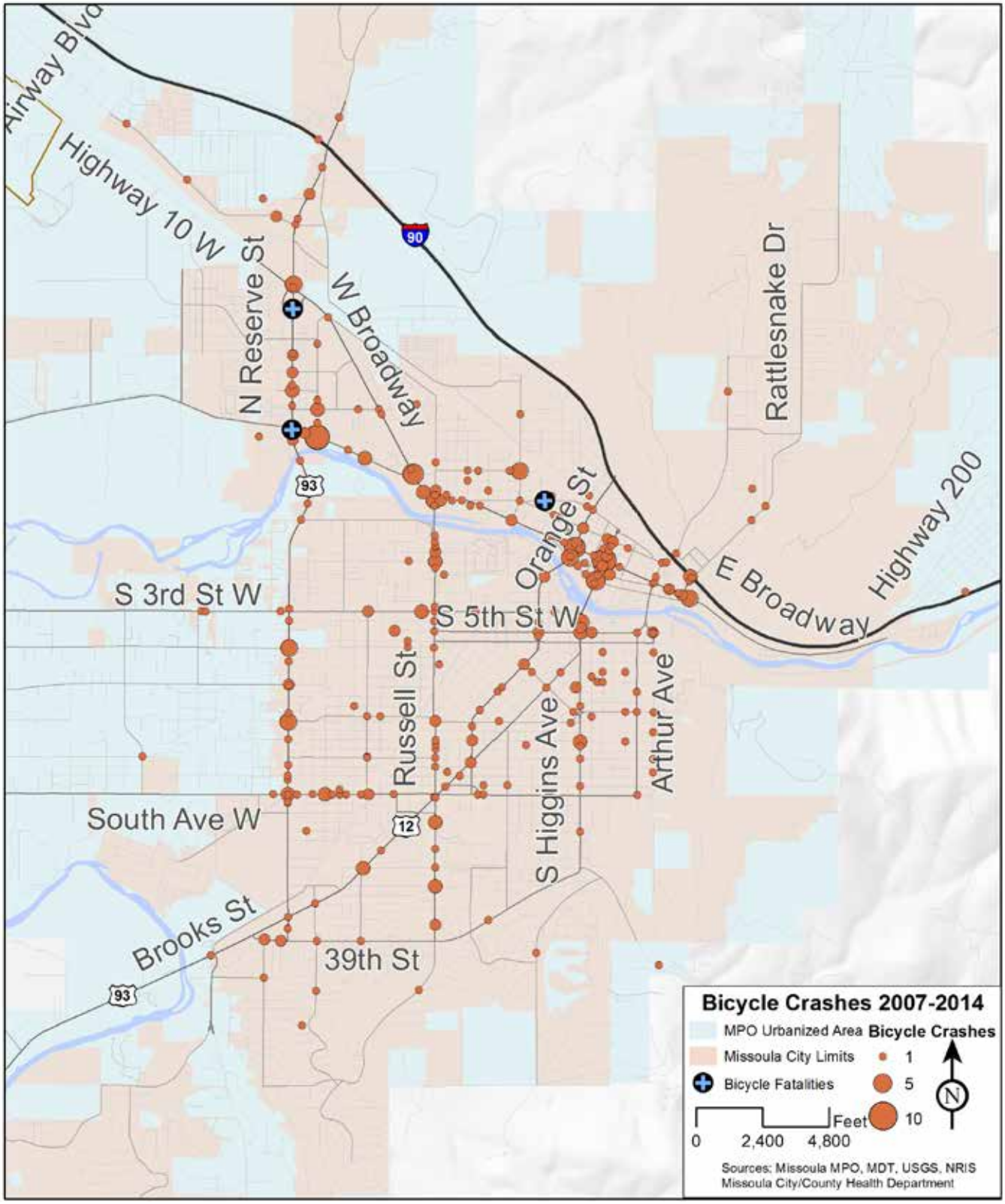


Figure 13. Bicycle-involved crash locations, 2007- 2014

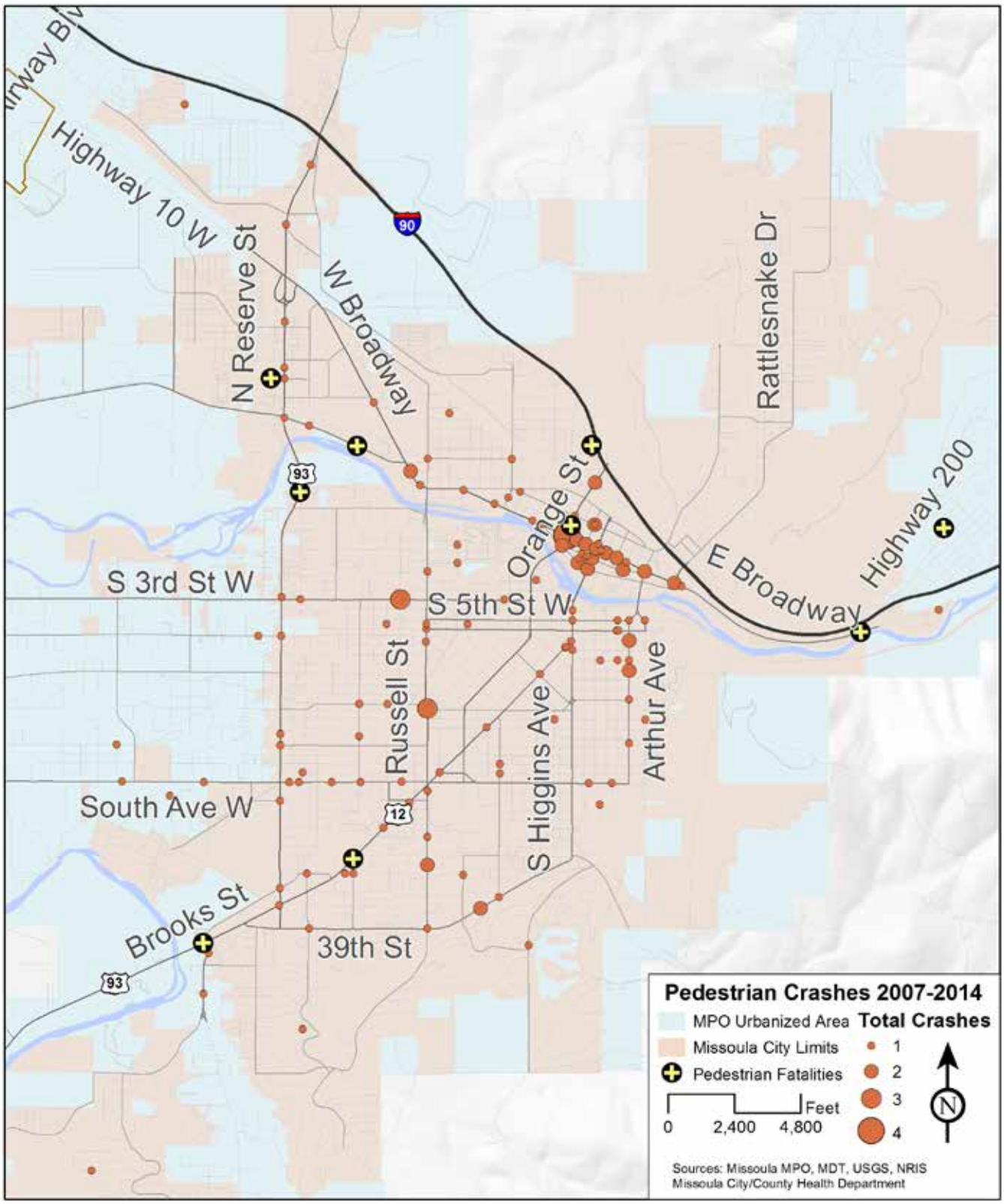


Figure 14. Pedestrian-involved crash locations, 2007- 2014

Table 4. High crash rate intersections (2010 - 2014)

Intersection	Total Crashes	5-yr Average	Total Cost*	Crash Rate†
Broadway & Reserve Ramp	134	27	$5,686,200	1.75
Stephens Ave. & Sussex Ave.	24	5	$1,334,100	1.47
Broadway & Van Buren St.	45	9	$1,616,100	1.10
Brooks & Bancroft St.	32	6	$ 1,520,100	1.09
Brooks & Russell St.	75	15	$3,226,200	0.97
Reserve & Mount Ave.	67	13	$3,958,800	0.85
Broadway & Madison St.	40	8	$1,237,500	0.81
39th St. & 23rd Ave.	25	5	$1,039,200	0.80
Higgins Ave. & S. 5th St. W	33	7	$1,240,800	0.79
Orange St. & I-90	25	5	$1,135,500	0.72
Broadway & Birch St.	44	9	$2,028,900	0.67
Reserve & American Way	47	9	$2,301,900	0.65
Orange St. & S. 6th St. W	27	5	$2,818,500	0.65
Reserve St. & 39th St.	24	5	$1,182,000	0.61
Stephens Ave. & Mount Ave.	24	5	$1,200,600	0.60
Brooks St. & Stephens Ave.	35	7	$1,538,700	0.58
Brooks St. & Oxford St.	36	7	$2,339,400	0.58
Orange St. & Spruce St.	26	5	$1,542,000	0.57
Reserve & I-90	34	7	$1,107,300	0.48
Reserve & Dearborn Ave.	32	6	$3,010,800	0.46
Brooks St. & Catlin St.	24	5	$1,002,000	0.45
Reserve & Clark Fork Dr.	35	7	$1,790,100	0.44
Reserve & Central Ave.	29	6	$2,308,500	0.41
Reserve & England Blvd	29	6	$1,777,800	0.40
Reserve & S. 5th St. W	24	5	$1,110,600	0.35

*Crash cost calculation taken from FHWA publication, *Intersection Safety: A Manual for Local Rural Road Owners*
†Crash rate is per million vehicles entering the intersection

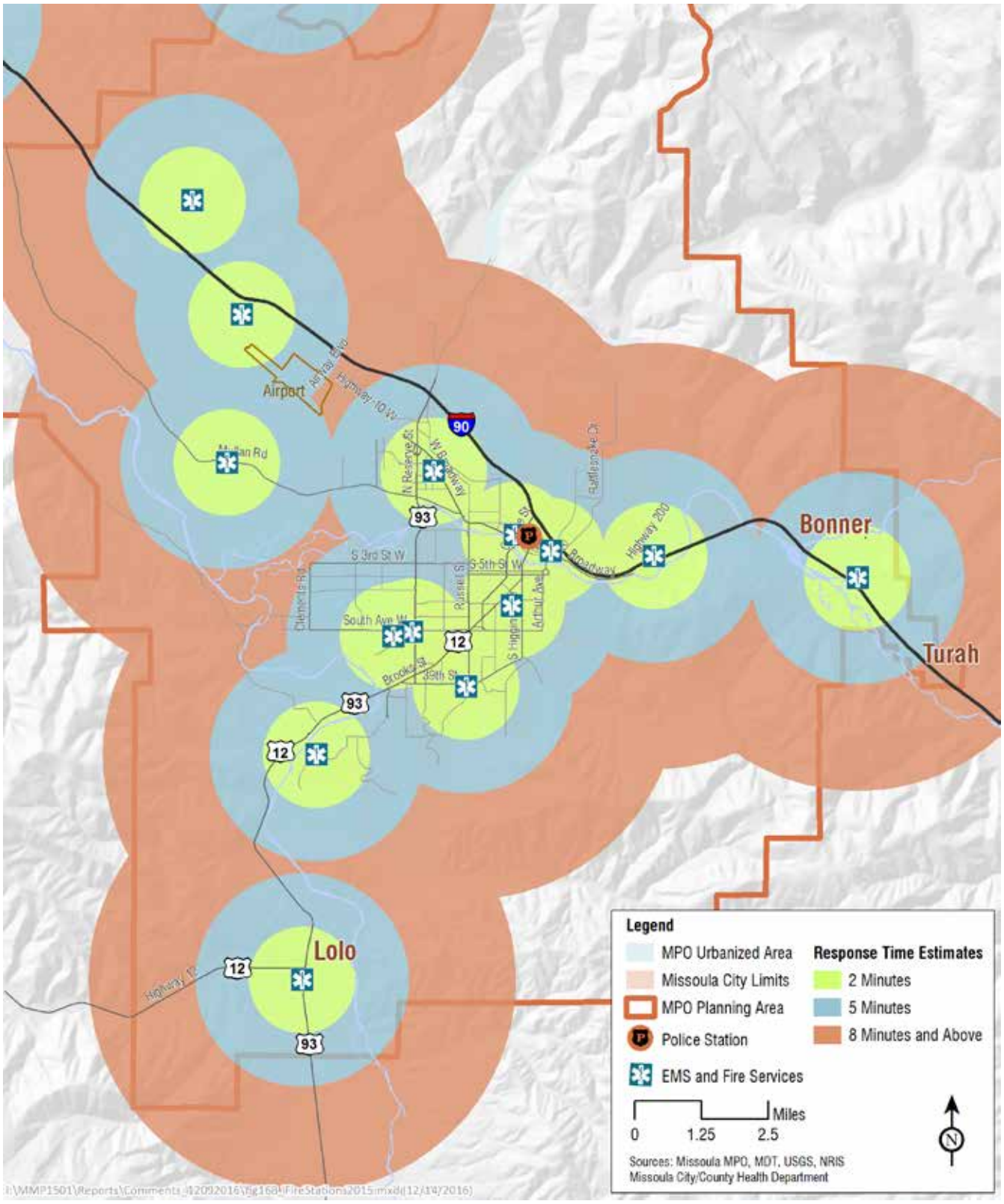


Figure 15. Response times for police, fire and emergency medical services.

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) are applications of smart transportation technologies to improve the flow and efficiency of the existing transportation network. The use of ITS technology on traffic signal systems can have multiple benefits, including reducing congestion, reducing greenhouse gas emissions and fuel use, improving safety at intersections, and reducing overall costs associated with costly intersection and roadway expansion projects. Figure 16 depicts the location of traffic signals in the Missoula urban area, which are largely owned and operated by MDT.

Over the past few years, MDT has updated all the signal controllers to be ITS compatible. Nine of these controllers contain transit signal preemption modules for future use. MDT is also currently working to develop a statewide traffic signal system plan, which will include recommendations for ITS improvements to be implemented in signal systems across the state over the next decade, with a focus on Montana's urban centers.

In the meantime, local efforts continue to implement ITS improvements when possible. For example, Mountain Line transit has implemented smart phone transit arrival technology allowing transit users to see where buses are in real-time.

Transportation Options

Transportation Options refers to a number of programs operating in the Missoula region that are designed to maximize the people-moving capacity of the transportation system by increasing the number of persons in a vehicle, or by encouraging citizens to utilize other modes of transportation, other than a single-occupancy vehicle. Encouraging the use of other transportation modes is an important strategy for a number of reasons. Most importantly, it helps lessen the stress on an already constrained roadway network by reducing congestion and helping to eliminate or postpone roadway improvements. Additionally, utilizing other options helps reduce pollution, greenhouse gases, and contributes to individual health. The organizations leading these initiatives in Missoula include the following:

- **Missoula in Motion (MIM)** – offers individual and employer-based education and outreach programs to encourage the use of sustainable transportation.
- **ASUM Transportation** – operates the University's transit system (which is available to all Missoulians) and on-campus bike-share program.
- **Missoula Parking Commission** – manages on and off-street parking in downtown and the University district.
- **Missoula Ravalli Transportation Management Association (MRTMA)** – operates the regional iRide Vanpool program.
- **Mountain Line** – provides fixed route transit, paratransit, and senior van service.
- **City of Missoula Bicycle Pedestrian Office** – provides safety and encouragement education to the community and works with partners to plan bicycle infrastructure.

MRTMA operates a regional vanpool services called iRide, promoting ridesharing for those commuting longer distances

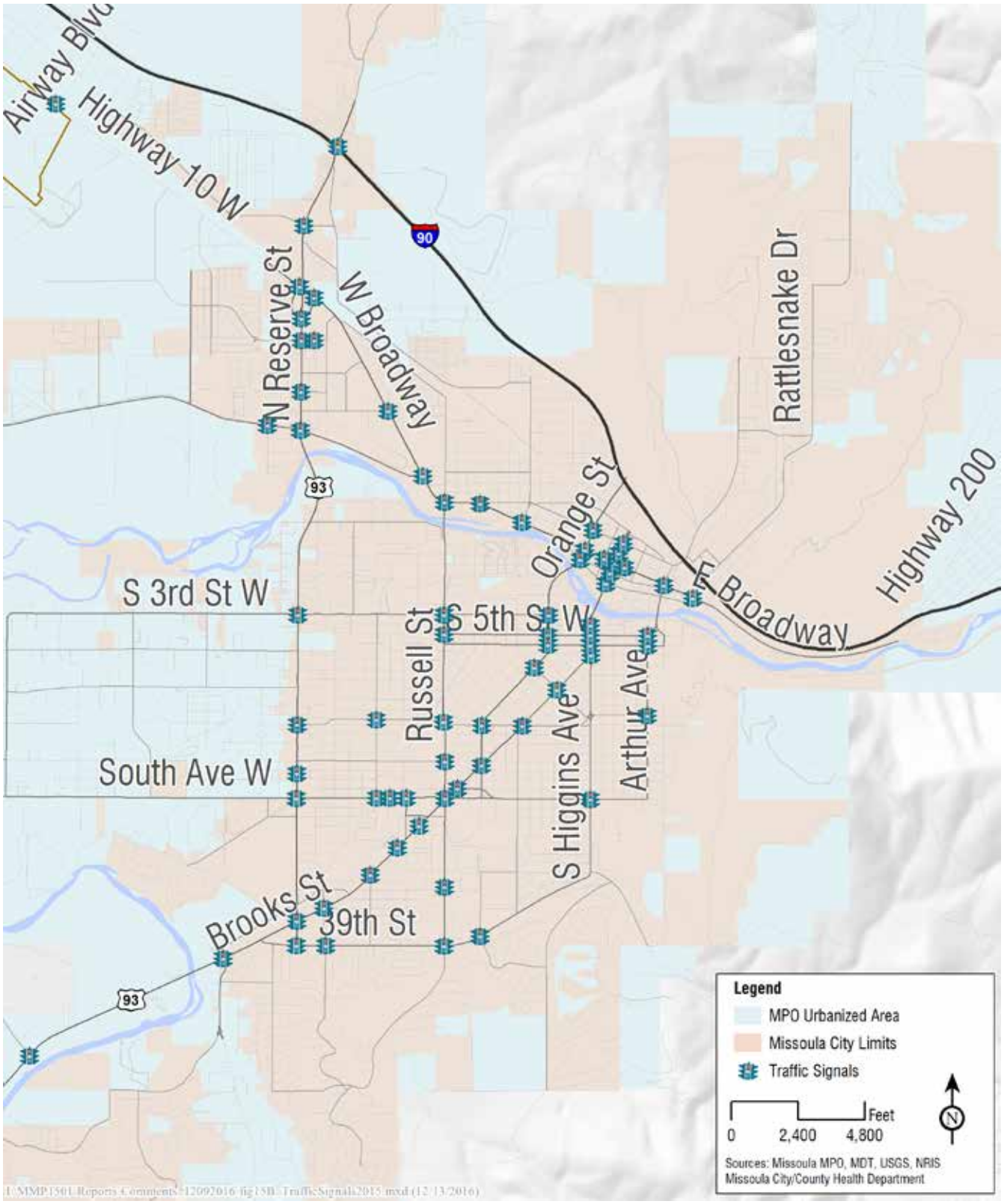


Figure 16. Missoula's traffic signal system, 2015

Intermodal – Aviation, Rail, Freight

Freight destinations are primarily along West Broadway near the airport and have good highway, rail, and air access. Figure 17 and Figure 18 illustrate commercial truck travel into and out of the state by ton and the average annual daily truck trips on western Montana highways in 2016, respectively. Figure 19 illustrates the freight routes and generators in the Missoula region.

Based on statistics available from MDT, the Missoula International Airport had 695,529 passenger arrivals and departures in 2015. Airport activity is expected to grow as additional flights continue to be added.

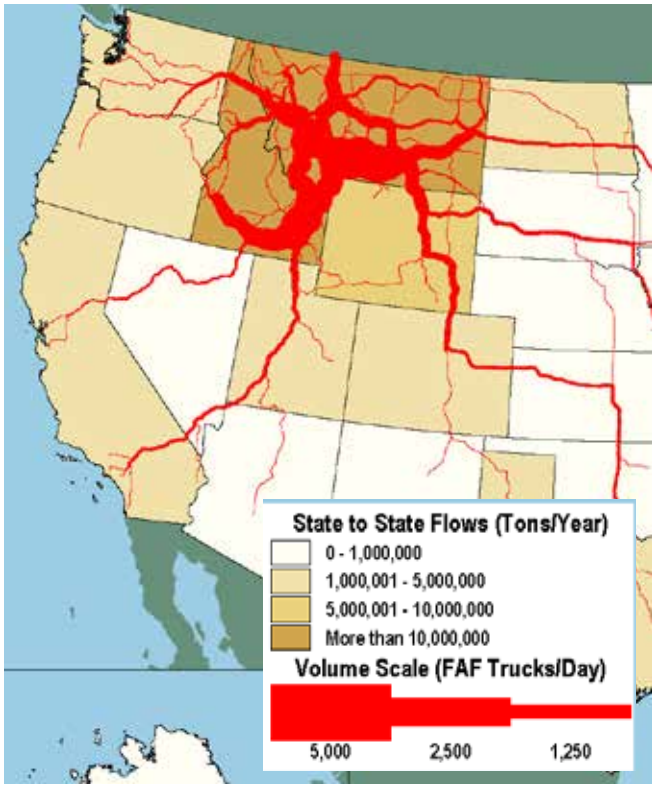


Figure 17. Projected major truck flows in 2040 (source: MDT)

Figure 18. Annual average daily truck traffic, 2015 (source: MDT)

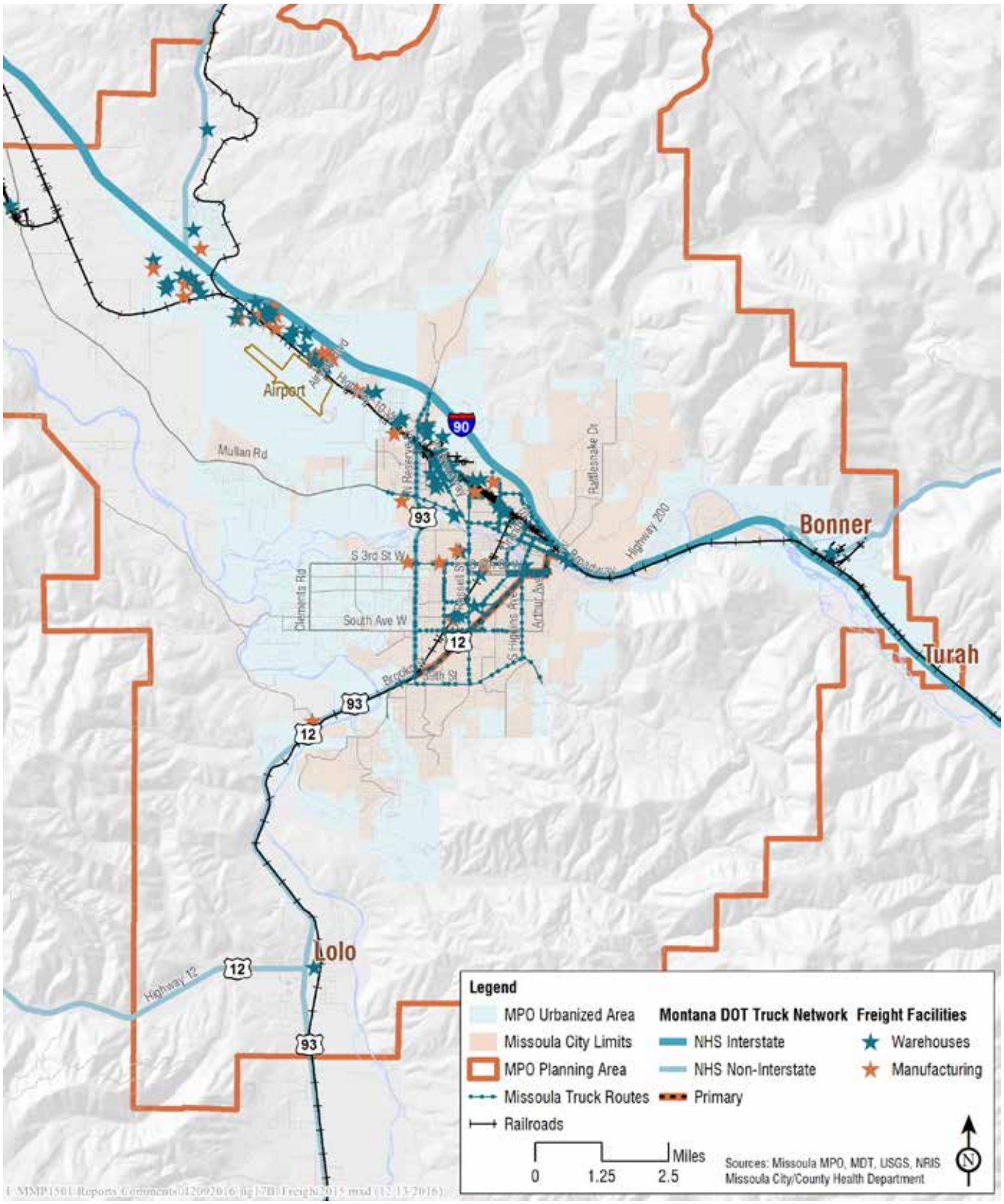


Figure 19. Freight routes and generators (manufacturing and industrial centers)

Rail Activity in the Missoula Region

Missoula has multiple rail lines that serve the region operated by Montana Rail Link (MRL). In 2015, there was an average of 17.0 loaded and empty trains that traveled through Missoula. This average was slightly less than the 2014 average of 17.8 empty and loaded trains. MRL attributes the decrease to varying economic conditions, including the strength of the US dollar, weak commodity prices and the slowing of the international and domestic economy, and they anticipate this to continue (as of 2015).

There are numerous at-grade and separated-grade railroad crossings in Missoula, many with safety features such as cantilevered gates and flashing lights, such as on W. Greenough Dr. where the Hiawatha rail line intersects, and on Broadway, where the Bitterroot rail line intersects. Other crossings may include less formal safety infrastructure in areas where traffic volumes, vehicle speeds, and train activity are less. Some of these features include warning signs, such as a "crossbuck." MRL dispatch currently contacts Missoula County 911 dispatch to notify them when crossings will be blocked by train activity, which under normal operations lasts less than 15 minutes[1].

The heaviest rail activity in Missoula occurs on the Hiawatha rail line, which generally parallels the I-90 and Broadway corridors. The main switching yard is located near the north end of downtown and therefore this area sees the highest level of rail activity, raising noise, pollution, and emergency response concerns. For the last several years, the Bitterroot rail line has experienced very little activity, and is currently being used for rail car storage south of Missoula in the Bitterroot valley.

1 Email from Jim Lewis, Chief Sales/Marketing & Information Officer, MRL, Inc., December 8, 2015

Passenger Rail

The Amtrak North Coast Hiawatha passenger rail service through Missoula was discontinued in 1979 as a result of national route rationalization required by the U.S. Congress in 1978. Discussion of potential return of passenger rail service on the old North Coast Hiawatha route has been ongoing since 1978. In 2010 an Amtrak study found substantial subsidy would be required for capital and operating costs to reinstate the service. Despite this, Objective 5 of the Economic Health section of the 2015 City of Missoula Growth Policy calls for the exploration of developing passenger rail service in the Missoula region to support regional and national connectivity, and community conversations about this possibility continue. In the meantime, the City Growth Policy suggests preserving the right-of-way along rail lines in order to potentially convert them to trails and/or transit routes.

Top: cantilevered gates and flashing lights at W. Greenough crossing. Bottom: Bitterroot line railroad crossing at Broadway.

Environmental Issues

The National Environmental Policy Act (NEPA) requires full disclosure of environmental impacts of federally funded transportation projects. Projects must seek to avoid impacts to resources or must include measures to either minimize or provide compensation or mitigation for those impacts. In addition, all state-funded projects are subject to environmental review under the Montana Environmental Policy Act (MEPA).

The environmental areas discussed below are those that could have an effect on the citing of specific transportation projects. In some cases, sensitive resources offer important constraints that can preclude the construction of a project in that location, or require a project to be altered. In other cases, the presence of a resource may not preclude development of a project but may be an important consideration. Figure 20 provides a detailed map of known environmentally sensitive areas.

Additionally, environmental sensitivity involves the consideration of potential negative impacts of transportation projects on minority and low-income populations (some minority groups are identified in Table 5 and Table 6). This includes ensuring that these populations do not receive disproportionately high and adverse human health and environmental effects.

Figure 21 depicts the geographic distribution of potentially vulnerable or underrepresented populations in Missoula, by census block group (census tract for disability). The data sets do not encompass all potentially underrepresented groups, but illustrate areas of Missoula that may be under served by the current transportation system or at risk of greater impacts from planned projects.

Table 5. Percentage household income below poverty level

Jurisdiction	% below poverty level
Missoula County	15.8%
Montana	14.4%
United States	14.7%

Source: U.S. Census, American Community Survey 2011-2015 5-yr Estimate

Table 6. Percentage of minority populations

Jurisdiction	Hispanic	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander
City of Missoula	3.5%	1.4%	4.3%	2.6%	0.2%
Missoula County	3.0%	1.0%	4.2%	2.2%	0.2%
Montana	3.3%	0.9%	8.1%	1.2%	0.2%
United States	17.1%	13.8%	1.7%	6.1%	0.4%

Source: U.S. Census, American Community Survey 2011-2015 5-yr Estimate

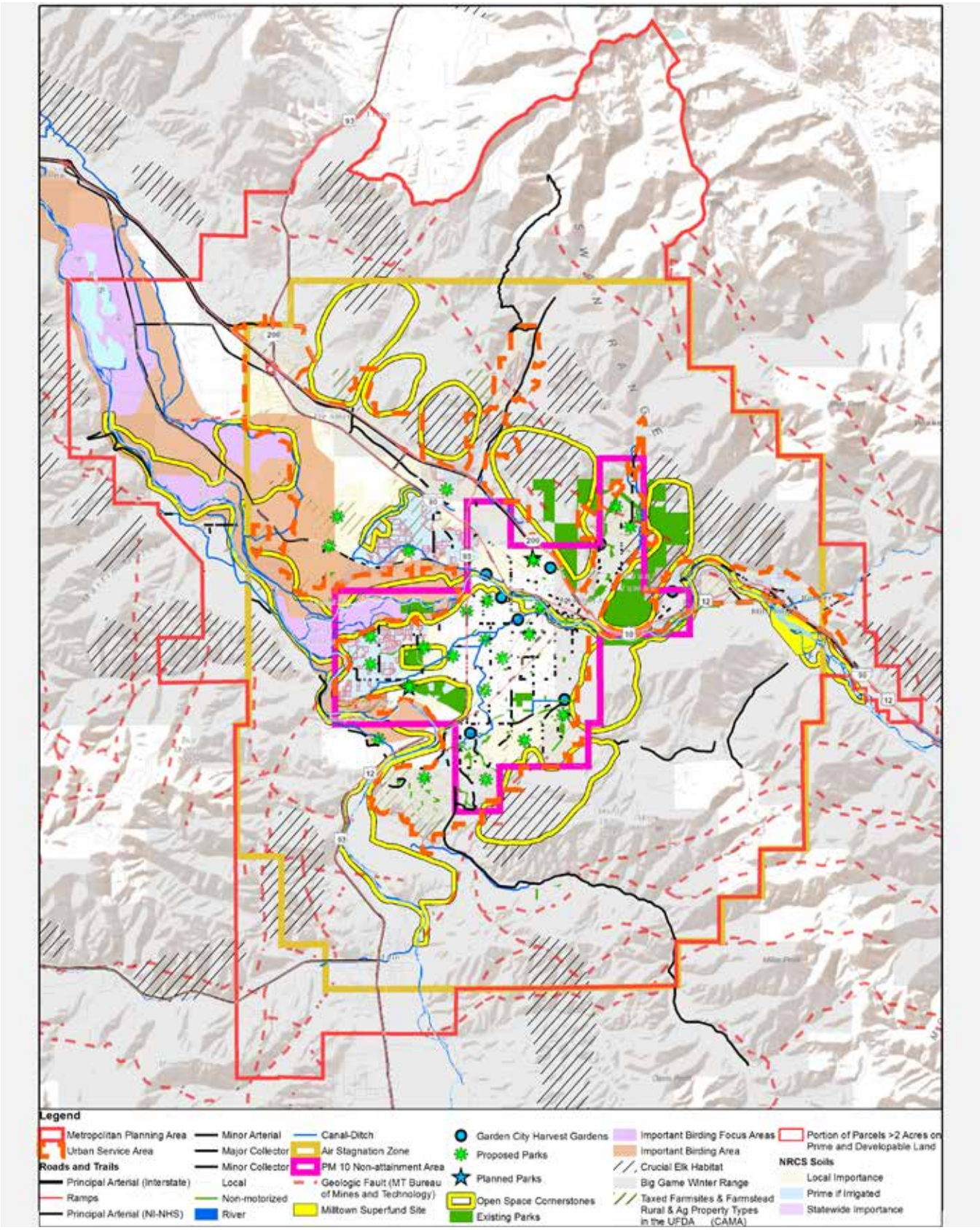


Figure 20. Natural resource and environmentally sensitive areas

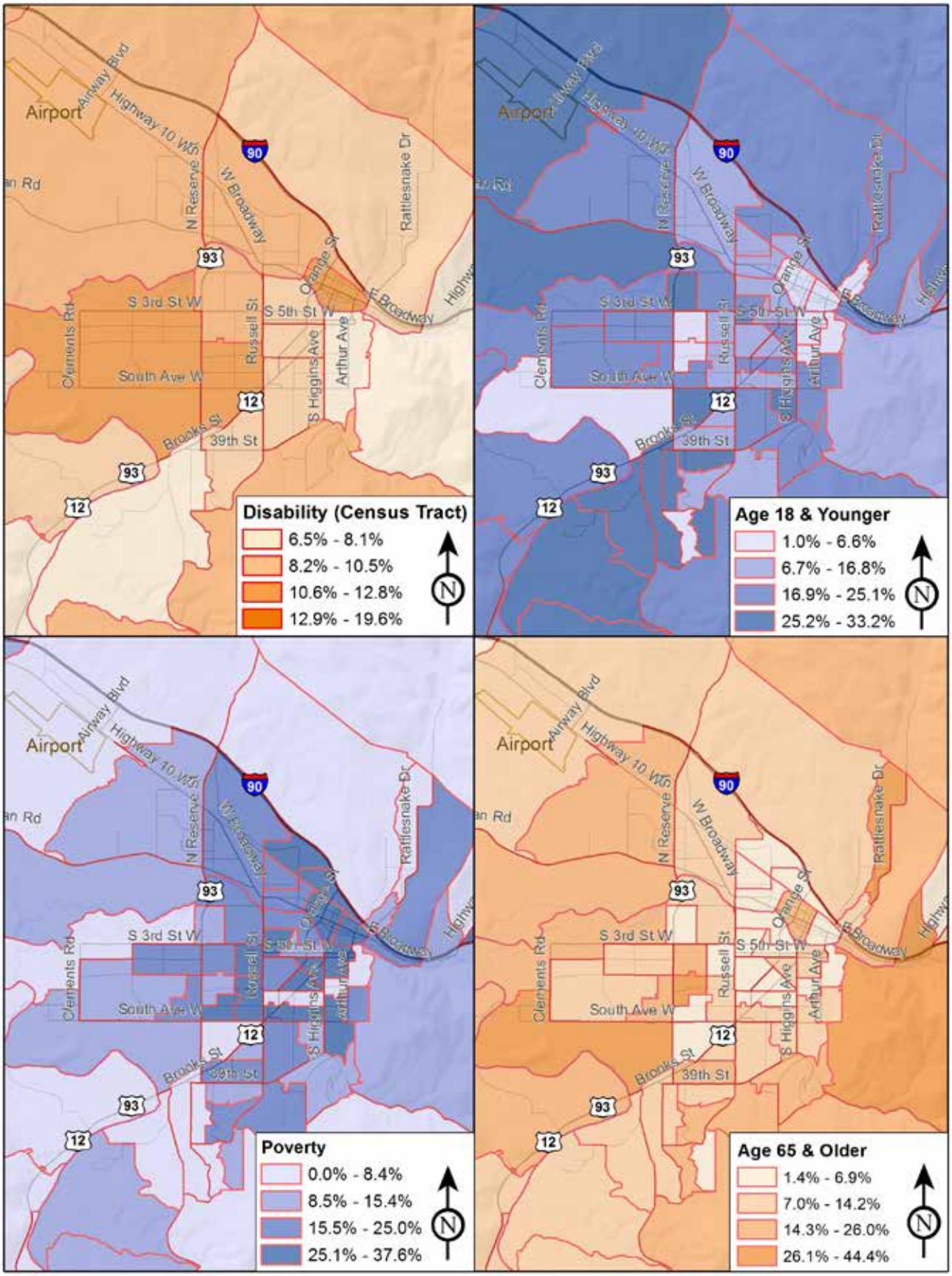


Figure 21. Vulnerable and underrepresented populations (Source: U.S. Census, 2010-2014 ACS 5-year average)

Mode Share

An important mobility measurement for the Missoula region has been mode share, or the percentage of people using the various travel modes. Mode share is tracked through the Census American Community Survey (ACS) on an annual basis and is a reliable and accurate data source. However, the ACS data only captures how citizens travel for their commute to and from work, not all types of trips. Despite this limitation, understanding mode share for commute trips, which are trips that typically occur regularly and at peak times, still helps us to understand overall travel choices.

The Missoula urbanized area and the City have 5-6% less drive alone commuters than the state average. For bicycle and pedestrian commuters, the state average is 6.4% compared to 14.7% within Missoula's urbanized area (Figure 22).

Figure 22. Means of transportation to work in the Missoula Urbanized Area. Source: 2010-2014 ACS 5-year averages

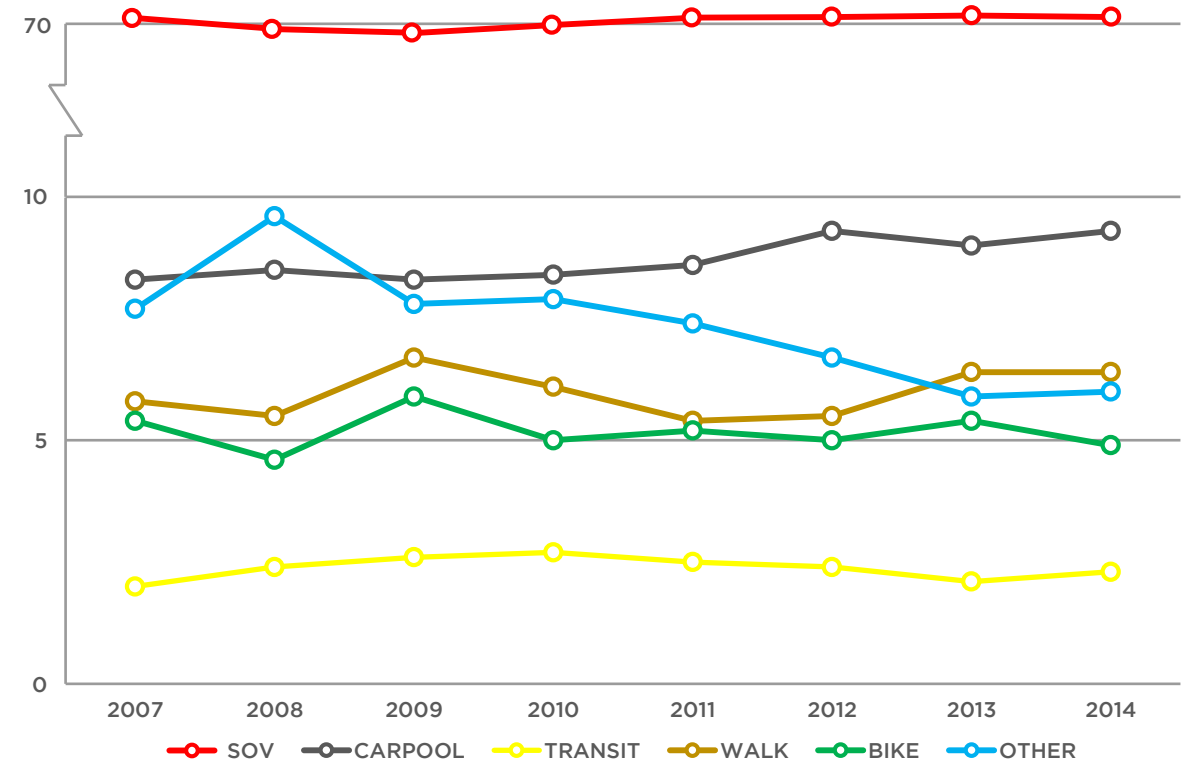


Figure 23. Historic mode share for the urbanized area

Although Missoula commuters drive alone less than the state average, the percentage of drive alone commuters has remained roughly the same since 2007 (Figure 23). Drive-alone commute trips account for about 67,000 of the total trips per day on Missoula area roads. As Missoula continues to grow, one way to accommodate future trips is to facilitate travel for transit, walking, biking, and carpool/vanpool.

Technology and Mobility

In the context of transportation, mobility means the ability and level of ease of moving people, goods and services. Recent advances in technology are already having an impact on transportation and mobility throughout the world, both on a large and small scale.

Recent Gains in Mobility-related Technology

Driverless vehicle technology has been one of the most exciting and most talked about transportation technology advances over the last several years. Many companies are now working to develop fully autonomous personal vehicles, as well as fleet vehicles, buses, and trucks. In fact, many industry followers expect driverless buses and trucks to be widely adopted first, prior to full deployment and adoption of personal driverless vehicles. It is expected that by 2030, the use of fully autonomous vehicles will be widespread, with deployment occurring first in larger urban areas by private firms operating multi-vehicle fleets.

Autonomous trucks can have safety and fuel efficiency benefits, but may lead to loss of jobs associated with the freight trucking industry.

Apart from driverless vehicles, there have been many other technology-related transportation advancements, including those related to mobile technology, such as ride sharing services (e.g. Uber and Lyft), congestion monitoring apps (e.g. Waze), transit arrival apps, and "smart" parking technology improvements. Missoula currently takes advantage of many of these technologies and attempts to be proactive in planning for and utilizing new technology.

Impacts of Future Improvements in Technology

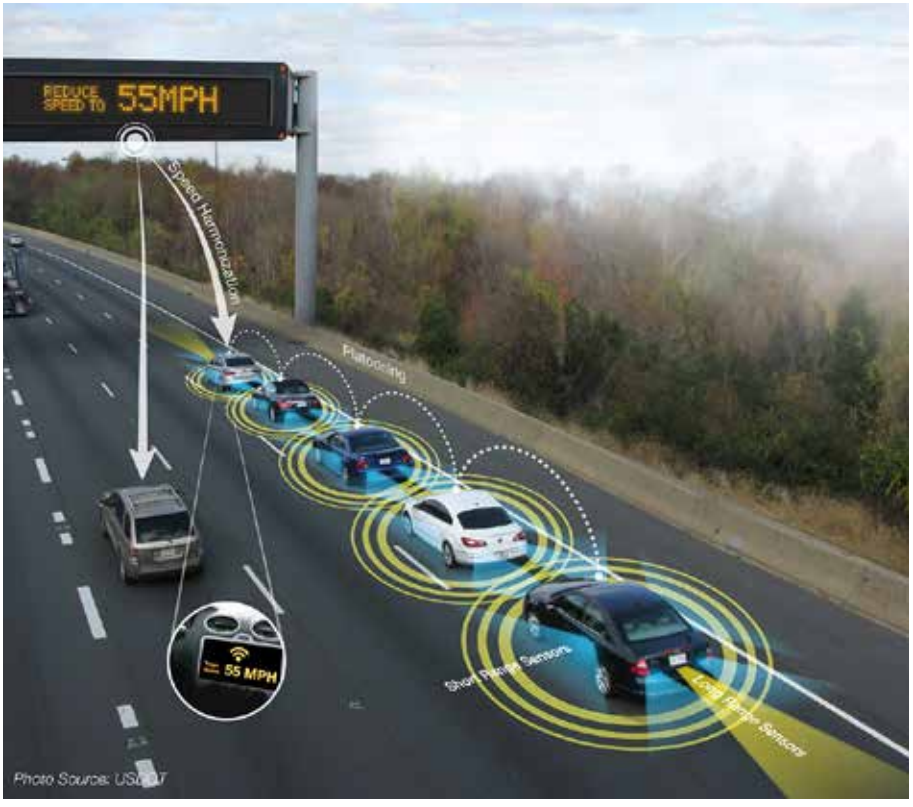
By 2030, even before personal driverless vehicle use becomes widespread, there may be other disruptive impacts that result from these technological advancements. For example, driverless technology will permit a single truck driver to lead a caravan of driverless trucks linked to his or her lead truck; this capability poses a potential disruption to 2-3.5 million professional truck-driving jobs and the cottage industries that support those drivers such as truck plazas, diners, and convenience stores.

Currently planners are discussing what the impacts of driverless vehicle technology could be on growth and development in cities and suburbs. Will car ownership decline or increase? Will people choose to live farther away from employment and services because autonomous vehicles will make their commutes easier? How will parking demand change? Will people have their cars drop them off and go back home, only to return to pick them up?

These are just a few of the questions that remain to be answered as the technology evolves and society adjusts to it.

Incorporating Assumptions about New Technology in Future LRTPs

Because there is currently still a high-level of uncertainty regarding the types of technology that will ultimately be implemented, when and how they will be implemented, and what the impacts will be, the Activate Missoula 2045 LRTP makes no specific attempt to incorporate assumptions related to new technology. However, the MPO is mindful of the growing importance of the role played by mobility-related technology in shaping Missoula's transportation system and its future growth. To that end, the MPO continues to monitor developments in mobility-related technology and coordinates with local partners as necessary to ensure that appropriate advancements are evaluated and addressed in planning projects. Given the current rate of technological advancement, there will be greater clarity on this subject for the next LRTP update in 2020.



Right: Driverless cars are already on our roadways undergoing testing in urban tech centers like San Francisco, CA. Bottom: communication between vehicles and road signs or warnings can increase the safety and efficiency of streets and highways.

II. Future Population, Household and Employment Growth Projections

The Activate Missoula 2045 LRTP is based not just on the current population and employment of the region, travel patterns and transportation systems of today, but also attempts to address future transportation needs to accommodate anticipated population and employment growth.

Population, housing, and employment growth projections are based on data and information provided by the City and County of Missoula's individual Growth Policies, each of which were updated in 2015.

The City of Missoula Growth Policy is based on a "Focus Inward" approach to growth and development, which is meant to encourage growth within the already developed portions of the urban area. The Missoula County Growth Policy includes goals and objectives that promote development within and around existing communities in a way that efficiently utilizes existing infrastructure and minimizes impacts to our natural resources and rural character. These goals are intended to facilitate the wise use of limited resources to fund infrastructure, including transportation.

Table 7 shows the projected household and employment growth in the next thirty years for the MPO planning area. The number of households is expected to increase by 62 percent and employment by 58 percent between 2015 and 2045 based on the estimates provided in the City and County Growth Policies.

The MPO uses its travel demand model to evaluate potential impacts to the transportation system resulting from increased population and the associated new trips. Based on the expected growth in employment and households, the number of "person trips" is expected to increase by 54 percent.

It is important to note however, that it is not just the number of trips, but where and through which modes they occur. As such, the MPO incorporates the locations of expected new households and employment centers into the travel demand model as well. Figure 24 depicts the existing and projected new housing units between 2015 and 2045, and Figure 25 depicts the existing and new employment locations between 2015 and 2045.

Table 7. Household employment and person trip growth, 2015 - 2045

MPO	2015	2045	Percent Growth
Population	90,097	133,329	48%
Households	40,381	60,604	50%
Employment	69,210	109,639	58%
Person trip ends	452,860	691,705	54%

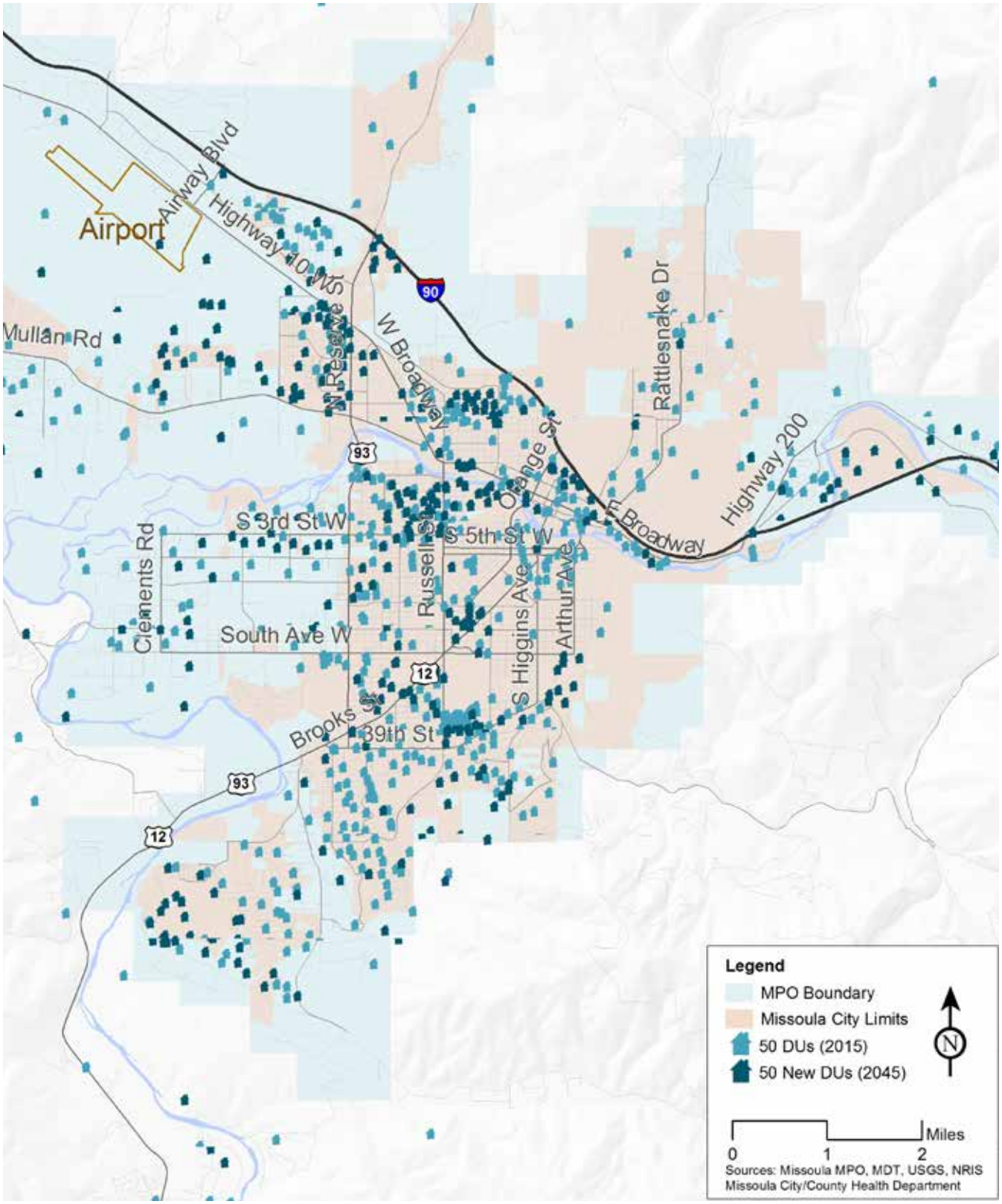


Figure 24. Existing and projected new dwelling units within the MPO area

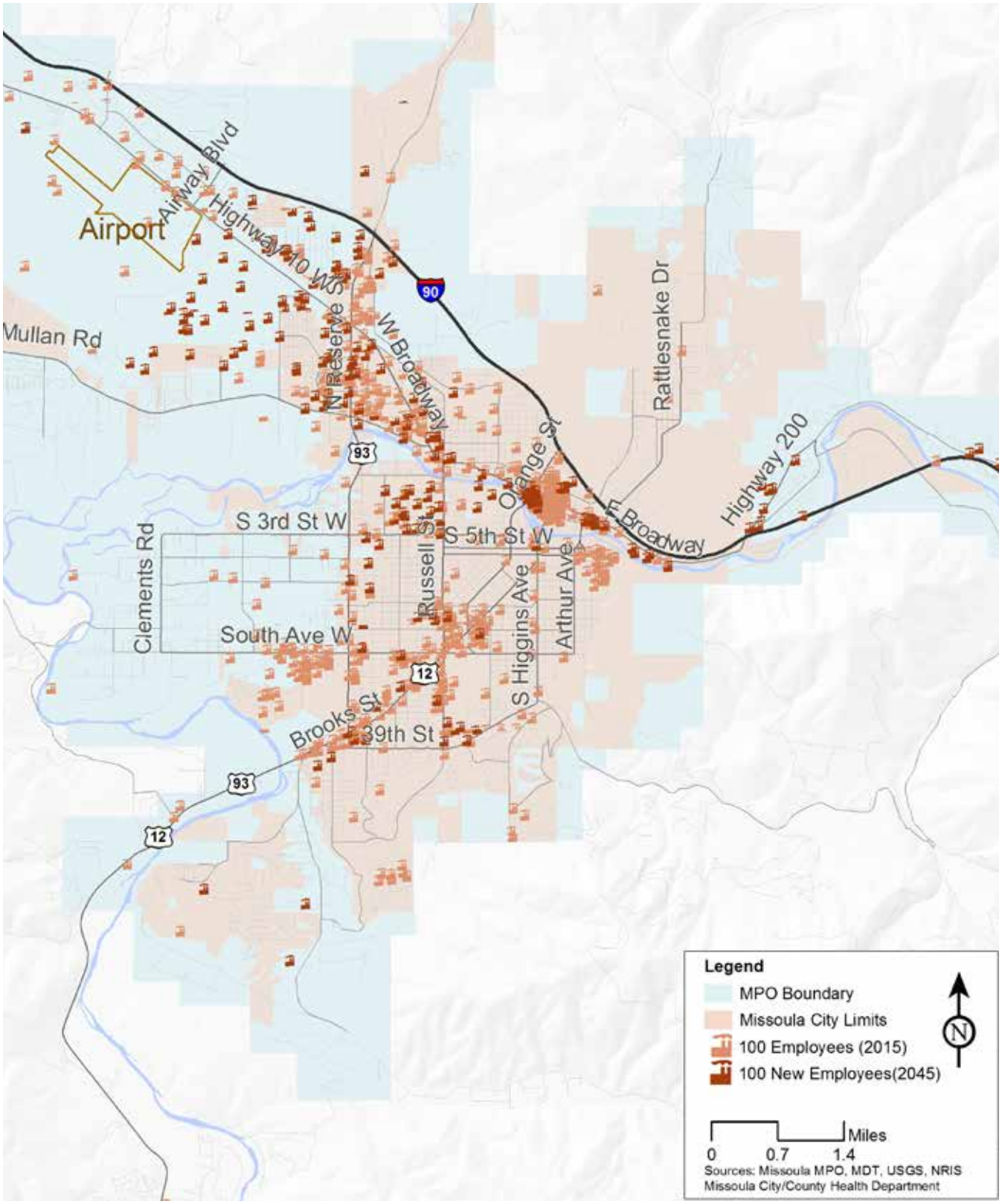


Figure 25. Existing and projected new employment growth within the MPO area

III. Committed Projects

In order to forecast and evaluate future transportation projects to determine what may be needed between now and 2045, it is necessary to incorporate planned projects that are currently scheduled for completion and funded through the current 2016-2020 Transportation Improvement Program (TIP), Capital Improvement Program (CIP) or other funding source. These are major committed capital projects that require years of planning and funding to complete, such as the Russell Street project.

IV. Forecast 2045 Congestion

The starting point for determining what additional future transportation projects might be needed is to compare the existing roadway network with current congestion, with the 2045 household and employment growth with the committed projects. A comparison between these two scenarios is presented in Figure 26 and Figure 27. Table 8 presents a traffic comparison between 2015 with existing roadways and 2045 with the existing and committed roadways. Committed and completed projects included in the congestion modeling for 2045 are shown in Figure 28.

The number and extent of roadways that are expected to become congested with forecast growth will significantly increase by 2045. Average trip travel time will increase by 20 percent and the amount of delay occurring per trip will nearly double without additional improvements.

Figure 26. Current (2015) congestion on existing roadways

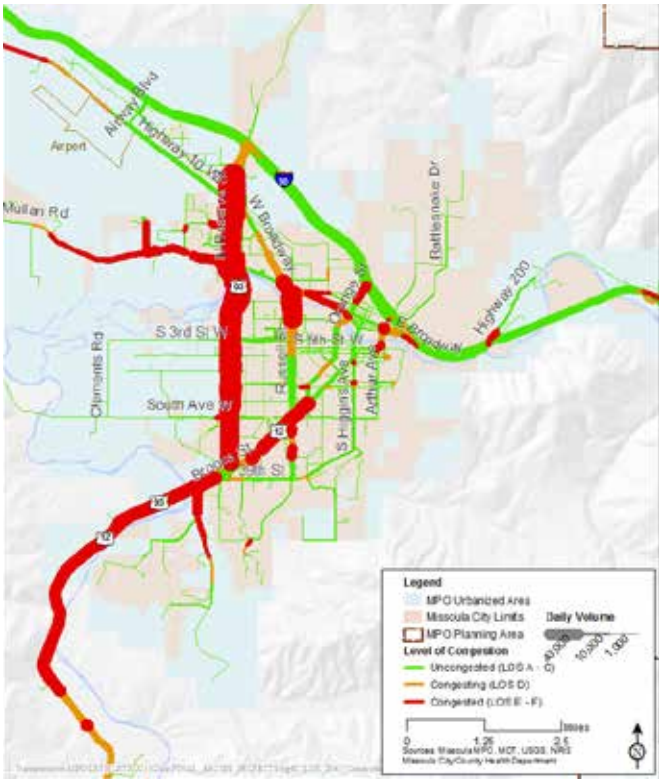


Figure 27. Projected 2045 congestion on existing roadways + committed projects

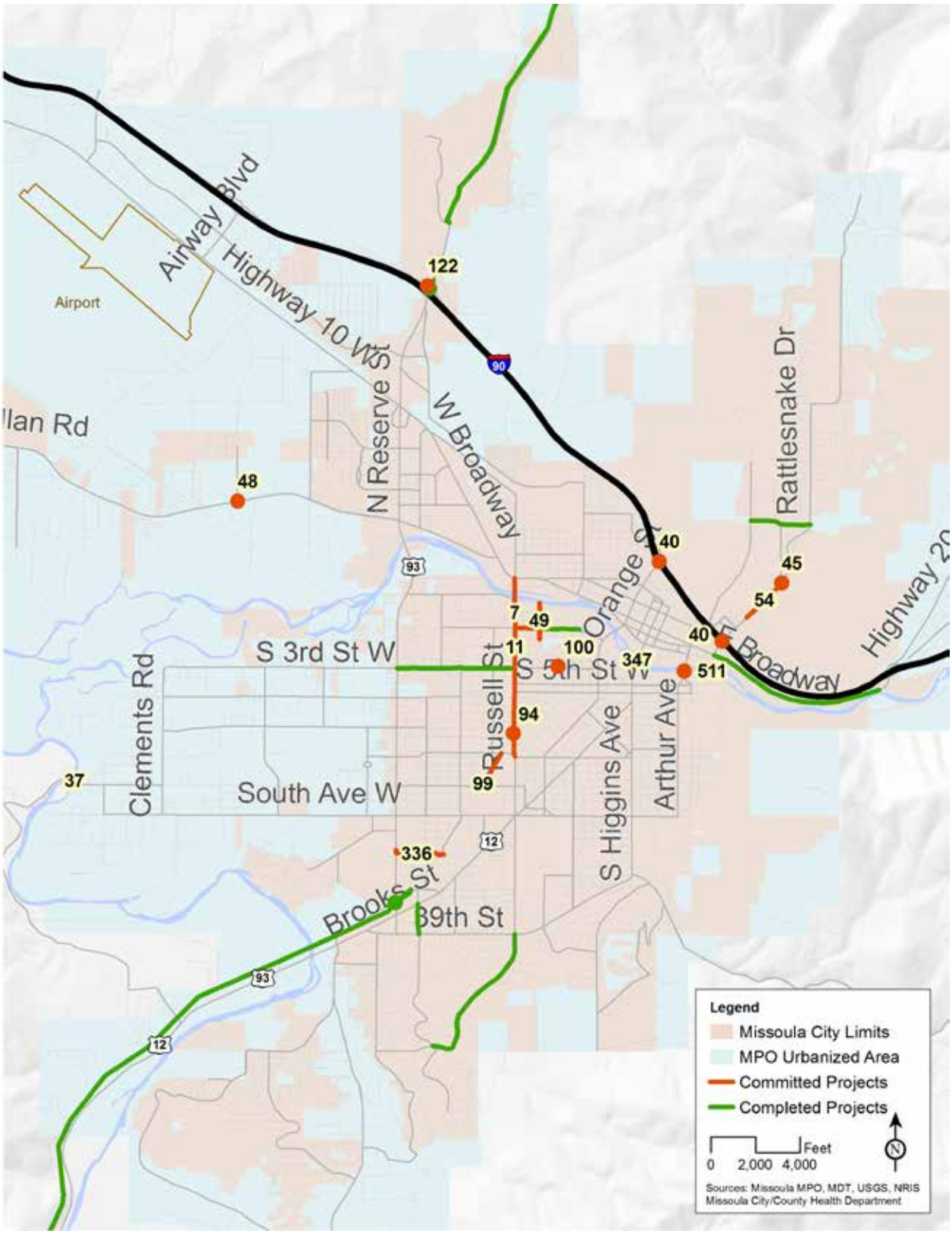


Figure 28. Completed and committed projects

V. Forecast 2045 Project Needs and Costs

As the Missoula region grows, more investment in the transportation system will be necessary to accommodate future travel. Table 9 provides the cost estimate for all identified transportation improvement need, broken down by each type, in current year dollars. A total of $325.6 million would be required to implement all projects over the next thirty years, in addition to funding for projects and programs already committed (in 2016 dollars). The cost will be even greater as inflation and project estimates go up each year.

Table 8. Traffic comparison, 2015 to 2045 (with committed projects)

Daily Average	2015	2045
Vehicle miles of travel (VMT)	1,645,953	2,578,496
% lane miles congested	0.59%	3.1%
Average travel time per trip (min)	8.80	12
Average delay per trip (min)	1.02	2.18
Delay as a % of trip time	9%	18.1%

Table 9. Cost estimates for anticipated discretionary-funded transportation need through 2045

Project Type	Anticipated cost* (2016 $)
Non-motorized	$132,271,926
Safety	$10,052,500
Roadway	$158,447,500
ITS Projects	$3,000,000
Studies	$1,150,000
Transit (Capital)	$20,700,000
Total Cost	**$325,621,926**

**Cost totals do not include previously committed projects, or other non-capital project costs*

VI. Forecast 2045 Available Funding and Shortfall

Section V above presents the cost of all potential projects that could be implemented, if funding is available. The available funding for implementation of potential projects is broken into several categories: Non-Discretionary (projects dictated by the funding source), Committed (for projects that have funding already obligated or otherwise committed) and Discretionary (funding available for future projects).

To implement new projects, the only available funding source is discretionary funds. As shown in Figure 29, only $97.75 million will be available as discretionary funds over the next thirty years (in 2016 dollars), yet the anticipated need is $325.6 million. Therefore, a shortfall of $227.8 million is anticipated for implementing all projects. It is necessary to evaluate and prioritize these projects to identify those improvements with the greatest benefit given the limited dollars available.

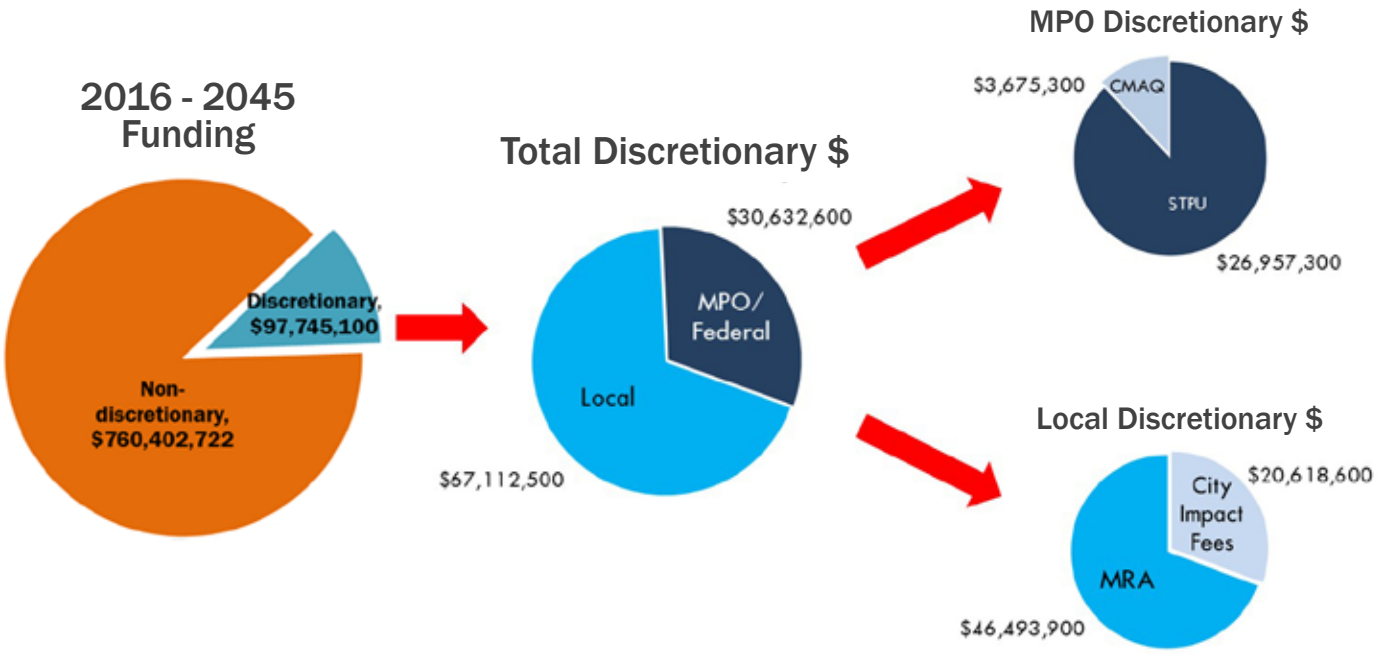


Figure 29. Available funding by source (Federal vs. Local discretionary dollars)

Community Outreach

I. Public Participation Plan

Developing any type of plan requires two key elements: technical work and community engagement. Given the significant sociocultural, economic, health, and environmental impacts of transportation on all citizens in the region, public involvement was a critical element in the development and adoption of Activate Missoula 2045.

The analytic review of existing conditions illustrated the infrastructure needs of our transportation system. The public engagement detailed in this chapter builds on our physical transportation needs by identifying community transportation experiences, needs and priorities.

The Activate Missoula planning process created a wide range of opportunities for citizens to be informed and engaged throughout the development of the Plan. In addition to traditional public meetings where staff and the public engaged directly, Activate Missoula relied heavily on electronic media to promote participation with those not typically able to be involved due to time, transportation, or accessibility constraints.

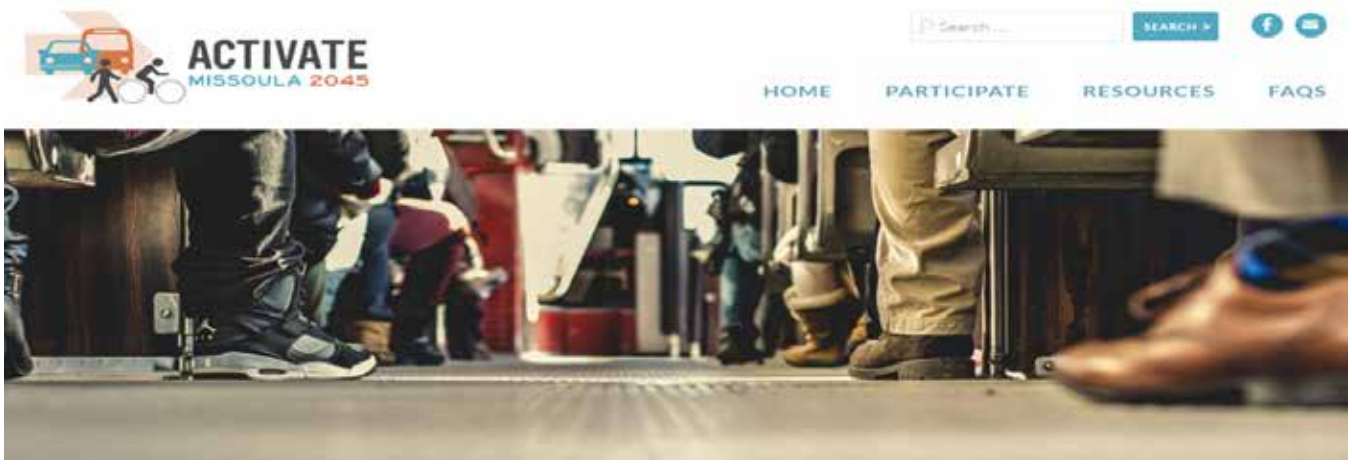
The following is a summary of the community engagement process. A detailed account of advertising activities, interagency consultations, and public meetings can be found in Appendix A.

CHAPTER CONTENTS

I. Public Participation Plan
II. Missoula Area Transportation Survey
III. Transportation Summit #1 - Project Kick-off
IV. Transportation Summit #2 - Funding Workshop
V. Transportation Summit #3 - Goals & Funding Scenarios

Project Website

The project website www.activatemissoula.com was created and updated throughout the planning process in order to expand access to open house materials, input opportunities, and to help promote ongoing activities. In addition to the primary website information pages, the site utilized several key features oriented toward gathering public input with greater flexibility than can typically be achieved at a conventional public workshop or open house. Tools included interactive web maps, online surveys, and virtual open houses.



Activate Missoula website

Success of the project website was integral to providing expanded public outreach, but was also closely tied to other outreach efforts like the use of social media, print, television and radio ads, and electronic newsletters and community listserve and calendar posts. The Activate Missoula public participation effort relied on these tools to ensure a broad spectrum of engagement across the planning area.

Social Media

Building a successful public outreach campaign increasingly relies on focused and effective use of social media. MPO staff maintain and regularly update a "Transportation Planning" page on Facebook, which cultivates a following of community members interested in transportation issues. During the Activate Missoula process, staff posted all events, surveys, and other online tools to the Facebook page, reaching over 2,000 people. Posts were shared by partner organizations such as MIM, the Bike Walk Alliance of Missoula, Missoula Institute for Sustainable Transportation, and others; the leveraging of social media networks significantly expanded the audience beyond the MPO's own contacts.

Print, Radio, and Television Media

Advertisements for all public meetings were placed in both print and radio media to help expand awareness of the events. Press releases helped inform journalists, leading to several news articles covering transportation system issues and the planning process. Staff also participated in live radio interviews and television interviews to help promote public meetings and to provide information about the transportation planning process to members of the community that are not traditionally involved in public workshops or other events.

Figure 30. Public outreach via online content

Community and Technical Advisory Committees

Two standing committees were formed to support the LRTP update process. The Community Advisory Committee (CAC) included representatives from a diverse group of community organizations, such as the Bicycle Pedestrian Advisory Board, the Chamber of Commerce, Missoula Organization of Realtors, the Community Forum (City of Missoula neighborhood representatives), Community Councils (East

Missoula, Lolo and Target Range/Orchard Homes), the City-County Health Department, affordable housing, Summit Independent Living, and Climate Smart Missoula. The CAC met four times, providing input at critical stages of the planning process. Discussion at the CAC meetings provided important input on many aspects of the Plan and was used to shape recommendations for consideration by the Technical Advisory Committee, the TTAC, and the TPCC.

The Technical Advisory Committee (TAC) also met four times during Plan development, and represented agency staff and technical partners such as the City Engineer, MDT, County Planning and Public Works, City and County Parks, Missoula Redevelopment Agency, Mountain Line, and the City-County Health Department. The TAC provided invaluable input on project cost estimates and descriptions, project prioritization, formulation of mode split goal options, and development of funding scenarios.

Community Meetings and Other Community Outlets

The final element of outreach and engagement with the community was through direct participation in community meetings, such as the Community Forum, Downtown Master Plan Implementation Committee, Planning Board, the Bicycle Pedestrian Advisory Board, and other organizations as requested. These in-person updates to community groups helped broaden awareness of the LRTP update process and to gather input from affected groups.

II. Missoula Area Transportation Survey

In addition to the above methods of obtaining public input, the MPO conducted a statistically valid survey of area residents in order to obtain information from a broader array of citizens about their transportation priorities, methods of travel, and future preferences. In the fall of 2015, the MPO sponsored a survey of Missoula area residents within the MPO's planning area to help identify key community needs, priorities and experiences with the region's transportation system. The survey, administered by the University of Montana's Bureau of Business and Economic Research, received responses from 643 persons of which 475 resided in the city and 168 within the unincorporated Missoula County.

The survey results reflect a cross section of Missoula residents' attitudes and opinions on transportation system issues. Information on community priorities was instrumental as a reference to ensure planning outcomes supported those priorities and addressed primary concerns of all Missoula residents. A selection of summary findings from the report is included below in Figure 31 through Figure 37 but the full document contains extensive additional analysis of the responses and can be found online at www.activatemissoula.com.

	Rank			
Possible Action	**1**	**2**	**3**	**4**
a. Improving bicycle and pedestrian facilities	16%	25%	**31%**	28%
b. Improving safety for drivers, passengers, bicyclists, and pedestrians	21%	**41%**	31%	7%
c. Reducing traffic congestion	**52%**	19%	13%	16%
d. Providing more or improved public transit (bus) services	13%	16%	24%	**47%**

Figure 31. Rankings of possible strategies to improve the transportation system

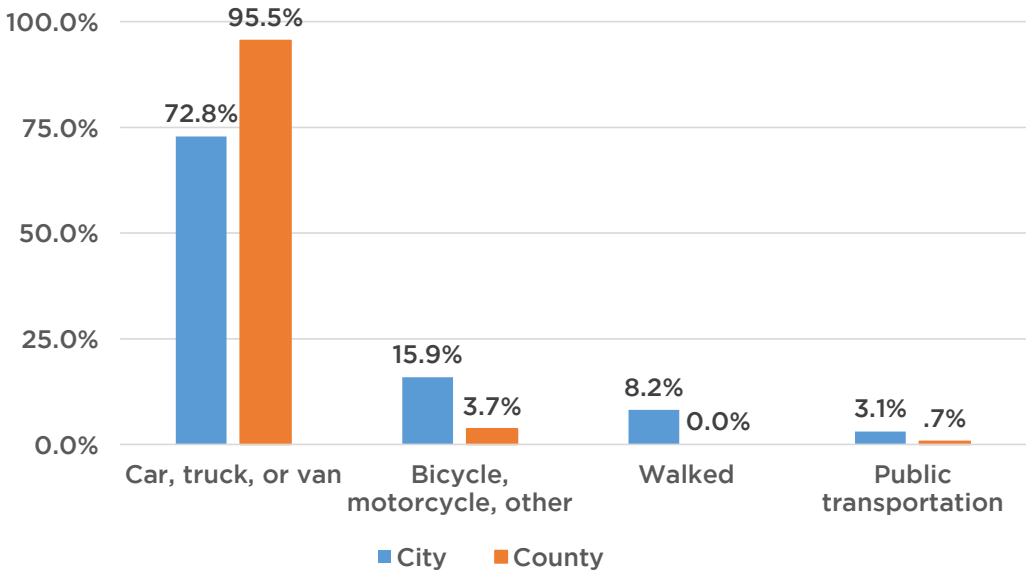


Figure 32. City vs. County mode of travel to work

Possible Action	Very High Priority	Somewhat High Priority	Middle Priority	Somewhat Low Priority	Very Low Priority	Don't Know
a. Adding and improving public transit (bus) services in the Missoula area	13.3%	18.9%	34.9%	13.9%	14.8%	4.1%
b. Adding and improving bicycle facilities, like bicycle lanes, trails/paths, and racks	20.3%	26.1%	26.2%	10.5%	16.5%	0.5%
c. Adding and improving pedestrian facilities, like sidewalks, trails/paths, and crosswalks	20.8%	37.9%	25.9%	8.8%	6.4%	0.2%
d. Adding and improving roadways for vehicles	41.5%	29.4%	16.0%	7.4%	5.5%	0.2%

Figure 33. Rankings of possible actions to improve the transportation system

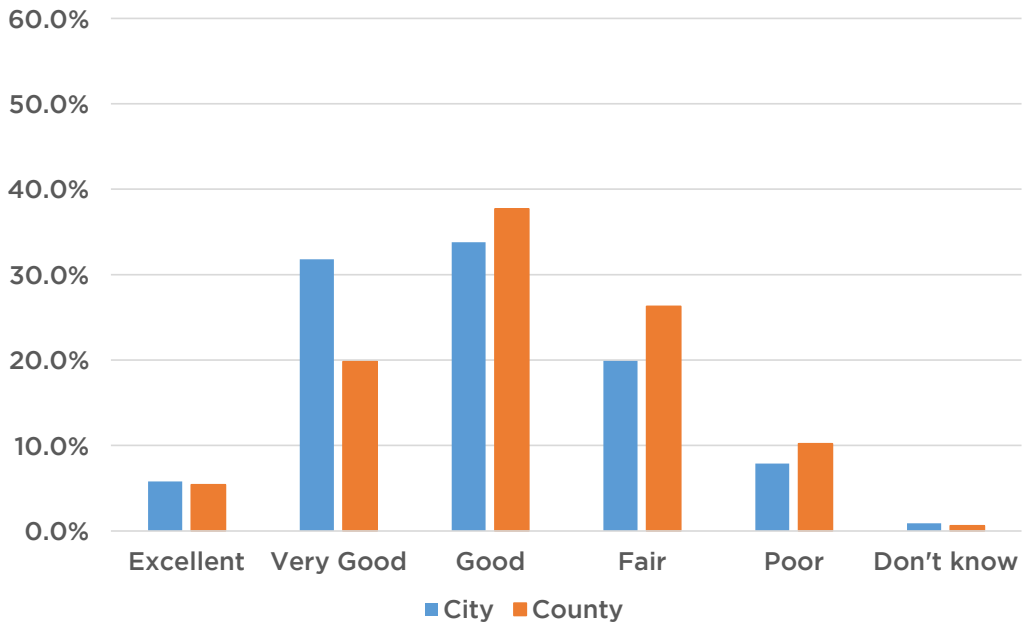


Figure 34. City vs. County ratings of area transportation system quality

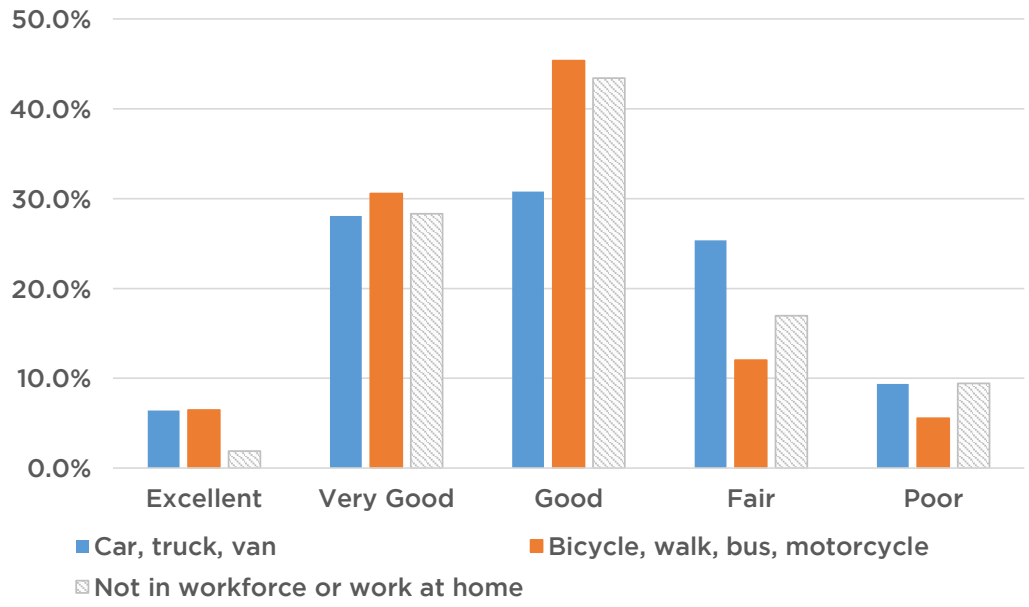


Figure 35. Overall rating of area transportation system by mode of travel to work

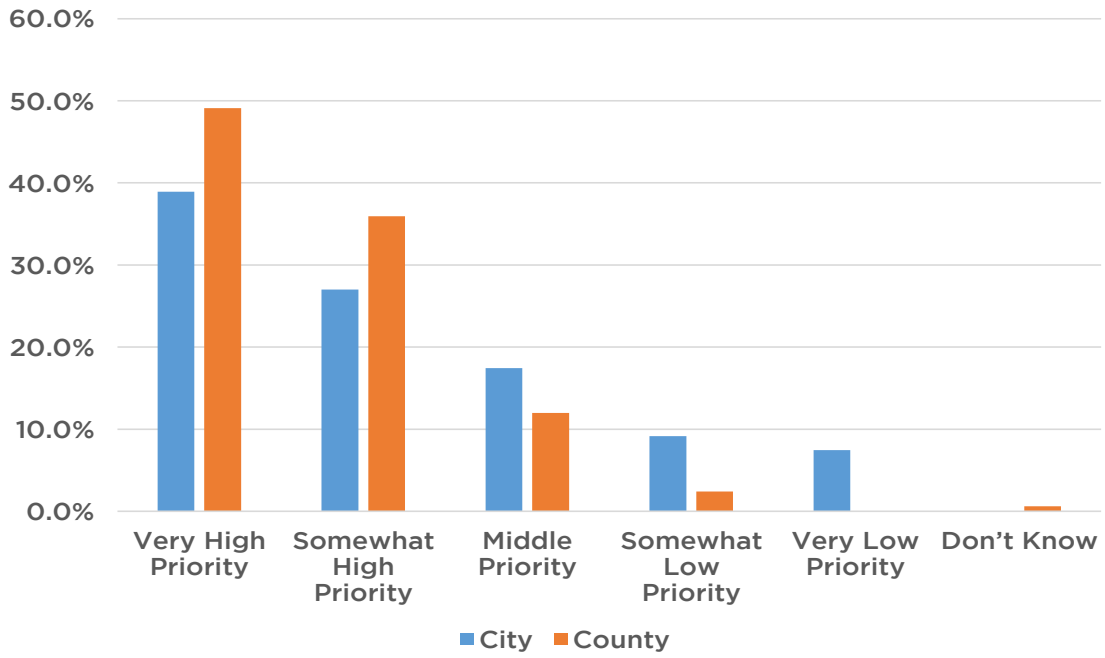


Figure 36. City vs. County priorities for adding and improving roadways for vehicles

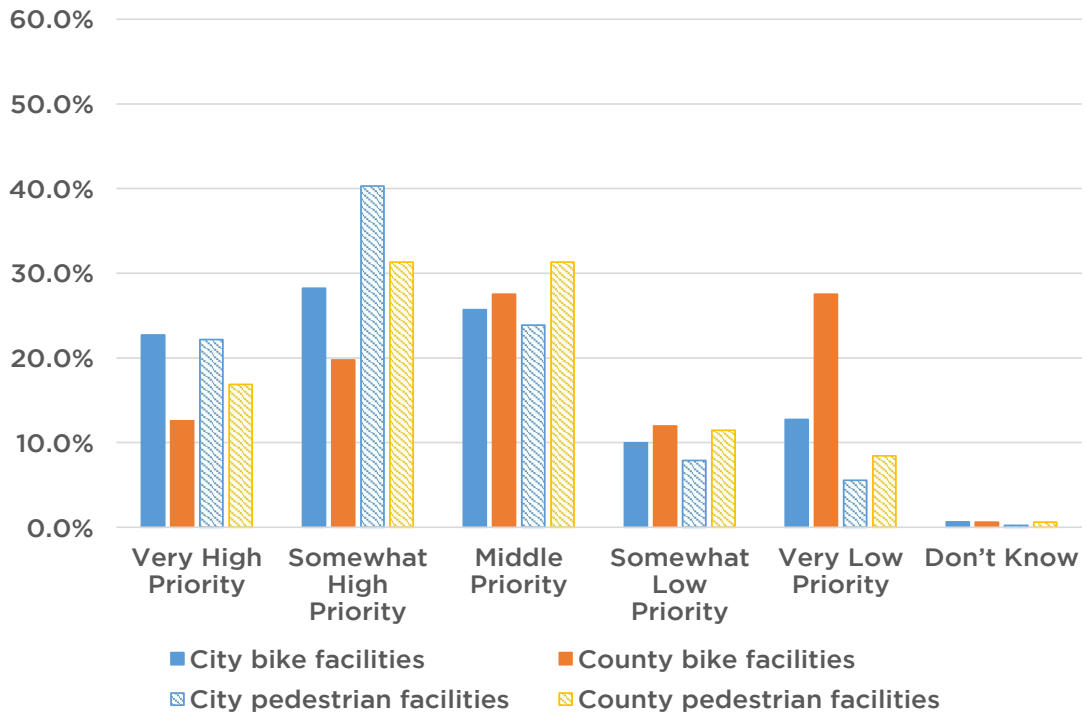


Figure 37. City vs. County priorities for improving pedestrian and bicycle facilities

III. Transportation Summit #1 - Project Kick-off

To set the stage for the Plan update, Activate Missoula held a public kick-off meeting, Transportation Summit #1, on November 4, 2015 at the Holiday Inn Parkside. During the meeting, the project team presented existing transportation system conditions via the Mobility Report Card to more than 50 attendees.

Existing Conditions & Mobility Report Card

The Mobility Report Card distilled the state of Missoula's transportation system down to a series of trends, such as pavement condition, levels of congestion, bicycling, walking, motor vehicle travel, safety, and other categories. Presenting the trends in transportation ensured that all participants attending understood the existing conditions prior to providing comments on future priorities and funding questions. Existing conditions formed the foundation of future phases of the planning process by identifying the key transportation needs along with public priorities for future improvements.

Priorities

Participants who attended the Summit were asked several questions about planning for Missoula's transportation future, building on responses from the 2015 Missoula Area Transportation Survey. The questions covered transportation priorities (improving roadway efficiency, capacity, aesthetics, travel choice, environment or spending), the most important kinds of projects (street reconstructions, maintenance, efficiency improvements, and bicycle, trail, transit, or pedestrian projects), and questions regarding support for potential new funding sources like gas taxes, impact fees or property tax increases. The survey questions were also posted to the Activate Missoula website, receiving over 150 additional responses.

Participants in Transportation Summit #2

Wikimap

At the kick-off Summit, an online Wikimap interactive feature was launched on the project website. The map tool allowed participants to provide comments about Missoula's transportation system, with categories of comments relating to different travel modes such as motorized vehicles, bicycling, walking and transit. Over the course of two months, more than 750 comments and an additional 1,500 comment "likes" were submitted through the project website's Wikimap.

IV. Transportation Summit #2 - Funding Workshop

The second public Activate Missoula meeting, Summit #2, focused on setting funding priorities for the available discretionary funds. About 50 people participated in the Summit, held on May 24, 2016 at the Missoula Children's Theater. During this public outreach phase, input was also sought for prioritizing the Plan's Goals.

Discretionary funding allocation game

At the Summit #2 workshop, participants were provided an opportunity to "spend" approximately $100 million in discretionary funds through an interactive game designed to convey the costs and trade-offs of different funding strategies. During the exercise, each table of participants was given poker chips of differing values that totaled the approximately $100 million in discretionary funds expected to be available through the 2045 planning horizon, then were asked to start funding projects from a list of five different project types (Roadway, Non-motorized, Safety, Transit and Intelligent Transportation Systems (ITS)/Transportation Studies). Tables were allowed to pick freely among projects from each category, but had to stop funding projects when all of the chips were allocated. Figure 38 shows a sample game board for allocating funding.

Results from the workshop indicated varying levels of investment in each of the different modes, however several trends emerged. First, ITS emerged as a consensus for funding among all tables. Second, although there was some variation in levels of funding for roadway projects, nearly all the tables preferred complete streets projects over other types of roadway improvements, such as projects that widened roads. Finally, the average allocations of all tables showed a more balanced approach to funding transportation improvements than what was seen in past LRTPs, with a slight shift in funding to non-motorized projects and generally away from roadway projects.

The average allocation to each funding category also generally reflected the priorities from the 2015 Missoula Area Transportation Survey, with more than 50% of the discretionary funding going to roadway projects (highest priority in the transportation survey), 25-30% going to non-motorized (second highest priority in the survey), 13% to transit (lowest modal priority in the transportation survey), and the remainder to Safety and ITS projects.

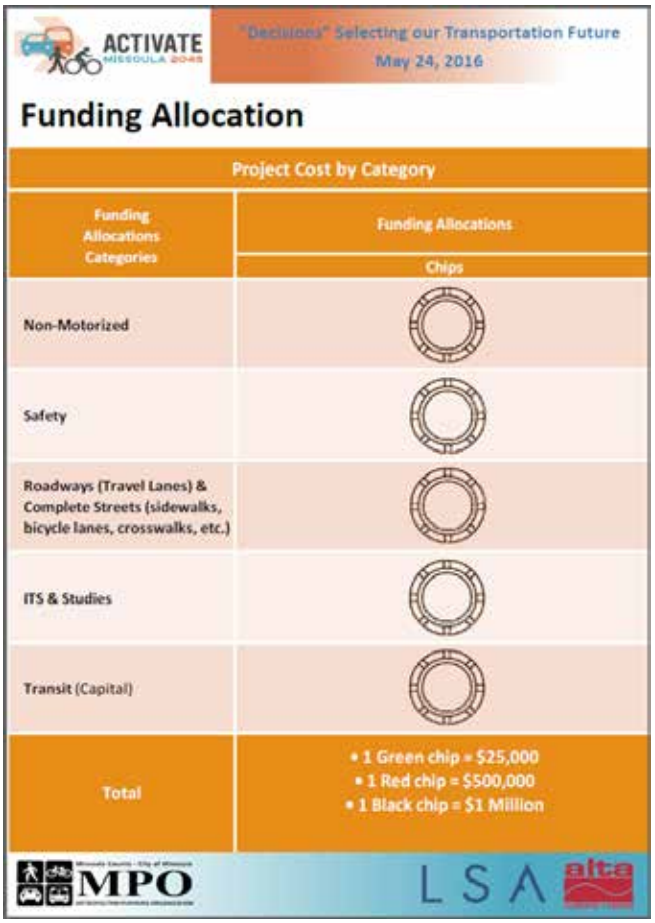


Figure 38. Funding allocation "game" board from Transportation Summit #2

Goal Prioritization

Summit #2 also marked the launch of several surveys aimed at obtaining input about the relative importance of the Plan's goals. Surveys were provided at Summit #2, on the project website, and to the CAC, asking participants to rank each of the goals, including a proposed new goal related to promotion of health and social equity through the transportation system.

The survey also asked participants to indicate whether or not the new goal should be added. The survey questions remained on the website for 2 months, and between the Summit #2 and the website, 79 responses were received from the general public. Additionally, the MPO asked members of TTAC to take the survey to see how the results of the public ranking would compare to those of the represented agencies.

Figure 39 below shows the results of the goal ranking, which show that efficiency and performance of the overall transportation system ranks highest among the other goals, with maintenance of the existing system, and system safety and security receiving the next highest rankings respectively.

The goal ranking were used as a guide in developing the criteria used to score and rank the transportation projects, which is discussed in more detail in Chapter 4.

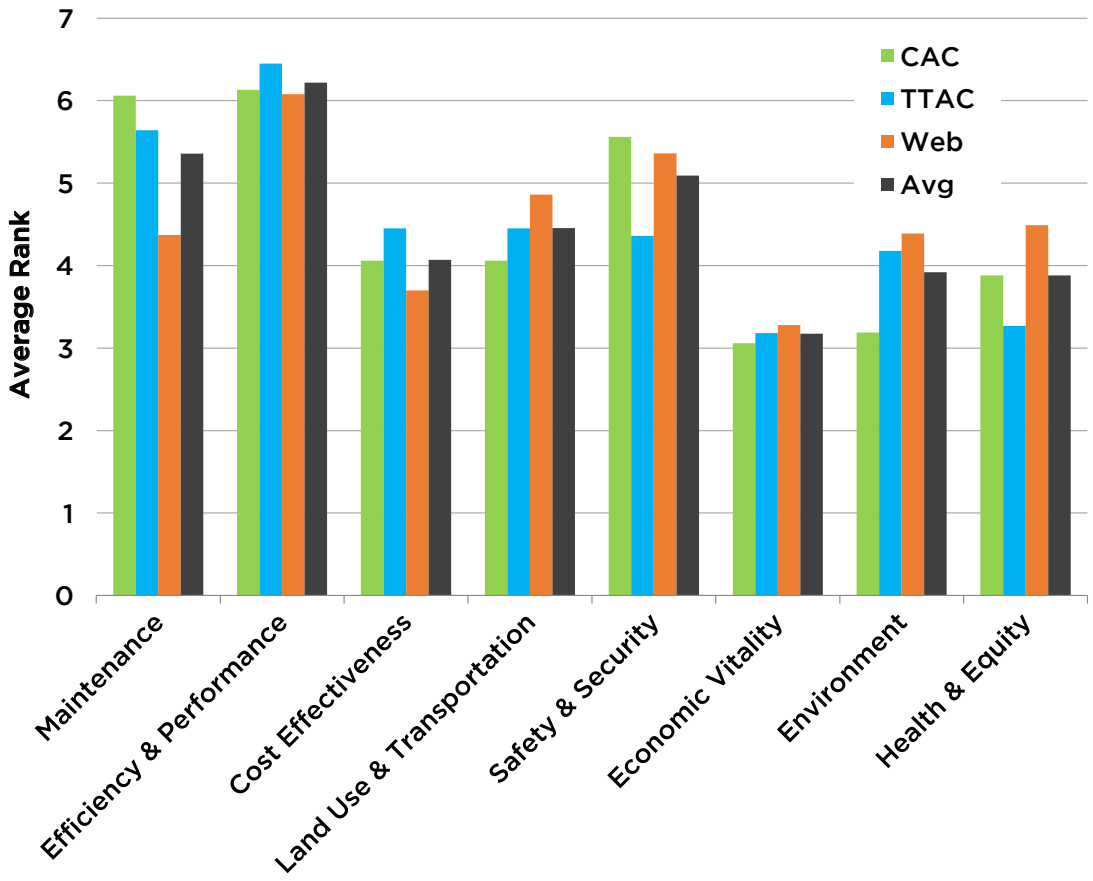


Figure 39. Goal ranking survey responses through the Activate Missoula website

V. Transportation Summit #3 – Goals & Funding Scenarios

The third phase of public outreach culminated with Activate Missoula Summit #3, an open house held on October 20, 2016 in the City Council Chambers. Nearly 60 people attended the event and provided feedback on some key questions important to developing the Plan's final recommendations.

The open house included a number of informational and interactive stations for participants to visit. The stations included a summary of the planning process and purpose, the Mobility Report Card and other existing conditions, public input from prior events (Summit #1 and #2) and the 2015 Missoula Area Transportation Survey, and information on how transportation projects were scored and ranked. Additionally, the MPO staff presented information about Missoula's current mode split (the percentage of people who travel by each type of mode) and asked for feedback on three options for setting a mode split goal for the future aimed at reducing single-occupancy vehicle commutes. Participants were also asked to choose their favorite of four possible scenarios to allocate future discretionary transportation funds.

Nearly all those who commented at the workshop preferred the most ambitious mode split goal, and generally supported additional policies to achieve that mode split goal (growth related, transportation, land use, funding or budgeting, and education). Responses to the funding scenarios were generally split between Scenario #3 (heaviest non-motorized funding scenario) and Scenario #4 (balanced funding approach with additional transit focus). Additional, more detailed information about the development of the mode split goal options and future funding scenarios is provided in Chapter 5.

Virtual Open House

After the Summit #3 public open house, all materials and survey questions were posted to the project website for an additional 20 day comment period. The virtual open house presented images of all poster boards from the "stations" in the same order presented at the live event. In addition to poster boards, a short survey asked online participants which mode split goal they preferred, additional policies to achieve those goals, and which funding scenario they preferred. A total of 27 individuals filled out the online survey, with responses split between the moderate and ambitious mode split goals, and split between funding Scenario #3 and Scenario #4.

Attendees at Transportation Summit #3 explore the information presented on the project boards

Performance Measures & Project Ranking

I. Performance-based Planning and Programming

Federal transportation law, starting with MAP-21 in 2012 (Moving Ahead for Progress in the 21st Century) and more recently the FAST Act in 2015 (Fixing America's Surface Transportation), introduced new requirements for the highway program, including a requirement to focus on performance and outcomes, particularly when planning transportation investments with scarce resources.

CHAPTER CONTENTS

I. Performance-based planning & programming
II. Project evaluation and ranking

MPOs are required to develop performance-based transportation plans that were created through a transparent, data-driven, evaluation process based on community input and objective performance measures to prioritize projects and programs regionally to achieve desired local, state, and national goals.

The development of a performance-based transportation plan touches on the key elements shown in

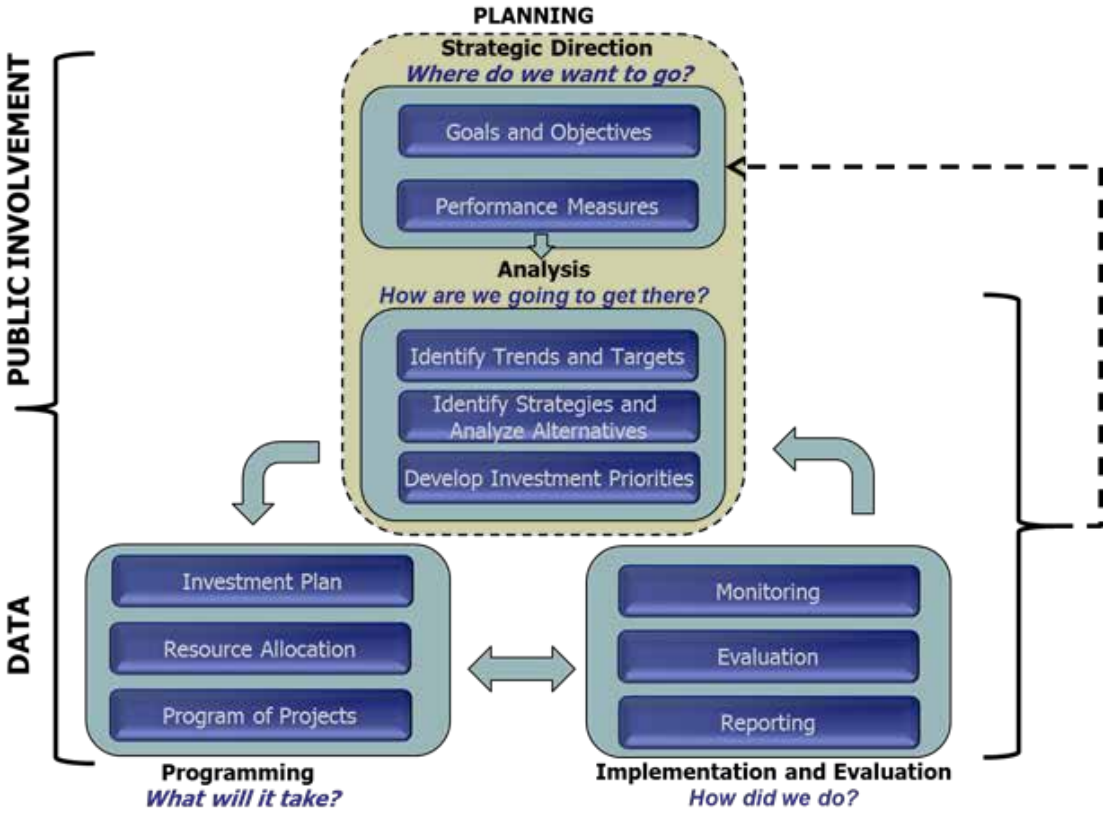


Figure 40. Performance based planning and programming (source: Federal Highway Administration)

Figure 40 under "Planning." It includes the setting of a strategic direction ("where do we want to go?") stemming from our goals, objectives, and performance measures. This step requires data and information from monitoring and evaluation of system performance (the feedback loop from implementation activities, answering the question, "where are we now?"). The development of a performance-based plan includes analysis of how the region will move toward achieving identified goals and objectives through investments and policies ("how are we going to get there?"). The resulting transportation plan identifies achievable targets and investment priorities, including capital and operating strategies that will be carried forward into programming.

System Performance Goals and Planning Factors

National-level Performance Goals and Planning Factors established in federal transportation law serve as a guide for local-level goals and objectives, and the coordination and investment of transportation funds regionally.

National Goals and Planning Factors

MAP-21 established seven national Performance Goals for federal highway programs, which were retained by the FAST Act. The goals are supported by 10 Planning Factors (MAP-21 included eight factors and the FAST Act added two additional factors). The national Goals and Planning Factors are summarized in Table 10 and Table 11.

Activate Missoula 2045 Goals and Objectives

Using the federal Goals and Planning Factors, the MPO developed localized goals and objectives for Activate Missoula 2045. Missoula's goals and objectives address system-level (region, city, neighborhood, etc.) and project-level needs. Many of the goals and objectives in this plan were carried forward from the previous LRTP – though one new goal related to community health and social equity was added based on community input and feedback from the CAC, TAC, TTAC and TPCC early in the process.

Table 10. National Performance Goals

Goals	Objectives
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair.
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System.
System Reliability	To improve the efficiency of the surface transportation system.
Freight Movement and Economic Vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment.
Reduced Project Delivery Delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Table 11. National Planning Factors

Goals	Objectives
Economic Vitality	Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
Safety	Increase the safety of the transportation system for motorized and non-motorized users.
Security	Increase the security of the transportation system for motorized and non-motorized users.
Accessibility	Increase the accessibility and mobility of people and for freight.
Environment	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.
Connectivity across modes	Enhance the integration and connectivity of the transportation system, across and between modes, people, and freight.
System management and Operation	Promote efficient system management and operation.
System Preservation	Emphasize the preservation of the existing transportation system.
Reduced Project Delivery Delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Goal 1: Maintain our existing transportation system

- Maintain & repair existing roads, bridges, sidewalks and trails to good or better condition.
- Promote complete streets and increase access to additional modes by replacing and retrofitting transportation facilities in the existing system to allow for a wide range of transportation options.

Goal 2: Improve the efficiency, performance, and connectivity of a balanced transportation system

- Optimize the efficiency of transportation facilities through improved signal timing, road design, elimination of bottlenecks, integration of multiple modes, or other methods.
- Minimize increases in travel times by methods such as providing direct routes between destinations, use of intelligent transportation systems and transportation demand management tools, and/or providing information to the public to allow them to make informed transportation decisions.

Goal 3: Maximize the cost-effectiveness of transportation

- Reduce cost of travel to users by taking opportunities to include all modes of transportation in new and retrofitted projects and reducing travel times and distances for activities of daily living.
- Plan for a transportation system that is affordable, sustainable, and makes the best use of public financial resources.
- Construct projects with costs that produce a corresponding benefit to users.
- Reduce project costs and expedite movement of people and goods by accelerating project completion.

Goal 4: Promote consistency between land use and transportation plans to enhance mobility and accessibility

- Provide a transportation network which supports City and County Growth Policies with an emphasis on focusing growth on Missoula's urban area ("Focus Inward") and existing communities, and providing a range of transportation options for the region's community centers.
- Develop mixed-use activity centers including infill and redevelopment areas.
- Provide travel choices along multimodal travel corridors.

Goal 5: Provide safe and secure transportation

- Support transportation programs and design improvements which reduce crashes and improve safety of all modes.
- Facilitate the rapid movement of first responders and support incident management during times of emergency.

Goal 6: Support economic vitality

- Support new and existing commercial and industrial development by ensuring access by multiple transportation modes.
- Provide attractive and convenient transportation facilities that attract and retain businesses, young professionals, families and older adults.
- Facilitate the movement of goods and freight to commercial and industrial centers.

Goal 7: Protect the environment

- Reduce fossil fuel consumption by minimizing travel time and providing access to alternative modes and fuels.
- Maintain air quality attainment by minimizing air pollution related to vehicle emissions by reducing congestion and vehicle miles traveled.
- Minimize sediment, nutrients, and litter entering surface water via roads and drainage.
- Minimize impacts to the natural environment by taking opportunities to couple transportation projects with protection and enhancement of environmental resources.

Goal 8: Promote community health and social equity through the transportation system

- Improve multi-modal access to parks and trails to support active and healthy lifestyles.
- Improve multi-modal access to schools, healthcare and social services.
- Reduce overall household transportation costs, particularly for typically under-served and/or vulnerable populations by providing safe and affordable transportation options.
- Reduce impacts on neighborhoods and cultural and historic resources through evaluation of assets and involvement of neighbors in the planning process with special attention to areas with typically under-served and/or vulnerable populations.

II. Project Evaluation and Ranking

Performance-based planning is intended to base decision-making on measurable, objective evaluation of projects and programs in order to help prioritize limited funding. Therefore, the MPO developed a method to score and rank individual transportation projects with the intention of measuring the relative benefit of each in relation to the goals and objectives described previously.

The list of projects evaluated was compiled by the MPO and includes many projects that were evaluated in previous LRTPs, as well as some new projects. Staff refined the list of projects based on information from agencies and organizations responsible for funding and implementing transportation projects to ensure that projects being analyzed were both feasible and consistent with agency plans.

Project Scoring Methodology

Activate Missoula 2045 scored and ranked projects based on a series of measurable criteria outlined under each of the eight goals. All roadway and non-motorized (bicycle and pedestrian) projects were scored with the same scoring criteria and methodology, recognizing that roadway projects have the potential to benefit all modes of transportation through complete street improvements, and that non-motorized projects can have an impact on overall system efficiency, functionality, and safety.[1]

Projects could receive up to 210 possible points. Each goal was assigned a set number of possible points, based on the goal ranking feedback that was received (Chapter 3), and a set of scoring criteria were established for each goal related to its objectives. The scoring criteria were designed so that they are easy to measure with available data (such as the travel demand model, socioeconomic data, vulnerable and under served groups, crash data), are replicable and trackable, and are objective. The following figures illustrate the scoring methodology used to evaluate and rank the motorized and non-motorized projects. Much of the data used in the criteria can be found in Chapter 2.

Silver Park, located in the Sawmill District, includes trail connections to the California Street bridge and to Missoula's commuter trails system.

1 Projects in the following categories were not scored using the project scoring methodology: Safety, Intelligent Transportation Systems, Transportation Options, Transit, and Studies. Some safety improvements are included in roadway projects, while others are prioritized at the State level using criteria developed by MDT. The Community Transportation Safety Plan also prioritizes specific crash locations based on analysis set out in that plan. Transportation Options continue to be funded in this plan at the same levels as stipulated in the 2016-2020 Transportation Improvement Program. Studies are typically funded through MPO planning funds or through local allocations by City Council, Missoula Redevelopment Agency, and other agencies.

1. Maintain our existing transportation system 30pts

A.1 Pavement Condition Rating: Project improves pavement on an existing roadway or trail

Project improves a facility with fair pavement condition

Project improves a facility with poor pavement condition

A.2 Maintenance Costs: Reduces or minimizes the long term costs to operate or maintain the transportation system

Project adds minor long-term maintenance or operational costs

Project reduces or does not increase long-term maintenance or operational costs

A.3 ADA Improvements: Project provides ADA improvements or enhances ADA access to existing facilities

Project provides minor enhancments to existing ADA facilities (crossings, widening, etc.)

Project provides new or enhanced ADA access or facilities

A.4 Complete Streets: Improves access along existing facilities for additional modes (motor vehicle, bicycling, walking, or transit)

Project retrofit does not add access for additional modes, but enhances an existing non-auto mode (bike/walk/bus)

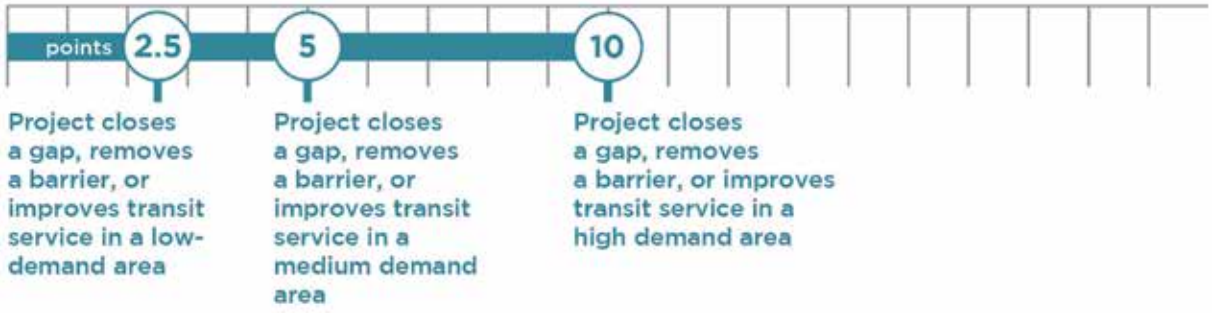
Project adds an additional (one) mode access where it currently doesn't exist

Project adds more than one additional mode access

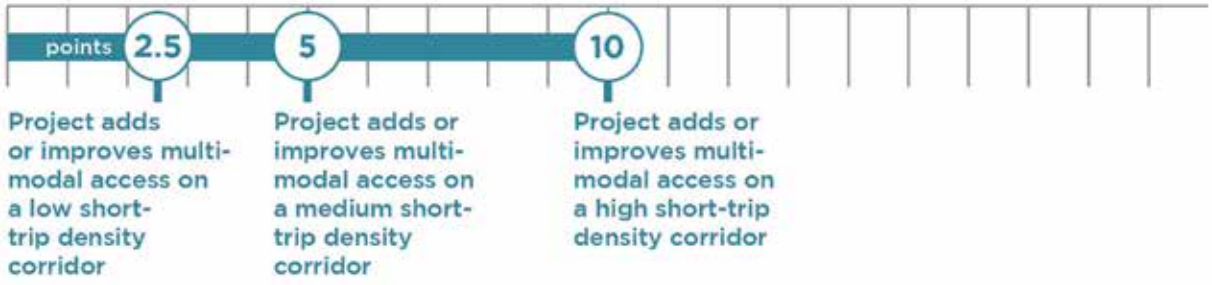
2. Improve efficiency & performance 40pts

B.1 Reduced traffic delay: Improvements to the system-wide travel time or delay reduction/congestion mitigation

B.2 Connectivity: Improves transit service, closes gaps or removes barriers in the transportation system (all modes)



B.3 Short trips: Improves multi-modal access along corrdors with high potential for bicycle, walk or transit trips (trip length < 3 miles)



3. Maximize cost effectiveness 20pts

C.1 Cost per mile: Maximize transportation system investments by reducing construction cost per mile

Construction cost per mile of the project is $500,000 - $999,999

Construction cost per mile of the project is less than $500,000

C.2 Cost per trip: Maximize transportation system investments by reducing construction cost per person-trip

Construction cost per person-trip of the project is $100 - $999/per trip

Construction cost per person-trip of the project is less than $100/per trip

4. Land use and transportation 20pts

D.1 Planning consistency: Supports other plans or is included in another planning document/study (MUTD Long Range Plan, Growth Policy, trail plan, or other plan)

Project moderately supports and/or is a low or medium priority project in another plan

Project strongly supports and/or is identified as a priority in another plan/document

D.1 Location/Land use: Does the project support land use planning or locate improvements in areas of high demand or diversity of uses

Project is located in a medium demand area (based on trip density & diversity measures)

Project is located in a high demand area (based on trip density & diversity measures)

5. Safe & secure transportation 30pts

E.1 High-crash locations: Improvements made at known high-crash locations identified as priorities in the CTSP

Project will improve safety but not at a priority/high crash frequency or high crash cost location

Project improves safety at a priority/high crash frequency or high crash cost location

E.2 Emergency response: Provide improvements to emergency response times and enhance access for emergency responders

Project provides improved response time, increases access for emergency repsonders, or enhances incident management

E.3 Bicycle Safety: Improves safety at high frequency crash locations

Project improves bicycle safety, but not at a priority/ high crash frequency or cost location

Project improves bicycle safety at a priority/high crash frequency or cost location

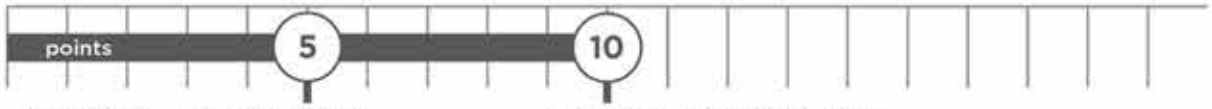
E.4 Pedestrian Safety: Improves safety at high frequency crash locations

Project improves pedestrian safety, but not at a priority/ high crash frequency or cost location

Project improves pedestrian safety at a priority/high crash frequency or cost location

6. Economic vitality 15pts

F.1 Freight: Provide for efficient movement of freight through and around the region



Project improves operations on a truck route or enhances access to an industrial/ manufacturing center

Project improves both truck route operations and access to an industrial/manufacturing center

F.2 Commercial and industrial centers: Increase multi-modal access to commercial and industrial development/employment centers

Improves mobility to an identified commercial or industrial center for one mode

Improves mobility to an identified commercial or industrial center for two or more modes

7. Preserve the environment & resources 20pts

G.1 Air quality: Improve air quality and reduce fuel consumption

Project improves air quality but does not reduce VMT (fuel consumption)

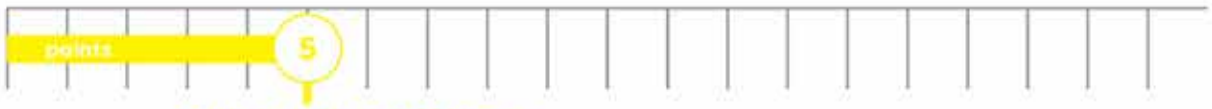
Project improves air quality and is expected to reduce VMT (fuel consumption)

G.2 Natural environment: Protect natural resources and improve the natural landscape

Project adds landscaping, street trees, bioswales or other natural improvements

Project impacts sensitive natural resource areas

G.3 Stormwater: Improve stormwater management



Project eliminates or reduces stormwater impacts

8. Community health & social equity 20pts

H.1 Access to parks & trails: Increase multi-modal access to parks, trails and open space

Project provides multi-modal access within 1/4 mile of a park or trail

Project connects to or expands multi-modal access directly to a park or trail

H.2 Access to schools, healthcare & social services: Increase multi-modal access to essential community services

Provides multi-modal access within 1/4 mile of a school, hospital, or health/social service provider

Project connects to or expands multi-modal access directly to a school, hospital, or health/social service provider

H.3 Transportation Equity: Increase multi-modal transportation options for under-served and vulnerable populations

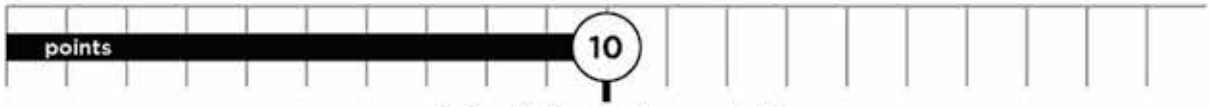
Project increases multi-modal access for 2 vulnerable/ under-served population groups

Project increases multi-modal access for 3 vulnerable/ under-served population groups

Project increases multi-modal access for 4 vulnerable/under-served population groups

Additional scoring factors 15pts

Bonus.1 Readiness: State of project readiness



Project is in an advanced state of readiness (shovel ready, preliminary design)

Bonus.2 Streetscape: Improve the physical streetscape environment

Project includes beautification components such as landscaping, streetscaping, lighting, street trees, public art, furniture, etc.

Project Scoring Results

The results of the scoring process were broken out by mode (roadway and non-motorized), then ranked and used to prioritize funding (described more thoroughly in Chapter 5). Some projects, despite scoring highly, may not be identified for funding due to their unique circumstances or challenges. A full list of scored and ranked projects can be found in Appendix C, however an illustration of the results for non-motorized projects is shown in Figure 41. All scores are color-coded to match the goals in this chapter, and show how projects compare under each of the scoring criteria.

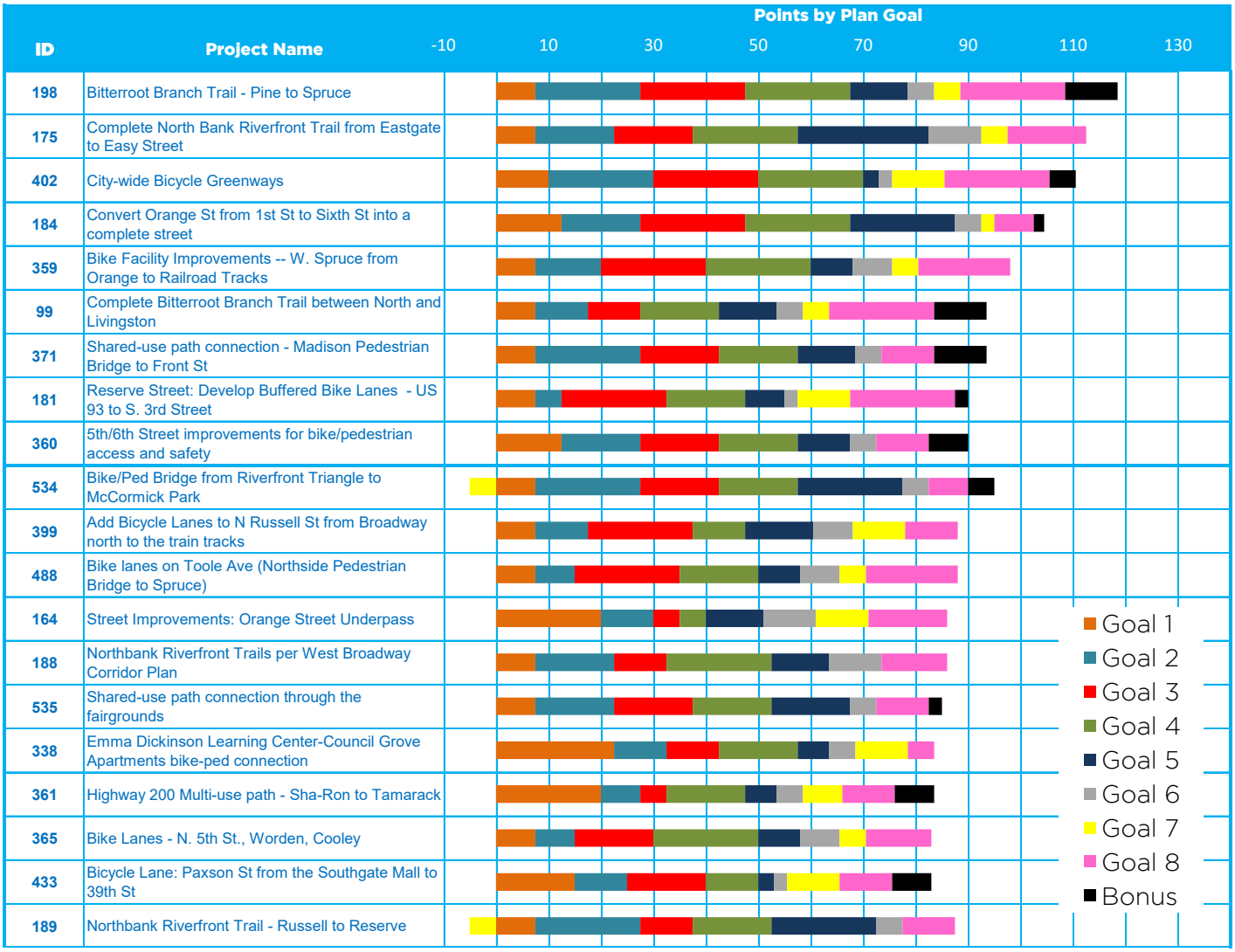


Figure 41. Non-motorized project ranking using the goals, objectives and scoring criteria

Exploring the Future

I. Different Approaches to the Transportation System

There are many approaches that can be taken to planning for future transportation needs. But all require the need to be thoughtful about, and pay attention to, the fact that resources are limited, and costs continue to rise. The MPO worked to develop several scenarios for how we, as a community, might allocate our limited funding and prioritize projects and programs over the next 30 years.

To do this, we began by considered the following:

- Current mode share and potential future mode share.
- The amount of funding expected to be available through 2045, both discretionary and non-discretionary (aka "restricted to certain uses").
- Anticipated population growth and demographic changes (Chapter 2).
- Anticipated housing and employment growth and where it is expected (or desired) to occur (Chapter 2)
- The list of projects, prioritized by the criteria outlined in Chapter 4, and their construction cost.

The following sections summarize the major "building blocks" of the scenarios the MPO developed, with input from the public, the CAC, the TAC, and the MPO's TTAC and TPCC.

CHAPTER CONTENTS

I. Different approaches to the transportation system
II. Transportation system scenarios
III. Scenario performance

Mode Share

Part of the process included beginning a conversation about how and if we should attempt to "shift mode share" in Missoula. As discussed in Chapter 2, Missoula has a higher than average (both compared to the nation and the state) share of commuters using non-single occupancy vehicle modes to travel. This helps reduce the strain on our overall transportation system, while also having environmental, community health, and social equity benefits.

Vehicle emissions contribute to air pollution in the Missoula Valley

Single-occupancy vehicles need more space than other modes

Motor vehicles contribute to congestion on our streets

More vehicles on the road contributes to increased crash rates

Setting a Mode Share Goal

The concept of setting a goal or goals related to mode share has been discussed for several years by some members of the TTAC and TPCC, as well as some members of the bicycle/pedestrian advocacy community. While historically Missoula has worked hard to create opportunities for people to travel via a number of modes, and has had some success doing so (as seen by our current mode share numbers), the concept of setting a goal was viewed by some as a means of solidifying it as a policy direction and as a way to further encourage investment in active transportation modes.

Given this interest, it was determined that the Activate Missoula 2045 LRTP update would be a logical planning process through which to evaluate potential goal options and ultimately, set a mode share goal for the community.

The method for setting the goal consisted of the following pieces:

- Looking at our current and historic mode share.
- Reviewing other cities mode shares and whether they had set similar goals.
- Evaluating possible impacts to the transportation system if the mode share remains the same (i.e. how many additional vehicles will be on the road in 2045).

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Looking inward. Moving forward.

The 2015 "Our Missoula" City of Missoula Growth Policy considered establishing a community Mode Share goal, but instead determined that it would be more appropriate to explore potential options for setting a goal related to mode share in the Activate Missoula 2045 Plan.

From the 2015 Growth Policy: "Implementation Action 1.8: Establish a mode-split goal with an emphasis on expanding active transportation and shifts away from single occupancy motor vehicle trips."

Figure 42. Commute mode share for Missoula urban area (source: ACS 5-year average, 2010-2014)

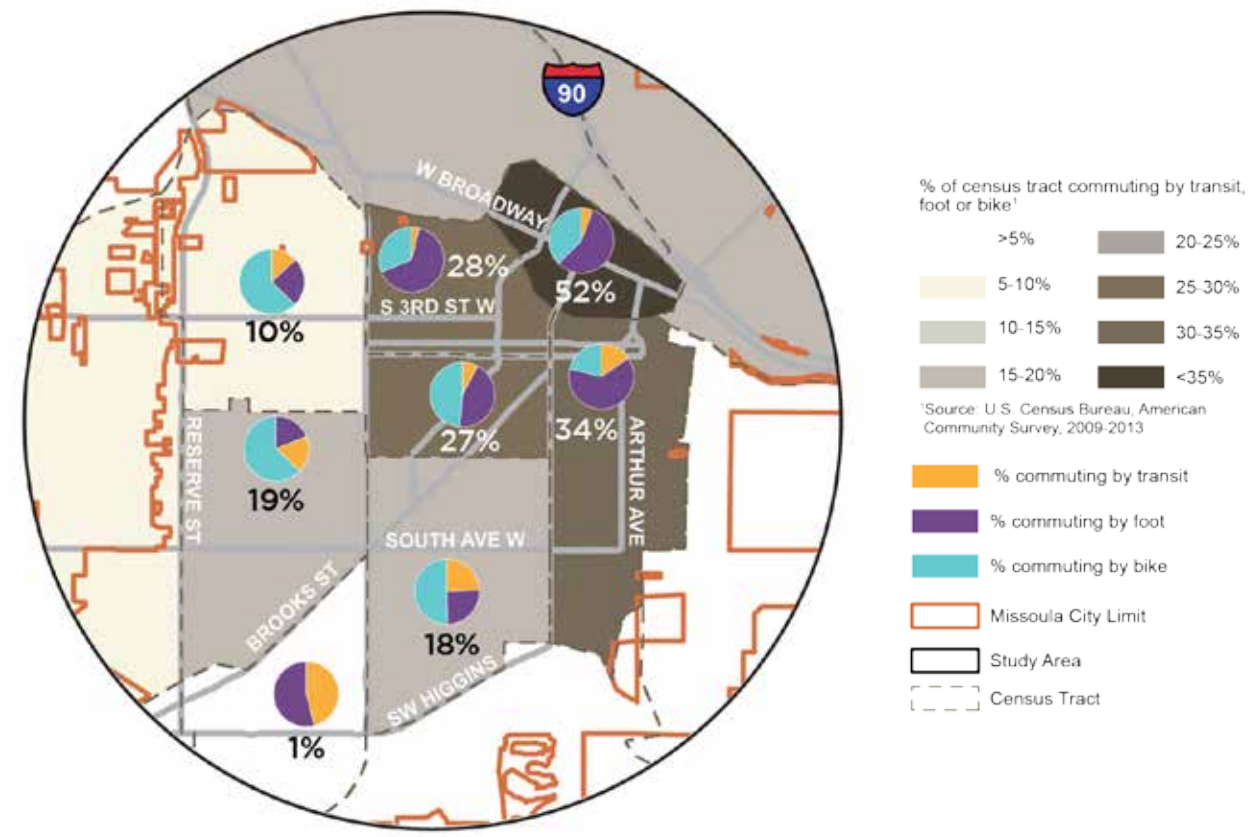


Figure 43. Commute mode shares for bicycling, walking, and transit by census tract (source: ACS 5-year average, 2010-2014)

Current Mode Share

Missoula's current mode share, as discussed in Chapter 2 and as illustrated below, indicates that the majority of commute trips are via single-occupancy vehicle, however a growing portion of commuters are also using other modes, carpooling/vanpooling, or working from home.

The mode share numbers in Figure 42 are averages for the Missoula urban area between 2010 and 2014. Figure 43 breaks down the mode share further by census tract, focusing on the percentages of transit, bike, and pedestrian commuters. As can be seen, some areas and neighborhoods within Missoula, particularly those nearest the urban core, have much higher than average shares of commuting by transit, foot, and bike, than other areas of the region outside the core.

It is likely that the areas with higher single-occupancy vehicle use have less non-motorized infrastructure and perhaps have existing barriers that make it difficult to travel using other modes. For example, the area bounded by Brooks Street, South Russell Street, and 39th Street has significantly lower levels of bike, walk, or transit use than adjacent areas, indicating that the major corridors surrounding this tract present a barrier.

Comparison Cities

MPO staff looked at other cities, including ones with similar characteristics to Missoula, to see if they had set mode share goals, and if so, how they set them. The MPO looked at 15 different cities and found that some cities did not set goals specific to mode share, but rather set related goals, such as for greenhouse gas reduction or vehicle miles traveled reduction. Some cities set goals for mode share,

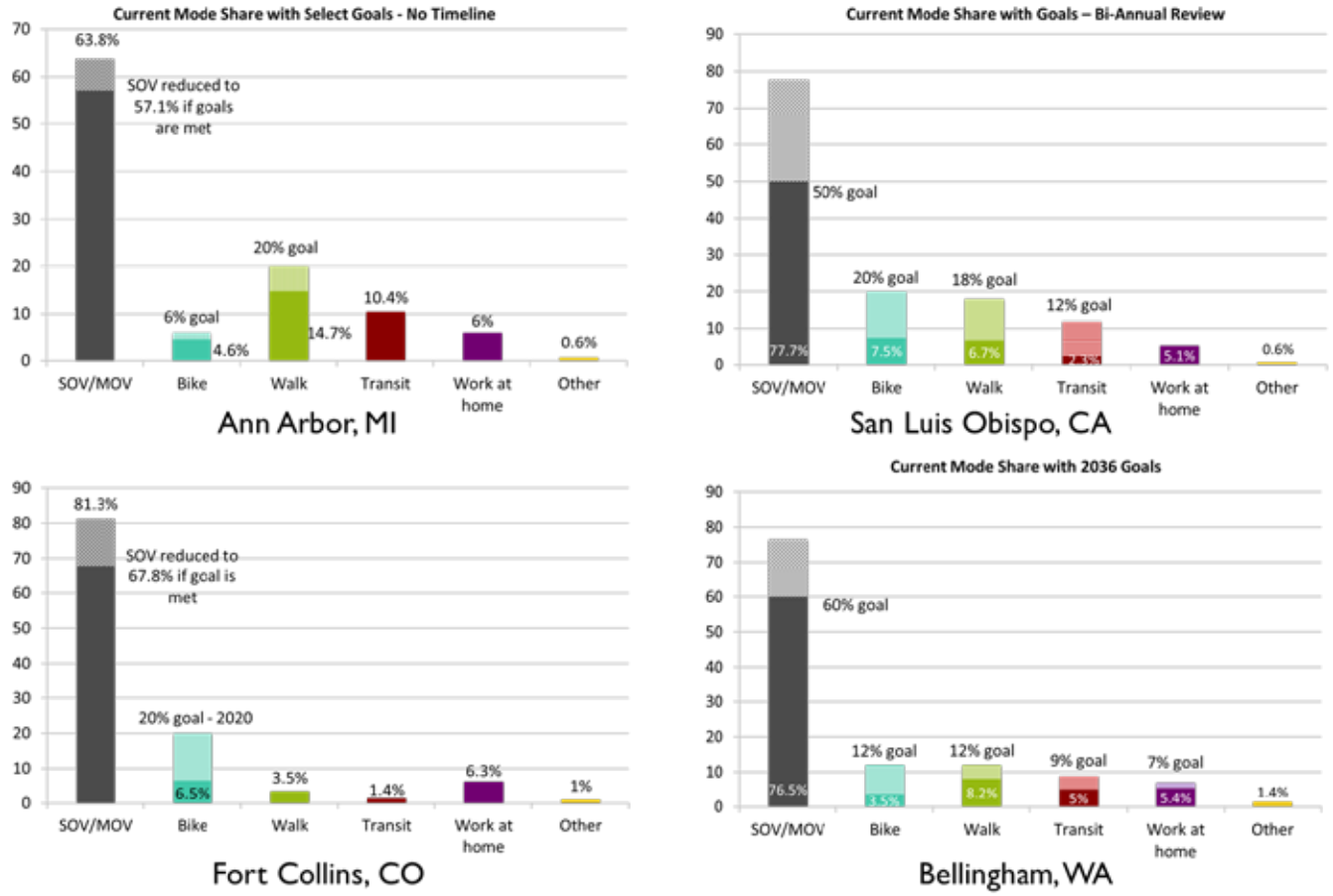


Figure 44. Current commute mode share and adopted goals in four comparison cities

but perhaps for only one or two modes, rather than a goal for each mode. Figure 44 highlights four of the comparison cities that were evaluated and presents their current mode shares and the goals they have set.

Mode Share Goal Options

In reviewing the information, the MPO developed three mode share goal options for consideration. The options were based on the comparison city research, current mode share trends in Missoula, and feedback from the public and committees. The three options included "2045 Business as Usual" "2045 Moderate" and "2045 Ambitious" goals, which are outlined in Figure 45.

Generally, the "Business as Usual" goal was based on projecting the current mode share trends to 2045. The "Moderate Goal" generally doubles the percentage mode share for each mode by 2045 and the "Ambitious Goal" generally triples the percentage

2045 Mode Share Goal Parameters

- Utilize the U.S. Census American Community Survey commute to work data based on 5-year rolling averages as the official primary data source for tracking mode share over time. (Other supplemental data, such as ridership and bike/ped activity will be used to confirm trends)
- Set the goal for the MPO Urbanized Area (not the County or the City, recognizing that what happens "in the City" has the most influence over the mode split in the Urban Area and County).
- Set an overall goal for reducing single-occupancy vehicle use and sub-goals for each mode.

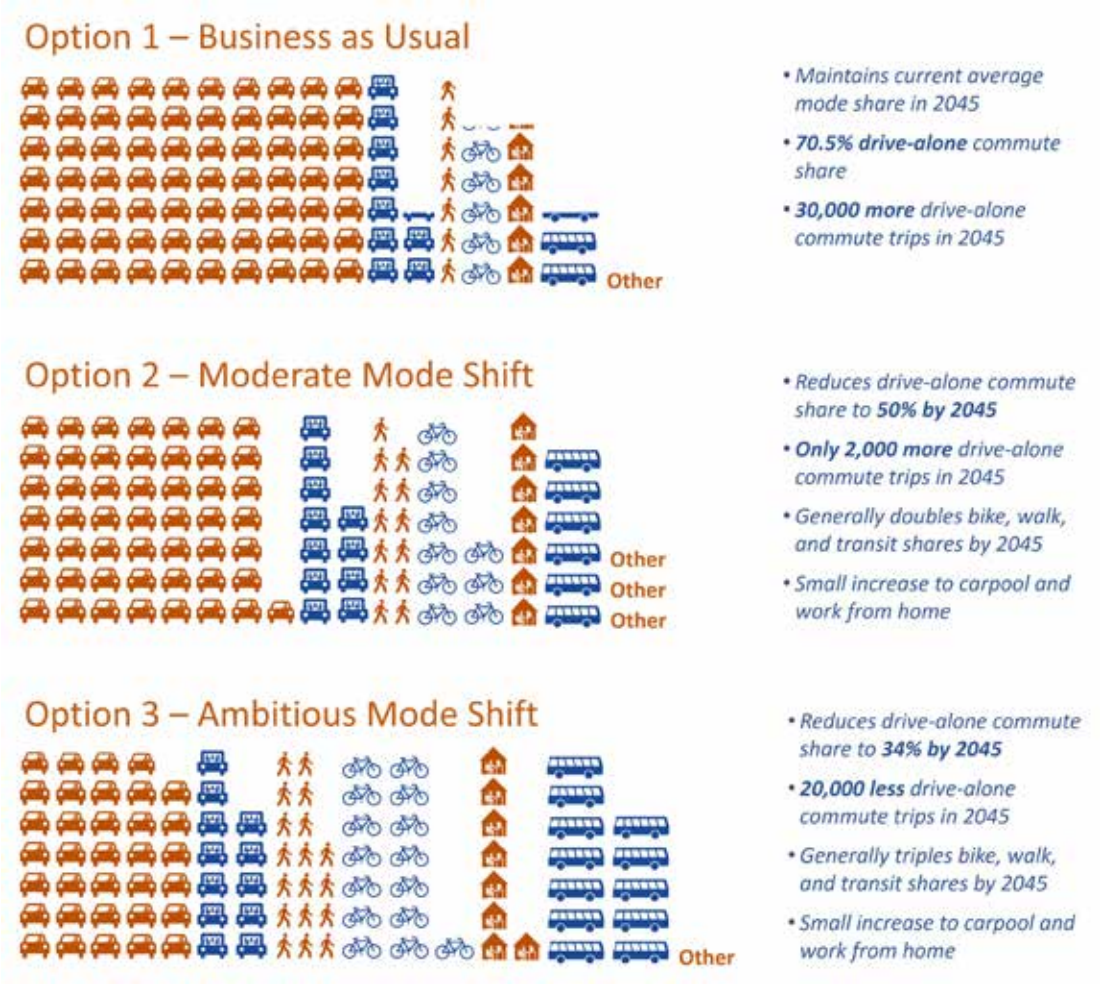


Figure 45. Three proposed 2045 commute mode share goals for the Missoula urban area

mode split for each mode by 2045, with the exceptions of "carpool" and "other" which were increased slightly and transit, which was nearly tripled (recognizing that current gains in ridership due to BOLT! service and Zero Fare may increase transit's mode share more rapidly).

Additionally, an estimate of the number of drive-alone commute trips that would occur in 2045 for each option was created as a means to compare the goals and help produce a vision of what the transportation system may need to accommodate in terms of demand.

The three proposed goals were also utilized as a starting point to put together options for how future funds should be allocated, which is described more fully in the next section.

Funding

Satisfying the Missoula MPO region's transportation needs over the next 30 years is a major undertaking. The infrastructure demands associated with building and maintaining roadways, non-motorized infrastructure, and transit systems will be challenged by the region's projected population growth and by the aging of existing infrastructure already in use. The limited availability of federal, state, and local funds will also have a significant impact on the ability to implement proposed projects. Demands on the transportation system have grown significantly in the past and the increase in this demand will accelerate faster than the growth in funding.

This section describes the revenue sources and anticipated revenues to maintain, operate, and

expand the transportation system in the Missoula MPO region from now through 2045. The financial analysis presented in this chapter meets the federal requirements stated in the FAST Act. It must be emphasized that this is a long-range systems level plan and many of the cost estimates, as well as the revenue estimates, are preliminary and will be revisited several times before the years they represent come to pass. The intent is to prepare an approximate, yet realistic estimate of both the total funds available and the total costs. It goes without saying, but not all projects that are needed and/or desired will receive funds.

Fiscal Constraint

Federal rules require that LRTPs, such as Activate Missoula 2045, be fiscally constrained. That is, planned expenditures shall not exceed the revenue estimates to support the operations, maintenance, and new construction during the 30 years covered by the LRTP. The plan must include the revenues and costs to operate and maintain the roads and associated systems to allow the MPO to estimate future transportation conditions and to promote the use of existing infrastructure to the fullest.

The MPO approached the task of estimating future project costs and revenues in a conservative manner. Revenues for each funding source were estimated to increase only 3% every 5 years. When estimating future project costs, the MPO included a 3% per year inflation rate. Additionally, when looking at future project costs, the MPO attempted to estimate when proposed projects may be completed and then estimated a project cost that reflected the "year of expenditure."

In the first 5 years of the 30-year plan, "year of expenditure" was estimated for each year using numbers from the current 2016-2020 Transportation Improvement Program; then the MPO broke the remaining years into two "bands": one for 2021 to 2030 (10-year, mid-term band) and one for 2031-2045 (15-year, long-term band). If a proposed project was estimated to be completed in one of the future bands, the "year of expenditure" was estimated to occur in the middle year of the band.

Funding Sources

In general, there are two major categories of funding sources available for transportation in the Missoula region: federal/state funds and local funds. The vast majority of funds from federal/state sources are considered to be non-discretionary – i.e. they are restricted to specific uses or types of projects. For example, Federal Transit Administration funds must be used for transit purposes, state bridge funds must be used for bridges, and federal interstate maintenance funds must be used for maintenance projects on I-90.

Even some local funding is considered non-discretionary, such as the gas tax revenue that the County and City of Missoula receive, which is largely used for roadway maintenance. Also considered to be non-discretionary, are funds that are committed to projects that are already in the pipeline. A primary example is the Russell Street project, which is

Federal and State Funds (examples)

- Surface Transportation Program Urban
- Congestion Mitigation Air Quality
- Highway Safety Improvement Program
- Bridge
- Interstate Maintenance
- National Highways
- Federal Transit Administration (Sections 5310, 5311, 5339, etc.)
- Transportation Alternatives (grants)

Local Funds (examples)

- Gas tax – allocated by the state
- Road district
- Development impact fees
- Missoula Redevelopment Agency funds

expected to utilize the majority of the region's federal Surface Transportation Program Urban (STPU) funds for the next 15 or more years.

Unfortunately, after taking non-discretionary and committed project funding out of the picture, there is not much discretionary funding left that the MPO can decide how to spend. Figure 46 illustrates the general breakdown of non-discretionary and discretionary funding estimated to be received over the next 30 years.

Currently, MPO staff estimates that approximately $760.4 million in revenues will be received within the region through 2045, however the majority of this (approximately 85 percent) is committed or non-discretionary. MPO staff estimates that there will be $97.7 million of discretionary funds through 2045 (about 15 percent of the total revenue), but it is important to note that not all of the discretionary funds are under the control of the MPO. Much of the discretionary funding is under local control, and therefore while the LRTP may recommend projects to be funded with locally-controlled funds, these recommendations are only able to be implemented by the local jurisdictions responsible for them (namely the City of Missoula and the Missoula Redevelopment Agency).

Funds from two federal/state funding sources, STPU and Congestion Mitigation and Air Quality (CMAQ) are allocated every year to the Missoula MPO and the TPCC has the ultimate authority on how these funds are spent (currently STPU funds are programmed for Russell Street and CMAQ funds are programmed to a number of ongoing programs). These are considered discretionary, along with additional locally-controlled local sources.

Local funds can also be used for the completion of projects in the LRTP. In fact, a significant number of regional transportation projects are completed using only locally-derived funds. For example, the recently completed improvements to 3rd Street, Hillview Way, miles of sidewalks in MRA's urban renewal districts, the S. Reserve Street pedestrian bridge, and Wyoming Street are all examples of locally-funded projects that contribute to the

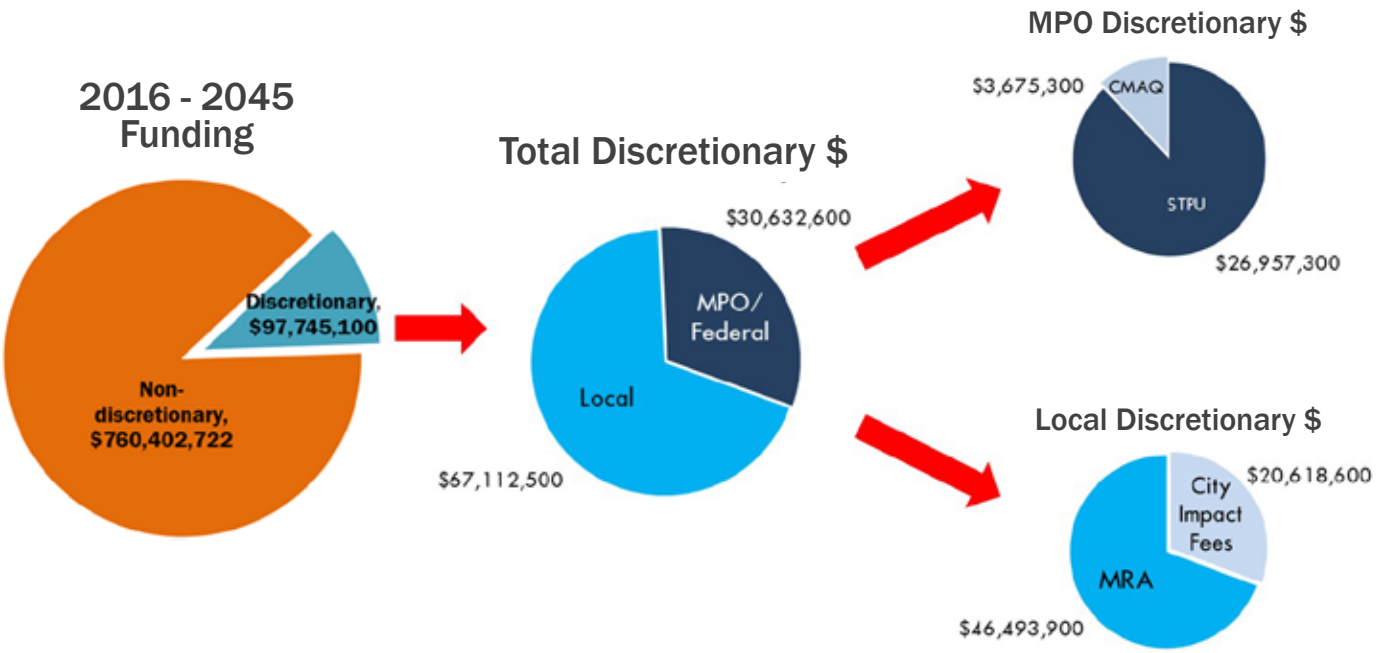


Figure 46. Estimated discretionary and non-discretionary revenues through 2045

regional transportation network. Transit funds raised through local property taxes have also made it possible for Mountain Line to operate 15-minute Bolt! service on two high-demand routes.

All in all, the LRTP is an important planning document that helps to coordinate projects and funding across the region, no matter where the funds come from or who ultimately constructs them.

Project and Program Categories

Apart from the various funding sources, it is also necessary to categorize the types of projects or programs, because this too ultimately relates to the source of funds and what can and cannot be used for particular projects or programs. For example, some funding sources are specific to capital, while others can only be used for operations. Figure 47 breaks down the project/program categories used in the funding allocations described in the next section.

Figure 47. Discretionary and non-discretionary funding categories

II. Transportation System Scenarios

Ultimately, the MPO developed four overall "transportation system scenarios" to evaluate for 2045. Each of the scenarios differed in how much of the discretionary funding ($97 million) was allocated to each category, then based on the project ranking, projects were selected for each category. For example, Scenario 1 allocated $70.6 million to "roadway" projects, then the top-ranked roadway projects that totaled no more than $70.6 million were funded in that scenario. In Scenario 3, only $35.6 million was allocated to "roadway" projects, so fewer roadway projects are funded in that scenario.

Part of the process also included matching the projects with eligible funding sources. For example, projects located in the county cannot be funded by the City of Missoula or by the MRA. Likewise, transit operating funds from the FTA cannot be used to fund roadway safety projects or construction of new trails. The complete list of ranked projects is included in Appendix C.

The process for building each of the transportation system scenarios is outlined in Figure 48. Each scenario started with a common discretionary

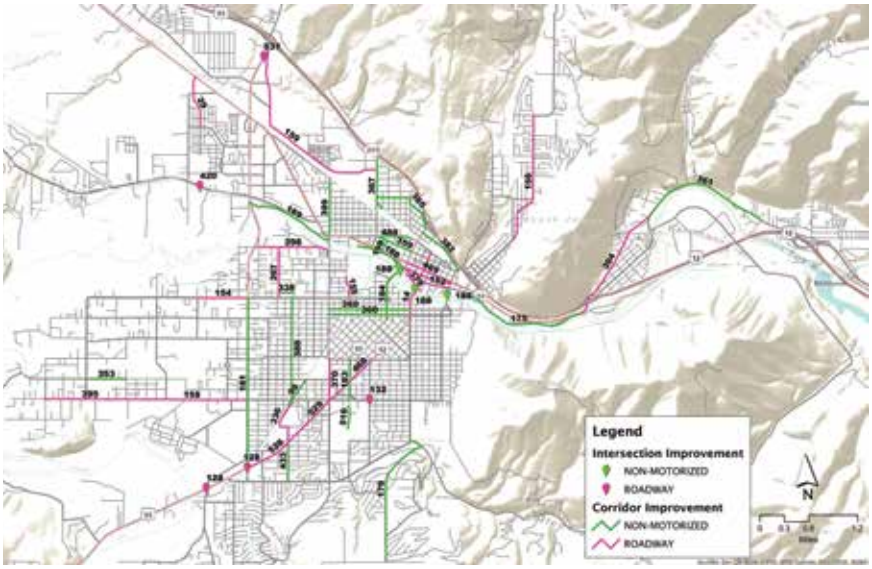
Figure 48. Outline of process for creating transportation system scenarios

funding amount, which was then allocated to the funding categories using the three mode split goals as a starting point. Once funding scenarios were established, projects were scored using the methods described in Chapter 4. The final stage of each scenario development was to select projects for funding based on ranking and eligible funding source.

The following graphics summarize each of the scenarios that were developed and presented to the public and the various committees, including the CAC, the TAC, and the TTAC and TPCC for consideration. Scenarios 1 through 3 were originally developed by the MPO and were intended to "mirror" the three mode share goals, with Scenario 1 aligning with the "Business as Usual" mode share, Scenario 2 aligning with the "Moderate" mode share, and Scenario 3 aligning with the "Ambitious" mode share. The idea behind doing this was to attempt to tie infrastructure investment to mode share outcomes. In other words, it could be assumed that greater investment in non-motorized/active modes would have a commensurate effect on shifting mode share.

Scenario 4 was developed later after receiving input from the TPCC, some of whom felt that a scenario that allocated more funding to transit was needed in order for Mountain Line to be in a better position to implement their next phase of transit improvements. Therefore Scenario 4 was created and modeled after Scenario 2, but with a larger portion of funds directed to transit.

SCENARIO #1



Roadway - $70.6M

$$$$$$$$$$$$$$

Emphasis on larger roadway projects and complete street improvements

Non-Motorized - $11.9M

$$$

Continue to fund non-motorized project at current levels. Focus on projects within the urban core

Transit - $2.2M

$

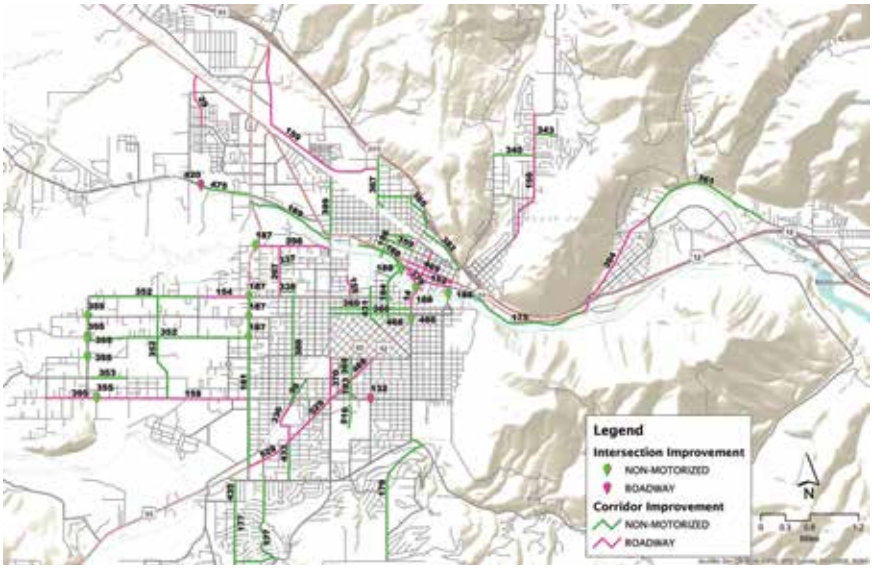
Support continued Mountain Line Phase II service (BOLT on Rte. 1 & 2); will not fund all future planned bus replacements

Other - $13M

$$$

Funding for ITS, Transportation Options (MIM, Bike/Ped/Missoula-Ravalli TMA) and CTSP priority safety improvements

SCENARIO #2



Roadway - $53.6M

$$$$$$$$$$$

Fewer roadway capacity/expansion projects; emphasis on complete streets

Non-Motorized - $24.6M

$$$$$

Expand investment in active modes; additional connections, intersection improvements and regional facilities.

Transit - $6.4M

$$

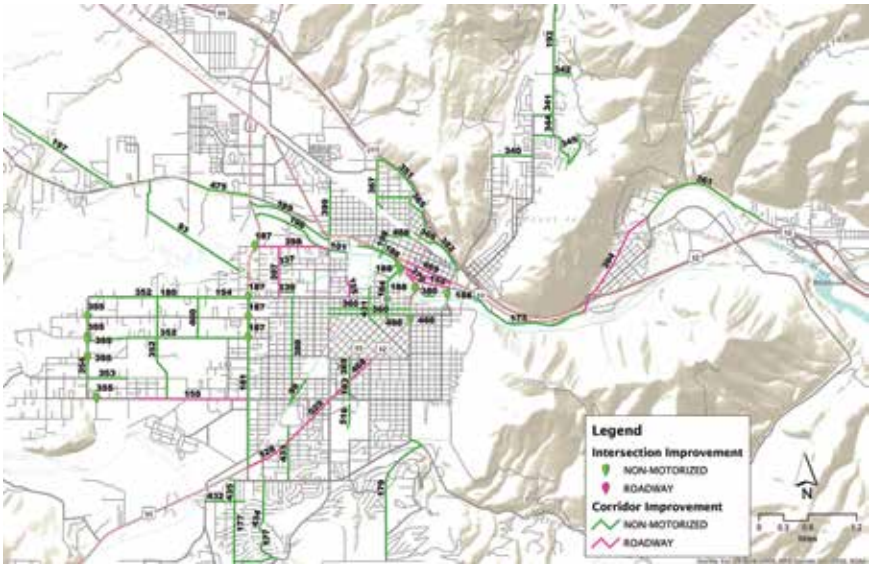
Funds capital bus purchases to continue providing Phase II (BOLT Rte. 1 & 2, evening service)

Other - $13M

$$$

Funding for ITS, Transportation Options (MIM, Bike/Ped/Missoula-Ravalli TMA) and CTSP priority safety improvements

SCENARIO #3



Roadway - $36.5M

$$$$$$$$

De-emphasize roadway projects; continue to fund priority complete streets projects

Non-Motorized - $35.3M

$$$$$$$

Shifts funding to active modes; expands intersection improvements, additional connections, and regional facilities

Transit - $12.8M

$$

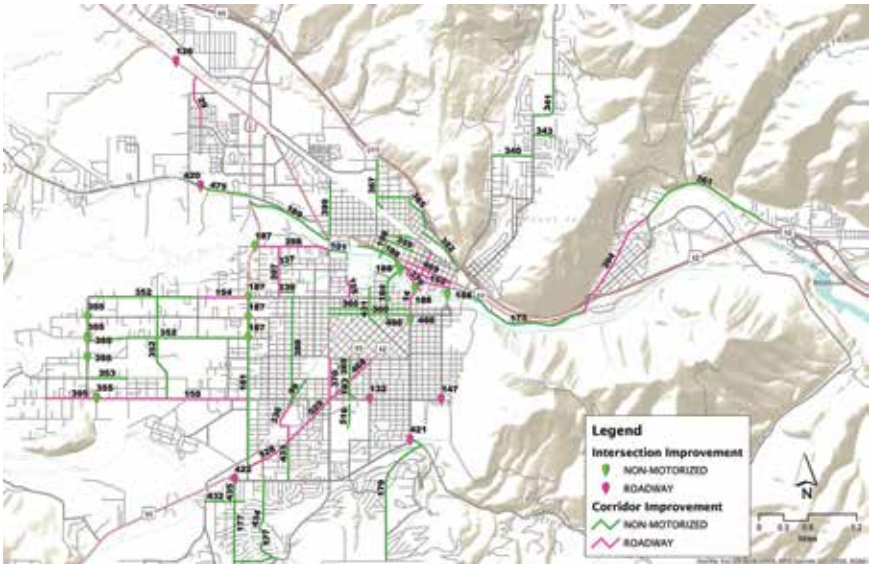
Support Mountain Line capital bus purchases for continuation of Phase II and partial funding of Phase III (add BOLT Rte)

Other - $13M

$$$

Funding for ITS, Transportation Options (MIM, Bike/Ped/Missoula-Ravalli TMA) and CTSP priority safety improvements

SCENARIO #4



Roadway - $47.6M

$$$$$$$$$$

Fewer roadway capacity/expansion projects; emphasis on complete streets

Non-Motorized - $21.9M

$$$$$

Expand investment in active modes; additional connections, intersection improvements and regional facilities.

Transit - $15.2M

$$$

Additional investment in capital bus purchases to support Phase III (add BOLT service on Brooks St, SG Mall TC)

Other - $13M

$$$

Funding for ITS, Transportation Options (MIM, Bike/Ped/Missoula-Ravalli TMA) and CTSP priority safety improvements

III. Scenario Performance

Each of the scenarios was evaluated using the MPO's travel demand model by modeling the projects funded under each scenario using 2045 housing and employment projections. The travel demand model, which is a tool for evaluating high-level regional effects of transportation projects, provides some information to help compare scenarios, but it should be noted that it is only meant to provide a general summary of possible regional effects on certain performance measures.

Table 12 summarizes the general comparison of the performance of each scenario compared to the base model for 2045 (which includes only the existing transportation system and the committed projects). The evaluation looked at performace of the scenarios using the following measures: reduced daily VMT, daily hours of delay/congestion reduced, and the daily change in the number of transit, bike, and walk trips taken system-wide.

All scenarios are expected to result in reductions to daily VMT compared with the base model in 2045, with Scenario 4 having the greatest VMT reduction. Scenarios 3 and 4 have the largest reduction in daily hours of delay, which is a measure of congestion, with Scenario 3 having the largest reduction, followed by Scenario 4. All scenarios result in increased transit, bike, and walk trips over the base 2045 model, with Scenario 3 having the largest collective increase to these modes.

Table 12. Scenario comparison of travel demand model performance measures vs. 2045 base model

Performance measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4
VMT saved (MPO area)	9,174	14,205	11,720	15,085
Hours of delay saved (MPO area)	-183	-27	196	141
Change in transit trips	578	526	533	541
Change in walk trips	1,427	1,638	1,748	1,191
Change in bicycle trips	811	1,834	1,920	1,791

All figures are changes in daily totals for the entire Missoula area transportation system


12 SOUTH HILLS
310

Our Transportation Future

I. Recommended Plan

Following more than a year of research, analysis, public outreach, and evaluation of the various aspects of the transportation system's existing and future needs, a future transportation system scenario was chosen to move forward, which includes recommended allocations of future funding to the various project categories, as well as specific project recommendations. On the policy side, a mode share goal was chosen for the MPO to help guide future decision-making. The following sections describe the process and recommendations.

The 3rd and final Transportation Summit public meeting was an open house that asked participants, after reviewing the information collected throughout the Activate Missoula 2045 process, to choose which of the 4 overall transportation system scenarios was the best for Missoula, and which of the 3 proposed mode share goals was preferred.

The information was also presented on the activatemissoula.com website to gather feedback from those who could not attend in person and members of the CAC weighed in following the public meeting.

Open house attendees, CAC members, and online participants favored Scenario 3 (heaviest non-motorized funding scenario) and Scenario 4 (balanced funding approach with additional transit focus), with responses nearly evenly split.

Similarly, the "Moderate" and "Ambitious" mode share goals were most heavily favored, with nearly all those who commented at the open house preferring the "Ambitious" goal, while the results from the CAC and online were more evenly split.

All of the collected public input was then presented to the TTAC and TPCC, which both recommended

CHAPTER CONTENTS

I. Recommended Plan
II. Estimated Revenue
III. Funding Allocation
IV. Plan Performance

Transportation Summit #3 attendees discuss the mode split and funding scenario options

that Scenario 4 be the Activate Missoula 2045 preferred plan, and that the "Ambitious" mode share goal be adopted (Figure 49 and Figure 50). The recommended scenario is arguably the most balanced of the scenarios in terms of the allocation of the available discretionary funds to each of the categories being more evenly split.

It is expected that implementation of Scenario 4 will support the achievement of the "Ambitious" mode share goal as we move toward 2045, though it is important to recognize that infrastructure is only one part of the equation when it comes to shifting travel behavior – education, encouragement, and land use policy also play a vital role.

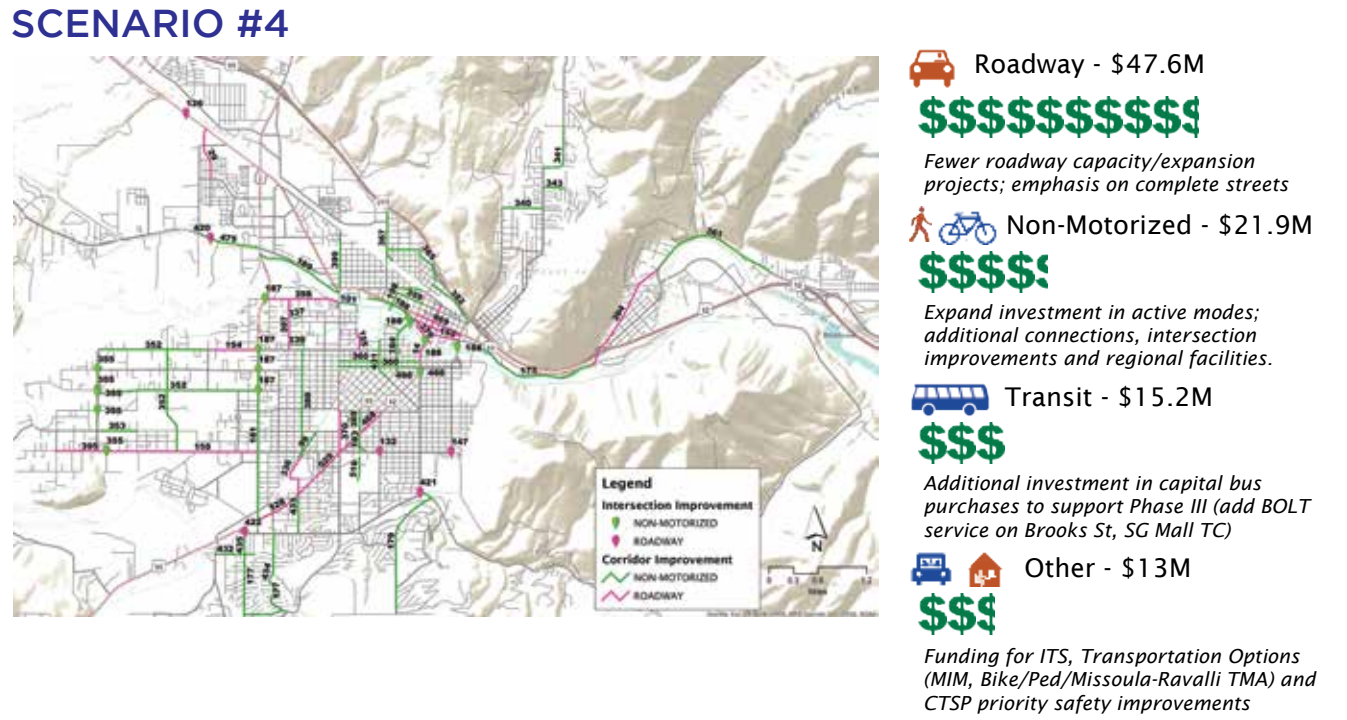


Figure 49. Adopted Activate Missoula 2045 plan scenario

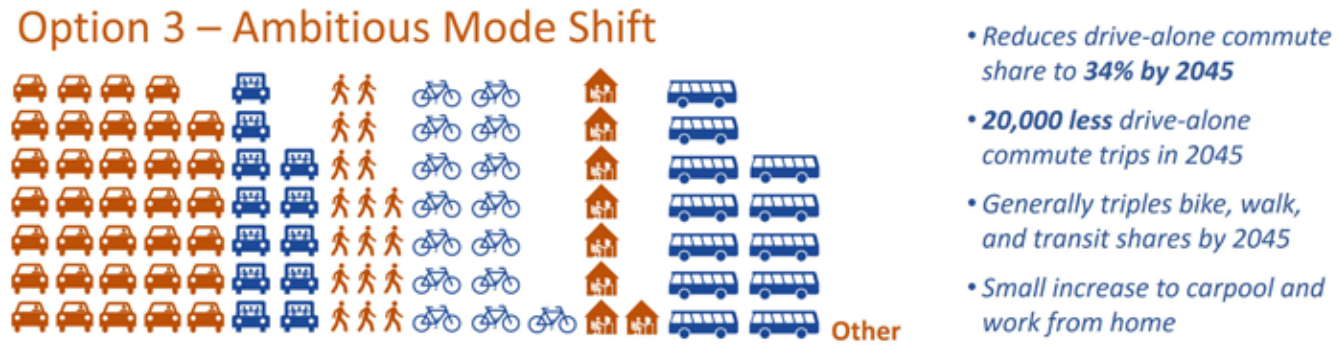


Figure 50. Adopted 2045 mode share goal

II. Estimated Revenue

The following tables summarize the expected revenues and expenditures for each funding source, for both federal and state/local funds, over the life of the plan. The expenditures (or committed and recommended projects) are described more fully in the following pages and are broken down by category of project. A full breakdown of revenue projections by year can be found in Appendix D.

Revenue estimates are grouped into three time period "bands" that represent the short-term (cover the five years of the current 2016-2020 TIP), mid-term (2021 through 2030) and long-term (the final 15 years of the plan, through 2045).

Federal funding

Federal funding sources, broken down in detail in Table 13, provide nearly half of all funding over the next 30 years.

The MPO, via the TPCC, exercises primary authority over allocating the STPU and CMAQ funding sources, while MDT is responsible for administering other federal sources such as IM, NH, STPX/STPS/SFCN, HSIP, BR, UPP, and TA.

Revenue from FTA sources, such as 5307, 5339, 5310 and 5311 are allocated by the TPCC through the TIP, however, each agency typically is responsible for programming those funds to specific projects and operational programs.

Table 13. Federal revenue sources and estimated funding over the next 30 years

	Funding Source	2016-2020	2021-2030	2031-2045	Total
Federal	Surface Transportation Program - Urban (STPU)	$24,522,700	$18,901,100	$30,531,600	$73,955,400
	Congestion Mitigation & Air Quality (CMAQ)	$7,357,100	$13,805,000	$22,254,100	$43,416,200
	Interstate Maintenance (IM)*	$44,513,900	$10,693,688	$17,640,491	$72,848,080
	National Highways (NH)*	$14,630,200	$5,780,124	$9,534,992	$29,945,315
	Montana Air & Congestion Initiative (MACI)*	$5,999,455	$10,095,880	$16,654,337	$32,749,672
	Surface Transportation Program Off-system (STPX), Secondary (STPS), and State Funded Construction (SFCN)*	$3,908,400	$17,035,181	$28,101,528	$49,045,109
	Highway Safety Improvement Program (HSIP)*	$6,246,382	$8,251,933	$13,612,530	$28,110,845
	Transportation Alternatives (TA)*	$284,600	$0	$0	$284,600
	Urban Pavement Preservation (UPP)*	$972,400	$3,905,947	$6,443,317	$11,321,663
	Bridge Program (BR)*	$33,244,400	$8,832,980	$14,571,035	$56,648,415
	Earmarks	$2,376,848	$0	$0	$2,376,848
	Federal Transit Admin. - 5307†	$8,004,491	$16,736,589	$27,035,246	$51,776,325
	Federal Transit Admin. - 5339†	$549,779	$1,149,533	$1,856,884	$3,556,196
	Federal Transit Admin. - 5310†	$618,690	$1,293,619	$2,089,632	$4,001,941
	Federal Transit Admin. - 5311	$1,102,600	$2,305,376	$3,723,961	$7,131,937
	Totals	**$154,331,945**	**$118,786,951**	**$194,049,653**	**$467,168,548**

* There is no annual allocation for these funding sources. Revenue projections are based on 2013-2015 average yearly obligation.

† Federal allocation only. Local match reflected in the Mill Levy and Passenger Revenue lines below. This also applies to CMAQ for any Mountain Line projects and local match, but the amount varies and does not substantively change the total.

All revenue received a 3% inflation increase every five years.

State and local funding

Several state and local funding sources are considered in this plan. Although not required by federal transportation planning rules, inclusion of local funding sources provides a better regional picture of transportation investments throughout the region.

The revenues and recommended funding allocations in this plan are intended to guide local decision-makers to better plan for future transportation needs and investments, and give a clear picture of how federal, state and local transportation investments can work together to improve the regional transportation system.

State revenue sources include general maintenance funding for roadways and TRANSADE funds to support local transit operations.

Local funding sources include City and County gas taxes used for roadway maintenance, road improvement district funding, tax increment financing (TIF) from Missoula's URDs, and MUTD mill levy and other income (Zero Fare partners, advertising revenue, and other sources).

Anticipated state and local revenues are detailed in Table 14.

Table 14. Local revenue sources and estimated funding over the next 30 years

	Funding Source	2016-2020	2021-2030	2031-2045	Total
State/Local	City Gas Tax	$5,461,795	$11,420,068	$18,447,268	$35,329,131
	County Gas Tax	$1,650,786	$3,451,628	$5,575,545	$10,677,958
	State Maintenance	$8,834,900	$18,472,900	$29,839,900	$57,147,700
	Local Capital Improvement Funds%	$12,056,281	$25,208,478	$40,720,209	$77,984,968
	City Road Maintenance District	$8,089,518	$16,914,372	$27,322,426	$52,326,316
	TRANSADE	$142,349	$297,638	$480,785	$920,772
	MUTD Mill Levy & other income#	$23,796,678	$50,194,888	$82,600,864	$156,592,430
	Totals	**$60,032,307**	**$125,959,972**	**$204,986,996**	**$390,979,274**

% Average of FY 2011 to 2015 Road Impact Fees + MRA URD average TIF expended between FY 2011 and 2015 on transportation related infrastructure.

MUTD Other revenue includes fares, sponsorships, advertising, etc.

All revenue received a 3% inflation increase every five years.

III. Funding Allocation

As described in Chapter 5, all considered projects and programs were assigned to one of several funding categories: roadway (capital improvements), roadway maintenance, non-motorized (bicycle and pedestrian projects), safety, ITS, transportation options, transit capital investments, and transit operations. The financial plan outlined in Scenario 4 includes a set of recommended projects that are realistic given the anticipated revenue estimates detailed in the previous section.

The following sections provide a detailed description of the projects funded under each category, as well as the sources of funding necessary to complete those projects. All project cost estimates and funding allocations are provided as year of expenditure dollars to demonstrate fiscal constraint in future years.

Roadway

Table 15 below outlines the funding allocated to roadway projects by funding source. Federal funding sources are further broken down to show the state and local match required to receive federal dollars. For example, STPU dollars are matched by the state at 13.42 percent of the total project cost.

An estimated $206 million federal and $69.1 million local dollars are projected to be available for roadway capital investments over the 30 year period of this plan. All committed and recommended roadway projects are listed in Table 23.

Table 15. Total roadway funding allocations, by revenue source

	Roadway	2016-2020	2021-2030	2031-2045	Total
Federal	STPU	$20,714,500	$15,661,551	$5,410,614	$41,786,665
	IM*	$34,595,100	$8,293,383	$13,680,907	$56,569,390
	NH*	$8,284,300	$3,427,960	$5,654,822	$17,367,082
	STPX/STPS/SFCN*	$2,832,300	$12,389,210	$20,437,454	$35,658,965
	BR*	$28,550,800	$7,647,594	$12,615,602	$48,813,996
	Earmark	$2,057,875	$0	$0	$2,057,875
	Totals	**$97,034,875**	**$47,419,698**	**$57,799,399**	**$202,253,973**

*Estimates for 2021-2030 and 2031-2045 based on average roadway portion in current TIP

	Roadway	2016-2020	2021-2030	2031-2045	Total
State/Local	STPU*	$3,210,800	$2,427,558	$838,651	$6,477,010
	IM*	$3,521,400	$796,252	$1,313,511	$5,631,163
	NH*	$1,284,100	$329,120	$542,922	$2,156,143
	STPS*	$439,000	$1,920,342	$3,167,829	$5,527,171
	BR*	$4,425,400	$1,185,386	$1,955,433	$7,566,219
	Earmark*	$318,973	$0	$0	$318,973
	Local (Impact Fees, MRA)	$8,105,000	$18,844,905	$13,947,356	$40,897,262
	Totals	**$21,304,673**	**$25,503,564**	**$21,765,703**	**$68,573,940**

*State/local match portion of overall source funding

Non-motorized

Funding allocated to non-motorized projects is shown in Table 16. Federal funding sources available for non-motorized projects include STPU and TA grants. Prior to the MAP-21 and the FAST Act, the MPO received dedicated non-motorized specific funding from Surface Transportation Program-Enhancement (STPE). However, starting with MAP-21, those dollars were allocated through the state-wide competitive TA grant program. Under this new allocation process, Missoula has only received $240,000 over the last four years.

In lieu of dedicated federal dollars, and considering that STPU funds are committed to Russell Street through 2030, more funding from local sources will be necessary to meet the goals of this plan. An estimated $8.1 million federal dollars and $33.1 million local dollars are planned for non-motorized projects over the next 30 years. The committed and recommended non-motorized projects are listed in Table 24.

Transportation Options

In this plan, funding for Transportation Options programs largely continues to support existing and on-going programs such as MIM, the City of Missoula Bicycle & Pedestrian Program, street sweepers, and MRTMA. These programs are the primary projects drawing on CMAQ funding. Table 17 shows the

Table 16. Total non-motorized funding allocations, by revenue source

	Non-motorized	2016-2020	2021-2030	2031-2045	Total
Federal	STPU	$0	$0	$7,917,681	$7,917,681
	TA	$246,400	$0	$0	$246,400
	Totals	**$246,400**	**$0**	**$7,917,681**	**$8,164,081**
State/Local	Non-motorized	2016-2020	2021-2030	2031-2045	Total
	STPU	$0	$0	$1,227,250	$1,227,250
	TA	$38,200	$0	$0	$38,200
	Local (MRA, Impact Fees)	$1,000,000	$6,321,375	$24,558,229	$31,879,604
	Totals	**$1,038,200**	**$6,321,375**	**$25,785,479**	**$33,145,054**

*State/local match portion of overall source funding

Table 17. Total Transportation Options funding allocations, by revenue source

	Transportation Options	2016-2020	2021-2030	2031-2045	Total
Federal	CMAQ	$2,014,717	$4,029,433	$6,044,150	$12,088,300
	5311	$868,535	$1,816,020	$2,933,486	$5,618,041
	Totals	**$2,883,252**	**$5,845,453**	**$8,977,636**	**$17,706,341**
St/Local	Transportation Options	2016-2020	2021-2030	2031-2045	Total
	CMAQ*	$312,283	$624,567	$936,850	$1,873,700
	5311*	$234,041	$489,356	$790,475	$1,513,872
	Totals	**$546,324**	**$1,113,923**	**$1,727,326**	**$3,387,573**

*State/local match portion of overall source funding

federal and local funding allocated to Transportation Options programs, including CMAQ and FTA 5311 sources. Local match for CMAQ and 5311 is generally the same as other federal programs, at 13.42 percent.

A full list of Transportation Options projects and programs funded in this plan are shown in Table 25.

Intelligent Transportation Systems

The Activate Missoula 2045 plan fully funds ITS projects. These systems were 100 percent funded at all tables during the Transportation Summit #2 funding game, and are strongly supported by committees. Due to lack of available federal funds in earlier years, the projects are in the long-term funding band (2031-2045). However, the MPO will continue to explore grant opportunities or other funding sources to help implement a complete ITS in Missoula at an earlier date.

Funding allocations for ITS can be found in Table 18, and all recommended ITS projects can be found in Table 26.

Safety

The primary source of funding for safety projects, aside from safety enhancements included in roadway or non-motorized projects, is the state-managed Highway Safety Improvement Program (HSIP). An estimated $25.4 million federal dollars and $3.5 million state and local dollars are committed or recommended for safety improvements.

Table 18. Total ITS funding allocations, by revenue source

	ITS	2016-2020	2021-2030	2031-2045	Total
Federal	CMAQ	$0	$0	$3,451,887	$3,451,887
	Totals	**$0**	**$0**	**$3,451,887**	**$3,451,887**

	ITS	2016-2020	2021-2030	2031-2045	Total
St/Local	CMAQ*	$0	$0	$535,046	$535,046
	Totals	**$0**	**$0**	**$535,046**	**$535,046**

*State/local match portion of overall source funding

Table 19. Total safety funding allocations, by revenue source

	Safety	2016-2020	2021-2030	2031-2045	Total
Federal	HSIP	$5,748,267	$7,426,740	$12,251,277	$25,426,284
	Totals	**$5,748,267**	**$7,426,740**	**$12,251,277**	**$25,426,284**

	Safety	2016-2020	2021-2030	2031-2045	Total
St/Local	HSIP*	$498,085	$825,193	$1,361,253	$2,684,532
	Local (MRA, Impact Fees)			$869,295	$869,295
	Totals	**$498,085**	**$825,193**	**$869,295**	**$3,553,827**

*State/local match portion of overall source funding

Total funding for safety projects, by funding source, is described in Table 19. All committed and recommended safety projects are shown in Table 27.

Roadway, Trail and Sidewalk Maintenance

Table 20 details the federal, state and local funding for roadway maintenance. This funding category includes federal and state funds administered by MDT (IM, NH, STPX/STPS/SFCN, BR, UPP, and MACI) as well as state and local sources such as City and County gas taxes, road maintenance districts, and state-funded maintenance.

A full list of maintenance projects and programs can be found in Table 28.

Trail, shared-use path, sidewalk and lighting maintenance is also funded by both the City and the County. Most funding for trail and path maintenance comes from park impact fees or general fund revenue, so it is not included in the maintenance funding tables. It is a critical component of a functional active transportation system, however, and is a source of future funding shortfalls if growth in maintenance costs continues to outpace revenue.

Estimated revenue allocations for stated-administered funding sources (IM, NH, STPX/STPS/SFCN, BR and UPP) are based on the proportion of those funds obligated to maintenance projects in the 2016-2020 TIP, and are assigned to a placeholder project until specific projects are identified for funding.

Table 20. Total roadway maintenance funding allocations, by revenue source

	Maintenance	2016-2020	2021-2030	2031-2045	Total
Federal	CMAQ	$1,982,682	$2,686,866	$4,030,299	$8,699,847
	IM*	$6,019,300	$1,463,538	$2,414,278	$9,897,116
	NH*	$4,382,500	$1,845,825	$3,044,904	$9,273,229
	STPX/STPS/SFCN*	$496,300	$2,359,850	$3,892,848	$6,748,998
	BR*	$232,200	$0	$0	$232,200
	UPP*	$841,900	$3,381,769	$5,578,624	$9,802,292
	MACI*	$4,104,300	$8,741,013	$14,419,325	$27,264,638
	Totals	**$18,059,182**	**$20,478,860**	**$33,380,278**	**$71,918,320**

*Estimates for 2021-2030 and 2031-2045 based on average maintenance portion in current TIP

	Maintenance	2016-2020	2021-2030	2031-2045	Total
State/Local	CMAQ*	$307,318	$416,467	$624,701	$1,348,486
	IM*	$577,900	$140,515	$231,796	$950,211
	NH*	$679,200	$177,219	$292,343	$1,148,761
	STPX/STPS/SFCN	$76,900	$365,779	$603,396	$1,046,075
	BR*	$36,000	$0	$0	$36,000
	UPP*	$130,500	$524,178	$864,693	$1,519,371
	MACI*	$636,169	$1,354,867	$2,235,012	$4,226,048
	Local (gas tax, road district)	$24,036,999	$50,258,968	$81,185,138	$155,481,105
	Totals	**$26,480,986**	**$53,237,993**	**$86,037,079**	**$165,756,058**

*State/local match portion of overall source funding

Transit - Capital

Transit capital costs include vehicles necessary to run Missoula's fixed route and paratransit services, as well as improvements to facilities, bus stops, and transfer centers. Funding available for transit capital improvements comes from federal, state and local sources, including FTA programs (5310, 5339), CMAQ, STPU, and local mill levy revenue.

The transit funding in this plan assumes Mountain Line will implement their Phase III services, which include an additional BOLT! line, expanded evening service, and a redesigned transfer center at the Southgate Mall. In order to achieve these fixed route service expansions, a substantial investment in capital bus purchases is necessary. Projected costs from MPO funding sources is listed in Table 21. Committed and recommended transit capital projects are listed in Table 29.

Transit - Operations

Funding for transit operations also comes from a combination of federal, state and local sources. In addition to transit-dedicated FTA funding sources for service operations (5307), operations received funding from CMAQ, TRANSADE (state-allocated funds for transit service), and local mill levy revenue.

While the costs listed in Table 22 represent all anticipated transit operations funding, the specified expenses are determined annually by the FTA and MUTD (compensation, fuel, parts, repairs and other expenses). The MPO does program specific projects in this category.

Table 21. Total transit capital funding allocations, by revenue source

	Transit - Capital	2016-2020	2021-2030	2031-2045	Total
Federal	CMAQ	$531,861	$1,407,380	$2,887,508	$4,826,749
	STPU	$0	$0	$13,160,160	$13,160,160
	5339	$439,823	$919,626	$1,485,507	$2,844,957
	5310	$494,952	$1,034,895	$1,671,705	$3,201,552
	Totals	**$1,466,636**	**$3,361,901**	**$19,204,880**	**$24,033,418**
State/Local	Transit - Capital	2016-2020	2021-2030	2031-2045	Total
	CMAQ*	$82,439	$218,146	$447,567	$748,152
	STPU*	$0	$0	$2,039,840	$2,039,840
	5339	$109,956	$229,907	$371,377	$711,239
	5310	$123,738	$258,724	$417,926	$800,388
	Totals	**$316,133**	**$706,776**	**$3,276,710**	**$4,299,619**

*State/local match portion of overall source funding

Table 22. Total transit operations funding allocations, by revenue source

	Transit - Operations	2016-2020	2021-2030	2031-2045	Total
Federal	CMAQ	$1,451,117	$2,480,000	$3,720,000	$7,651,117
	5307	$8,004,491	$16,736,589	$27,035,246	$51,776,325
	Totals	**$9,455,607**	**$19,216,589**	**$30,755,246**	**$59,427,442**
State/Local	Transit - Operations	2016-2020	2021-2030	2031-2045	Total
	CMAQ*	$351,083	$620,000	$930,000	$1,901,083
	TRANSADE	$142,349	$297,638	$480,785	$920,772
	Mill Levy, Other Revenue	$23,796,678	$50,194,888	$82,600,864	$156,592,430
	Totals	**$24,290,110**	**$51,112,526**	**$84,011,649**	**$159,414,285**

*State/local match portion of overall source funding

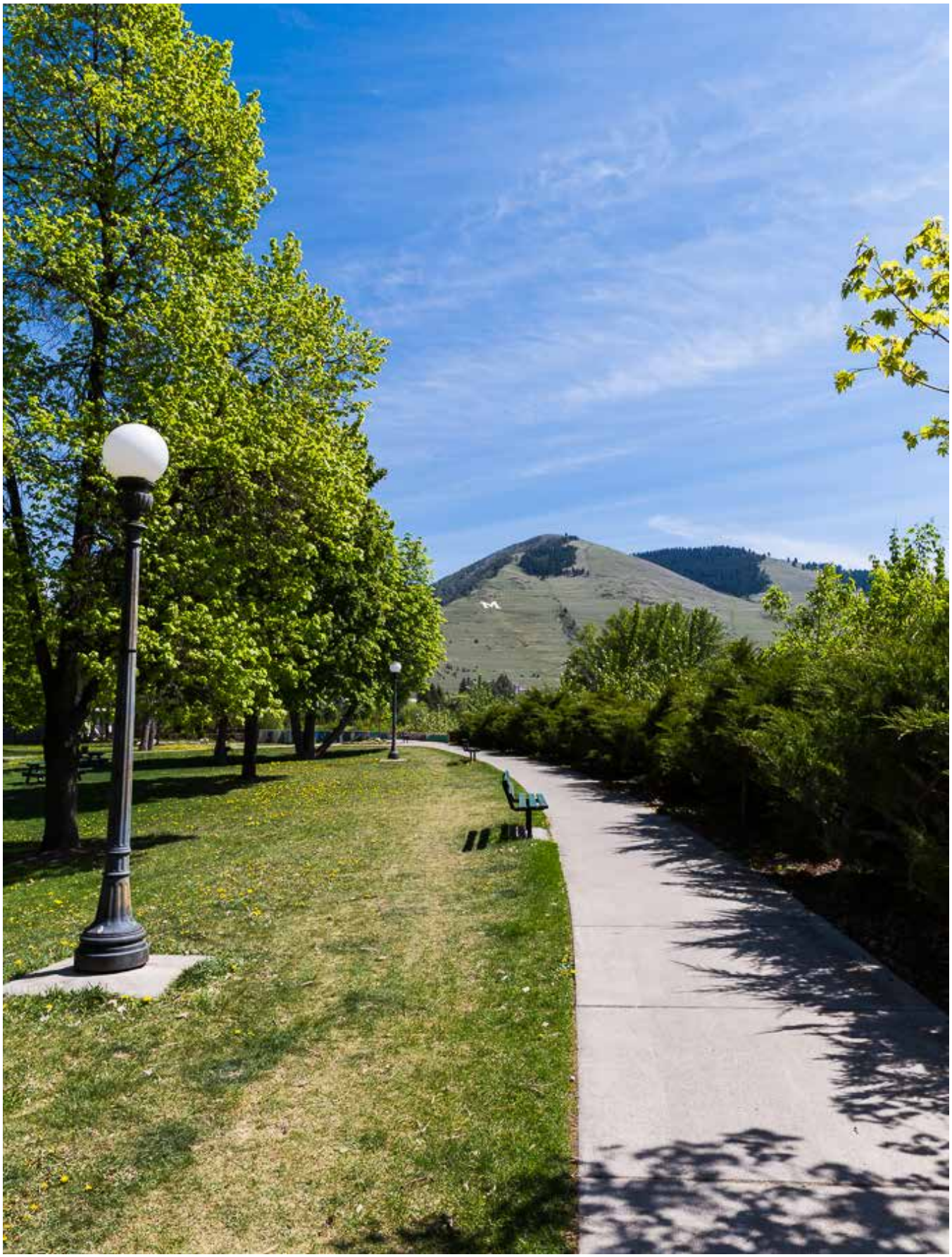


Table 23. Committed and Recommended roadway improvement projects

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Committed Projects	7	N/A	Russell Street and Bridge Reconstruction (Broadway to Dakota)	MDT/City	STPU, BR, EARMARK	$36,750,900	$36,750,900	$4,931,973	$31,818,975				
	11	N/A	2nd half of Russell Street (Dakota to Mount Avenue)	MDT/City	STPU	$19,640,309	$19,640,309	$208,200	$1,343,000	$2,427,558	$15,661,551		
	30	N/A	Street Improvements: Wyoming (California to Russell)	City	Local	$200,000	$200,000	$200,000					
	37	N/A	Bitteroot River - W of Missoula (South Ave Bridge - MacClay Bridge)	County	BR	$10,900,000	$9,657,980	$110,700	$714,300	$1,185,386	$7,647,594	$577,285	$3,724,388
	39	N/A	US 93: North of Desmet Interchange - North	MDT	NH	$8,414,800	$8,414,800	$1,129,300	$7,285,500				
	40	N/A	I-90: Missoula - East and West (Van Buran St, $5,821,000 interchange)	MDT	IM	$8,918,200	$10,838,400	$949,400	$9,889,000				
	40.5	N/A	I-90: Missoula - East and West (Orange Street, $1,969,000 interchange)	MDT	IM	$3,925,800	$3,932,700	$344,500	$3,588,200				
	49	N/A	Street Improvements: California (River Road to Dakota)	City	Local	$400,000	$400,000	$400,000					
	54	N/A	Van Buren Street Reconstruction (Elm to Missoula Ave)	City	Local	$345,000	$345,000	$345,000					
	122	N/A	Grant Creek Road right lane addition at I-90	MDT/City	IM, Local funds	$604,200	$604,200	$235,400	$368,800				
	131	N/A	Huson - East	MDT	STPS	$3,271,300	$3,271,300	$439,000	$2,832,300				
	347	N/A	Higgins Avenue Bridge Improvements - UPN 8807	City/MDT	BR	$11,219,200	$11,219,200	$1,505,600	$9,713,600				
	485	N/A	Intersection improvements - MT 200 and Old Hwy 10	MDT	NH	$1,153,600	$1,153,600	$154,800	$998,800				
	511	N/A	Madison Street Bridge Improvements - UPN 8806	MDT	BR	$8,931,900	$8,932,000	$1,198,700	$7,733,300				
	538	N/A	Mary Street - extend from Reserve over railroad to new Southgate Mall connector.	City	MRA	$2,500,000	$2,500,000	$2,500,000					
	537	N/A	I-90 Bridge replacement - Bonner	MDT	IM	$20,027,800	$22,741,200	$1,992,100	$20,749,100				
		N/A	Placeholder for future IM projects	MDT	IM	$24,084,053	$24,084,053			$796,252	$8,293,383	$1,313,511	$13,680,907
		N/A	Placeholder for future NH projects	MDT	NH	$9,954,825	$9,954,825			$329,120	$3,427,960	$542,922	$5,654,822
		N/A	Placeholder for future STPX/STPS/SFCN projects	MDT	STPX/STPS/SFCN	$37,914,836	$37,914,836			$1,920,342	$12,389,210	$3,167,829	$20,437,454
		N/A	Placeholder for future BR projects	MDT	BR	$10,269,362	$10,269,362					$1,378,148	$8,891,214
Recommended Projects	528	132	Brooks St. (Reserve to Paxson) complete street	City	MRA	$2,200,000	$2,923,751			$2,923,751			
	158	128	Complete Street Improvements: South Ave. (Reserve to 36th) including intersection improvements at Old Fort and South Ave	City	Local	$4,660,000	$4,660,000	$4,660,000					
	394	118.5	East Missoula - Highway 200 complete street reconstruction	County	STPU	$1,835,000	$3,544,792					$475,711	$3,069,081
	469	113	Downtown Master Plan	City	MRA	$2,500,000	$3,322,445			$3,322,445			
	152	104.5	Front/Main conversion to 2-way streets	City	MRA	$5,000,000	$6,644,889			$6,644,889			
	154	103.5	Street Improvements: 3rd (Reserve to Hiberta)	City/County	STPU	$1,400,000	$2,704,474					$362,940	$2,341,533
	397	98	Reconstruct Curtis St to make it a complete street	City	Local	$770,000	$1,023,313			$1,023,313			
	398	93.5	Reconstruct River Road from Russell to Reserve as a complete street	City	Local	$1,210,000	$1,608,063			$1,608,063			
	14	93	Higgins Avenue: 3-Lane conversion from Brooks Street to Broadway as detailed in the Downtown Master Plan (excluding bridge)	City	Local	$2,500,000	$3,322,445			$3,322,445			
	370	88.5	Reconstruction to Complete Street standards - Russell St. from Mount to Brooks	City	Local	$2,500,000	$4,829,417					$4,829,417	
	155	88	Street Improvements: California (3rd to Dakota)	City	MRA	$1,000,000	$1,931,767					$1,931,767	
	336	87.5	Johnson Street: Extend from South Avenue to Brooks Street	City	MRA	$2,500,000	$2,549,932					$2,549,932	
	379	83.5	Carousel Drive reconfiguration	City	Local	$500,000	$965,883					$965,883	
	420	83.5	Intersection improvement at Mullan Rd & Mary Jane Blvd		Local	$100,000	$193,177					$193,177	
	132	73.5	Intersection Improvements: Bancroft/South Ave	City	Local	$300,000	$579,530					$579,530	
	468	67.5	Brooks St. (Stephens to Mount) reconstruct to complete street	City	MRA	$500,000	$965,883					$965,883	
	421	66	Intersection improvement at Higgins Ave & Pattee Creek Rd	City	Local	$100,000	$193,177					$193,177	
	126	65	Intersection Improvements: W. Broadway& George Elmer	MDT/City	Local	$500,000	$965,883					$965,883	
	422	63.5	Intersection Improvements at Gharrett St & 39th St	City	Local	$100,000	$193,177					$193,177	
	147	63	Intersection Improvements: Arthur & South	City	Local	$300,000	$579,530					$579,530	

Table 24. Committed and Recommended non-motorized projects

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Committed Projects	94	#N/A	Bitterroot Branch Trail Improved Crossing at Russell	City	STPU	$1,500,000	$2,897,650					$388,865	$2,508,786
	100	#N/A	Bitterroot Trail: Improve at-grade trail crossings to increase visibility/safety for bicyclists and pedestrians	City	TA	$284,600	$284,600	$38,200	$246,400				
	99	93.5	Complete Bitterroot Branch Trail between North and Livingston - Include crossing improvements at Johnson & South	City	MRA	$1,000,000	$1,000,000	$1,000,000					
Recommended Projects	198	118.5	Bitterroot Branch Trail - Pine to Spruce	City	Local	$45,000	$59,804			$59,804			
	175	112.5	Complete North Bank Riverfront Trail from Eastgate to Easy Street	City	Local, MRA	$414,300	$800,331					$800,331	
	402	110.5	City-wide Bicycle Greenways	City	Local	$1,950,000	$2,591,507			$2,591,507			
	184	104.5	Convert Orange St from 1st St to Sixth St into a complete street and increase bicycle and pedestrian access	City	Local	$302,000	$583,394					$583,394	
	359	98	Bike Facility Improvements -- W. Spruce from Orange to Railroad Tracks	City	Local	$51,927	$69,009			$69,009			
	181	90	Reserve Street: Develop Buffered Bike Lanes to Allow for Two Foot Painted Divider - US 93 to S. 3rd Street	City	Local	$50,000	$66,449			$66,449			
	360	90	5th/6th Street improvements for bike/pedestrian access and safety	City	Local	$159,643	$212,161			$212,161			
	534	90	Bike/Ped Bridge from Riverfront Triangle to McCormick Park	City	Local, MRA	$2,500,000	$3,322,445			$3,322,445			
	399	88	Add Bicycle Lanes to N Russell St from Broadway north to the train tracks	City	Local	$17,700	$34,192					$34,192	
	488	88	Bike lanes on Toole Ave (Northside Pedestrian Bridge to Spruce)	City	Local	$12,500	$24,147					$24,147	
	188	86	Northbank Riverfront Trails per West Broadway Corridor Plan	City	Local, MRA	$1,000,000	$1,931,767					$1,931,767	
	338	83.5	Emma Dickinson Learning Center-Council Grove Apartments bike-ped connection	City	Local	$172,586	$333,396					$333,396	
	361	83.5	Highway 200 Multi-use path - Sha-Ron to Tamarack	County	STPU	$2,565,018	$4,955,017					$664,963	$4,290,053
	365	83	Bike Lanes - N. 5th St., Worden, Cooley	City	Local	$139,205	$268,911					$268,911	
	433	83	Bicycle Lane: Paxson St from the Southgate Mall to 39th St	City	Local	$16,800	$32,454					$32,454	
	189	82.5	Northbank Riverfront Trail - Russell to Reserve	City	Local	$1,000,000	$1,931,767					$1,931,767	
	388	80.5	Bike lane on Johnsons from South to 3rd st	City	Local	$37,500	$72,441					$72,441	
	382	78.5	Reconfigure N. 2nd St to complete street	City	Local	$360,000	$695,436					$695,436	
	183	78	Stephens Avenue: Add bike lanes from Brooks to South	City	Local	$25,000	$48,294					$48,294	
	187	73.5	Construct Reserve Bike/Ped Crossings at Spurgin, 7th, and River Rd.	City	Local	$3,000,000	$5,795,300					$5,795,300	
	353	73.5	North Avenue Bike Path: Clements - 37th	County	STPU	$368,955	$712,734					$95,649	$617,085
	179	71	Develop Whitaker Bike and Pedestrian Facilities to/from SW Higgins Avenue	City	Local	$238,000	$459,760					$459,760	
	367	71	Trail - Scott St. to Interstate Greenway	City	Local, MRA	$490,110	$946,778					$946,778	
	177	70	Install Sidewalk in the South Hills (Gharrett, 23rd, Hillview Way, 55th, Country Club)	City	Local	$159,000	$307,151					$307,151	
	369	68.5	Shared-use path connection - Strand to Burlington	City	Local, MRA	$47,333	$91,436					$91,436	
	536	68.5	Post Siding Road shared-use path connection	City	Local	$368,000	$710,890					$710,890	
	431	68	Bicycle Lane: Beckwith/Walnut from Stephens to 1st St	City	Local	$22,800	$44,044					$44,044	
	349	66	Bitterroot Branch Trail River Crossing	City	Local	$1,500,000	$2,897,650					$2,897,650	
	355	66	Clements & Mount	County	STPU	$300,000	$579,530					$77,773	$501,757
	475	66	Mullan Road Trail – Flynn Lane to Reserve Street	City	Local	$775,000	$1,497,119					$1,497,119	
	518	66	Milwaukee Trail connection to Hawthorne school	City/County	Local	$100,000	$193,177					$193,177	
	519	66	Bike/Ped bridge - Missoula College to Kim Williams trail	City	Local, MRA	$2,500,000	$4,829,417					$4,829,417	
	466	65.5	Intersection of Higgins and Brooks Bicycle Slip Lane	City/MDT	Local	$15,000	$28,977					$28,977	

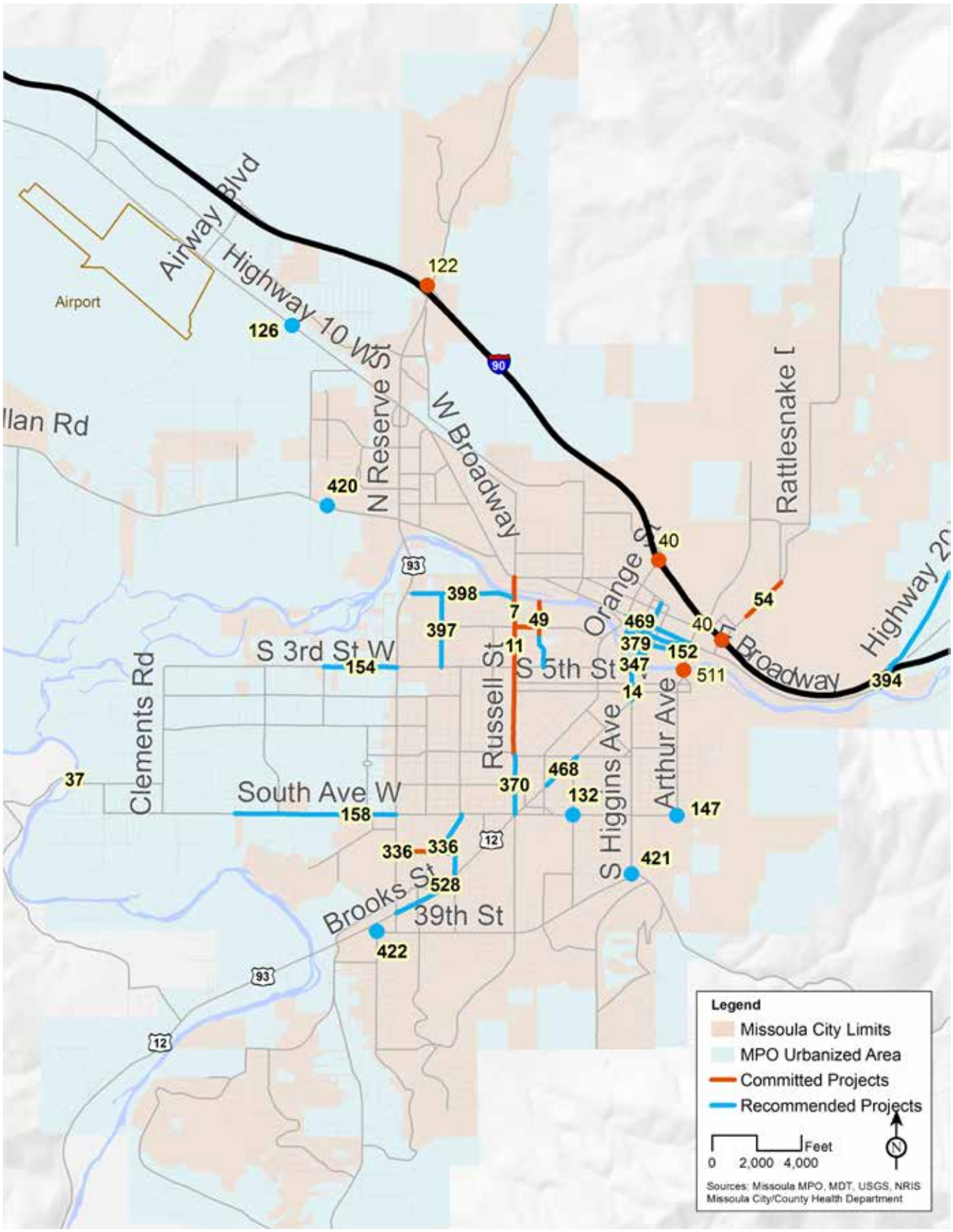


Figure 51. Committed and recommended roadway projects

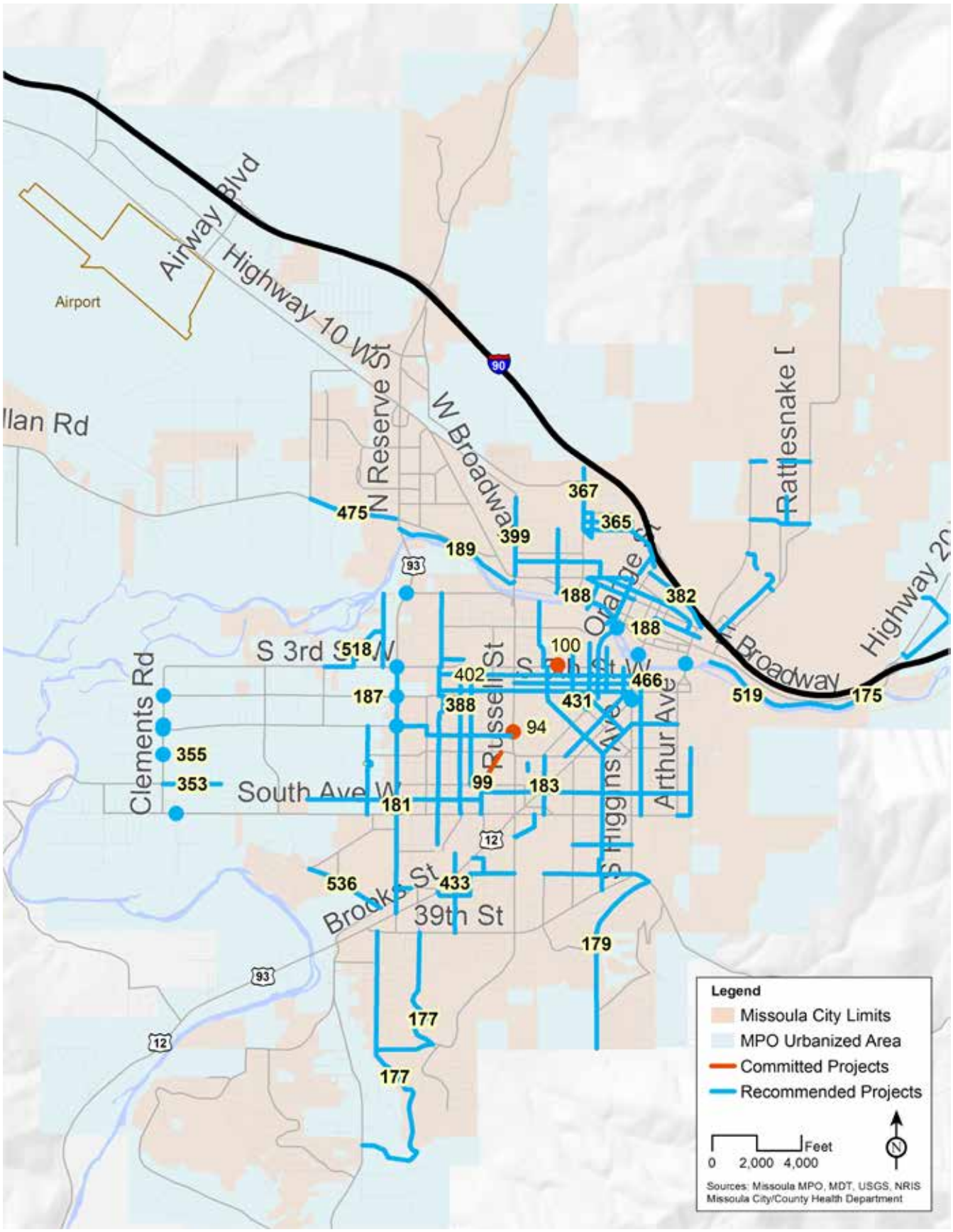


Figure 52. Committed and recommended non-motorized projects

Table 25. Committed and Recommended transportation options projects/programs

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Committed Projects	119	#N/A	Bike and Pedestrian Program (30 Years @ $30,000 per Year)	MPO	CMAQ	$888,114	$1,326,000	$29,658	$191,342	$59,316	$382,684	$88,975	$574,025
	120	#N/A	Missoula in Motion (30-Years @ $320,000 per Year)	MPO	CMAQ	$7,279,574	$9,600,000	$214,720	$1,385,280	$429,440	$2,770,560	$644,160	$4,155,840
		#N/A	Vanpool Operations, Administration & Maintenance	MRTMA	5311	$1,138,764	$1,138,764	$23,626	$152,424	$49,399	$318,704	$79,797	$514,814
		#N/A	Vanpool Capital purchases (vans, carpool vehicles)	MRTMA	5311	$5,993,150	$5,993,150	$210,415	$716,111	$439,957	$1,497,317	$710,679	$2,418,672
	386	#N/A	MRTMA (28-Years @ $125,700 per year)	MPO	CMAQ	$3,036,000	$3,036,000	$67,905	$438,095	$135,810	$876,190	$203,716	$1,314,284

Table 26. Committed and Recommended ITS projects

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Recom. Projects	437	N/A	Traffic Signal Controllers	MDT/City	CMAQ	$500,000	$664,489					$89,174	$575,314
	479	N/A	Advanced Signal Detectors	MDT/City	CMAQ	$1,000,000	$1,328,978					$178,349	$1,150,629
	480	N/A	Adaptive Signal Control System	MDT/City	CMAQ	$1,000,000	$1,328,978					$178,349	$1,150,629
	481	N/A	Transit Priority System for Signalized Intersections	MDT/City	CMAQ	$500,000	$664,489					$89,174	$575,314

Table 27. Committed and Recommended safety projects

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Com Proj	515	#N/A	Reserve Street Bridge safety barrier over Clark Fork River: Mullan Rd. to River Rd.	MDT	HSIP	$1,101,370	$1,101,370	$110,137	$991,233				
			Safety upgrades/maintenance improvements	MDT	HSIP	$3,657,800	$4,444,282	$317,848	$4,126,434	$825,193	$7,426,740	$1,361,253	$12,251,277
	517	#N/A	I-90 Safety Barrier near Frenchtown: MP 84.2-94.4	MDT	HSIP	$700,700	$700,700	$70,100	$630,600				
Rec Proj	48	#N/A	Intersection Improvements: George Elmer Drive & Mullan signal	City	Local funds	$450,000	$869,295					$869,295	

Table 28. Committed and Recommended roadway maintenance projects/programs

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Commited Projects	58	N/A	Purchase Street Cleaners - City and County	MPO	CMAQ	$10,048,333	$10,048,333	$307,318	$1,982,682	$416,467	$2,686,866	$624,701	$4,030,299
	59	N/A	Ongoing Roadway Operations & Maintenance	City/County/MDT	MACI, NH, STPS,	$144,273,132	$144,273,132	$21,948,426	$5,880,600	$44,258,968		$72,185,138	
	60	N/A	I-90: Frenchtown East and West	MDT	IM	$991,000	$991,000	$86,800	$904,200				
	102	N/A	Annual Sidewalk Installation/Replacement Program	City	Local	$18,000,000	$18,000,000	$3,000,000		$6,000,000		$9,000,000	
		N/A	Missoula ADA upgrades	MDT	MACI	$4,555,400	$4,555,442	$611,342	$3,944,100				
		N/A	Reserve St Interchange - E & W pavement preservation	MDT	IM	$5,606,200	$5,606,200	$491,100	$5,115,100				
	516	N/A	Bridge Maintenance - Steel Bridge Rehabilitation (6 bridges in Missoula area)	MDT	BR	$268,200	$268,200	$36,000	$232,200				
		N/A	Placeholder for future IM projects	MDT	IM	$4,250,127	$4,250,127			$140,515	$1,463,538	$231,796	$2,414,278
		N/A	Placeholder for future NH projects	MDT	NH	$5,360,290	$5,360,290			$177,219	$1,845,825	$292,343	$3,044,904
		N/A	Placeholder for future UPP projects	MDT	UPP	$10,349,263	$10,349,263			$524,178	$3,381,769	$864,693	$5,578,624
		N/A	Placeholder for future STPX/STPS/SFCN projects	MDT	STPX/STPS/SFCN	$7,221,873	$7,221,873			$365,779	$2,359,850	$603,396	$3,892,848
		N/A	Placeholder for future MACI projects	MDT	MACI	$26,750,217	$26,750,217			$1,354,867	$8,741,013	$2,235,012	$14,419,325

Table 29. Committed and Recommended transit projects/programs

2016 Status	ID	Score	PROJECT	Agency	Funding Source	Total Cost ($) Current Year	Cost ($) Future Year	2016-2020 State/Local	2016-2020 Federal	2021-2030 State/Local	2021-2030 Federal	2031-2045 State/Local	2031-2045 Federal
Committed Projects	Transit		Operations	MUTD	CMAQ, 5307, TRANSADE, Mill Levy, Other	$218,277,627	$218,277,627	$23,849,127	$9,332,491	$51,112,526	$19,216,589	$84,011,649	$30,755,246
	Transit		Capital purchases (buses, paratransit vans, other)	MUTD	5339	$3,556,196	$3,556,196	$109,956	$439,823	$229,907	$919,626	$371,377	$1,485,507
	Transit		Paratransit capital purchases (paratransit vans)	MUTD, ORI, AWARE	5310	$4,001,941	$4,001,941	$123,738	$494,952	$258,724	$1,034,895	$417,926	$1,671,705
	Transit		Capital purchases (buses, paratransit vans, other)	MUTD	CMAQ	$5,574,901	$5,574,901	$82,439	$531,861	$218,146	$1,407,380	$447,567	$2,887,508
	Transit		Marketing & Education	MUTD	CMAQ	$142,200	$142,200	$19,083	$123,117	$0	$0	$0	$0
Rec Proj	Transit		Transit bus purchase - 15 buses to expand service and implement MUTD Phase 3 (service on Brooks Street)	MUTD	STPU	$15,200,000	$15,200,000					$2,039,840	$13,160,160

Funding summary

Based on the funding allocations and recommended projects described above, the following charts (Figure 53 and Figure 54) provide a simplified illustration of the amount of discretionary and total funds allocated to each project category. Given the amount of funding committed to projects like Russell Street reconstruction and limits on some funding sources such as transit revenue, even relatively large shifts of discretionary funds to different categories like non-motorized projects only have a small effect on the overall distribution of funds.

IV. Plan Performance

The recommended plan and projects support the overall goals and objectives of the Activate Missoula 2045 LRTP, as well as the National Performance Goals and Planning Factors outlined in Chapter 4. Table 30 provides a summary of how the recommended plan is consistent with the goals and objectives, both from a system-wide and project specific perspective.

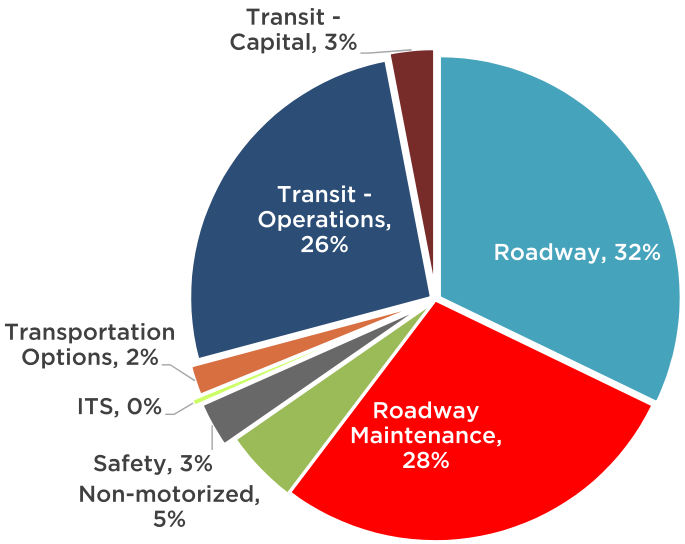


Figure 53. Project categories, as a percentage of all funding (committed + recommended projects)

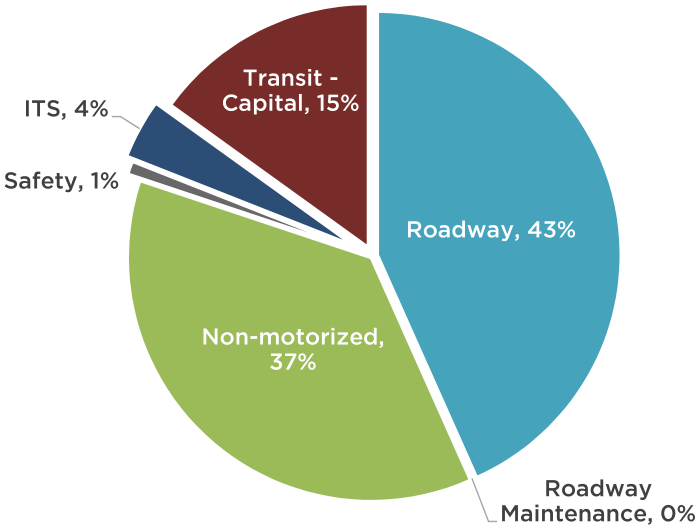


Figure 54. Project categories, as a percentage of available discretionary funding (recommended projects only)

Table 30. Recommended plan consistency with goals and objectives

Activate Missoula 2045 Goals	Performance Objectives (System-level and Project-level)	Recommended Plan Consistency
Goal 1: Maintain our existing transportation system	a. Maintain & repair existing roads, bridges, sidewalks and trails to good or better condition	Adequate Federal/State and local funding is projected to continue maintaining existing facilities, including roadways, bridges, trails, bike facilities, etc. at existing levels, however as infrastructure is constructed, maintenance needs will continue to grow. The plan recommends no new roads or significant roadway expansions, instead focusing on efficiency improvements, complete streets, and investments in bicycle, transit and pedestrian infrastructure.
	b. Promote complete streets and increase access to additional modes by replacing & retrofitting existing system to allow for wide range of transportation options	
Goal 2: Improve the efficiency, performance and connectivity of a balanced transportation system	a. Optimize Efficiency	The plan recommends investment in intelligent transportation systems as a means of improving efficiency of the existing roadway network, as well as via non-motorized connectivity.
	b. Minimize increases in travel times by methods such as providing direct routes between destinations, use of intelligent transportation systems and transportation demand management tools, and/or providing information to the public to allow them to make informed transportation decisions.	
Goal 3: Maximize cost effectiveness of transportation	a. Plan for a system that is affordable, sustainable, and makes best use of public funds	The plan attempts to balance investments in all modes and prioritizes projects that benefit multiple users, such as through complete street projects. Preservation of the existing system, with limited investment in new and expanded infrastructure was also prioritized.
	b. Reduce cost of travel to users	
	c. Construct projects with capital cost that produces a corresponding benefit to travelers	
	d. Reduce project costs and expedite the movement of people & goods by accelerating project completion	
Goal 4: Promote consistency between land use and transportation plans to enhance mobility & accessibility	a. Provide a transportation network which supports City and County Growth Policies with an emphasis on “Focus Inward” for Missoula’s urban area and providing a range of transportation options for the region’s community centers	The plan is consistent with the City Growth Policy and “Focus Inward” emphasis. Project ranking prioritized projects within the urban core, serving mixed-use and other activity centers, as well as infill areas. The plan also supports providing transportation options for the region’s community centers such as Lolo, East Missoula and Bonner.
	b. Develop mixed use activity centers including infill & redevelopment areas	
	c. Provide travel choice along multimodal corridors (complete streets)	

Activate Missoula 2045 Goals	Performance Objectives (System-level and Project-level)	Recommended Plan Consistency
Goal 5: Provide Safe & Secure Transportation	a. Support transportation programs and design improvements which reduce crashes & improve safety of all modes	The plan includes major improvements, including specific safety improvements which will increase safety for all travel modes and reduce crashes, injuries and fatalities.
	b. Facilitate rapid movement of first responders & support incident management during emergencies	The proposed LRTP maintains or attempts to improve local and regional transportation system security in terms of emergency and incident response times by improving system efficiency, reducing VMT and congestion, and improving ITS.
Goal 6: Support Economic Vitality	a. Support new & existing commercial/ industrial development by ensuring multimodal access	The plan provides critically needed national highway system and freight network improvements for distribution and delivery of goods and commerce. The active transportation plan elements and transit will increase affordable transportation modes for low income and minority population and increase employment opportunities.
	b. Provide attractive & convenient transp. facilities that attract & retain businesses, youth, professionals, older adults	
	c. Facilitate the movement of goods and freight to commercial and industrial centers	
Goal 7: Protect the Environment & Preserve resources	a. Reduce fossil fuel consumption by minimizing travel time and providing access to alternative modes and fuels	The recommended plan reduced daily VMT and hours of delay over the future base network, resulting in reduced fuel usage.
	b. Maintain air quality attainment by minimizing air pollution related to vehicle emissions by reducing congestion and vehicle miles traveled	The transportation plan continues the ongoing street sweeping program to aid in attaining regional air quality conformity. Additionally, increased emphasis in shifting mode share to non-motorized and transit modes will continue to contribute to air quality improvements.
	c. Minimize sediment, nutrients, and litter entering surface water via roads and drainage	New curb and gutter will be added with committed and proposed roadway projects to reduce storm water impacts. New projects will mitigate potential stormwater impacts.
	d. Minimize impacts to the natural environment by taking opportunities to couple transportation projects with protection and enhancement of environmental resources	There are no recommended projects that are known to have a potential impact to natural or cultural resources. Projects that may impact environmental resources will mitigate impacts.

Activate Missoula 2045 Goals	Performance Objectives (System-level and Project-level)	Recommended Plan Consistency
Goal 8: Promote Community Health & Social Equity through the transportation system	a. Improve multi-modal access to parks and trails to support active and healthy lifestyles	The plan recommends increased investment in active transportation modes, including expansion of Mountain Line services, the creation of a neighborhood greenway network, and additional bicycle and pedestrian infrastructure - focusing on connectivity to in the urban core and to major destinations. Project ranking incorporated consideration of benefits to vulnerable populations and connections to public and social services, as well as parks and schools.
	b. Improve multi-modal access to schools, healthcare and social services	
	c. Reduce overall household transportation costs, particularly for under-served and/or vulnerable populations by providing safe and affordable transportation options	
	d. Reduce impacts on neighborhoods and cultural and historic resources through evaluation of assets and involvement of neighbors in the planning process with special attention to areas with typically under served and/or vulnerable populations	

Implementation

I. Delivering Our Transportation Future

Moving from the planning stage to the action and implementation stage is key to reaching the desired outcomes of the Activate Missoula 2045 plan. Success is contingent upon working with our partners cooperatively and continuously to make incremental improvements to all transportation modes, while continuing to maintain the system. This requires not only investment in infrastructure, but also investment in tracking and monitoring performance, implementing additional policies to further support the efficient use of resources (mode share, etc.), and actively exploring new funding opportunities.

Infrastructure

- Low-hanging fruit – continue to take advantage of opportunities as they arise. For example, exploring the implementation of bike facilities with maintenance projects as part of the City's Complete Streets policy.
- Multimodal corridors "complete streets" – focusing on transforming existing corridors that lack multimodal facilities into complete streets will ensure more equal access for all ages and abilities.
- Implement ITS – MDT and the City should work cooperatively to implement ITS in the form of advanced signal systems as soon as possible following MDT's completion of their statewide signal operations plan.
- Continue to make needed ADA improvements – ADA access improvements benefit all citizens, but particularly people with disabilities and helps to ensure access for all ages and abilities.

CHAPTER CONTENTS

I. Delivering Our Transportation Future
II. The Community's Role

- Assess the effectiveness of the City's sidewalk subsidy program to determine if the rate of sidewalk completion can be improved.

Performance Monitoring and Measurement

- Continue to implement improved non-motorized data collection techniques – continue to install permanent automatic trail counters and supplement with temporary counters, as well as volunteer counts.
- Improve pavement condition monitoring – pavement condition data collection at the local level is currently lacking. The City of Missoula and Missoula County should explore options to ensure pavement data is collected regularly and accurately and is consistent with MDT methodology.
- Utilize crash data to target safety improvements – recent improvements in crash data accessibility have allowed for added ability to analyze potential safety issues and prioritize safety improvements.

- Implement improved infrastructure tracking – currently there is no streamlined and consistent process for tracking and "digitizing" the completion of various transportation infrastructure, including the completion of sidewalks, signage, striping, parking, curb ramps, and other improvements. Proper tracking of infrastructure and its condition is imperative to measuring and monitoring performance, but more importantly for planning and budgeting for improvements.

Funding

- Actively pursue outside funding – continue to apply for grants, including annual TA grants from MDT, TIGER grants through US DOT, etc. Pursue additional opportunities for public-private-partnerships.
- Leverage existing funding sources – continue to utilize local funds to leverage state and federal funds, including city impact fees, MRA funds, etc.
- Pursue additional options to execute projects locally – oftentimes local agencies are able to streamline projects at lower administrative costs than state and federal agencies.
- Consider development of a bicycle facility and maintenance funding program, similar to the City Sidewalk Subsidy program, and/or a neighborhood traffic calming/active transportation funding program.
- Pursue additional opportunities to raise transportation funds locally – consider options to increase locally-derived revenue for local transportation projects (e.g. local option gas tax, local option sales tax, increased development impact fees, etc.), which appears to have modest support among Missoula-area voters (Figure 55 and Figure 56).

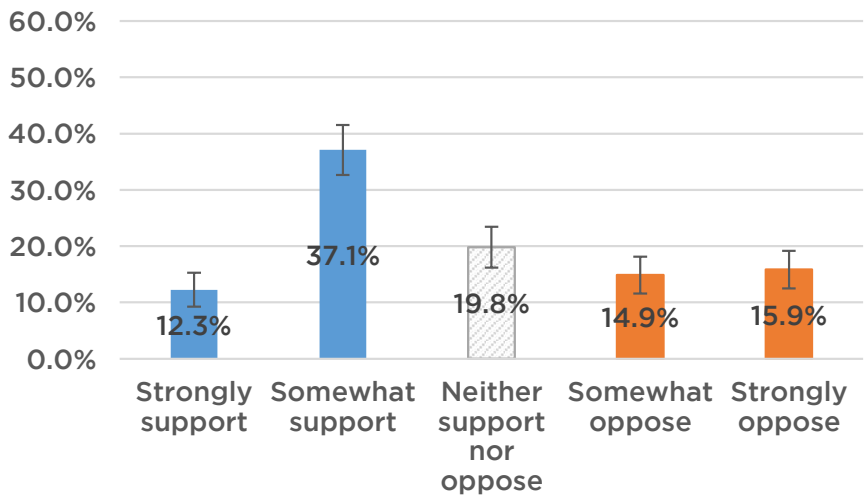


Figure 55. Registered voter support/opposition to paying new taxes or fees for transportation system improvements (2015 Missoula Area Transportation Survey)

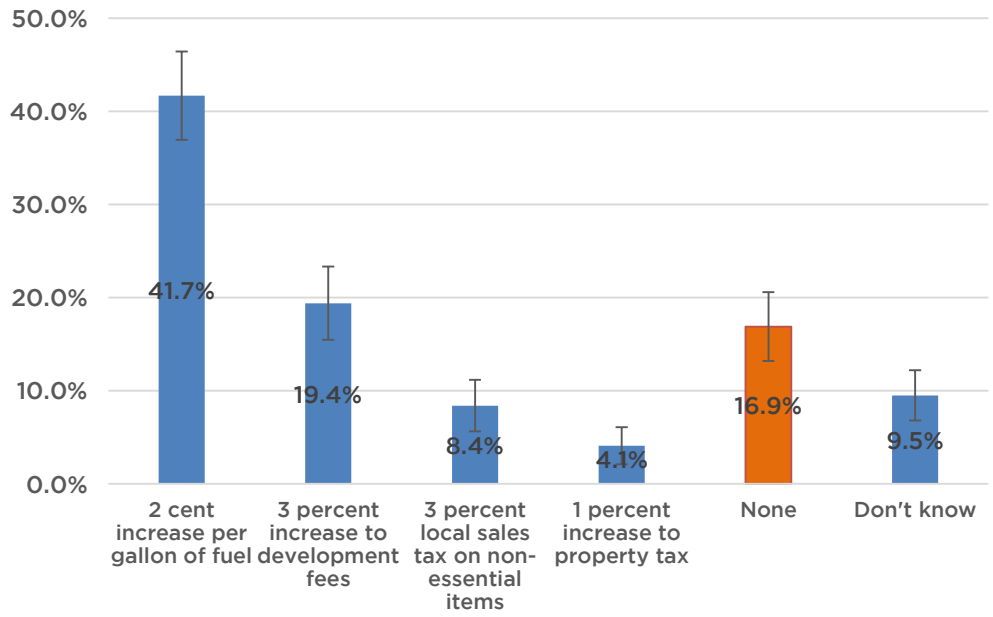


Figure 56. Registered voters preference for type of new tax or fee (2015 Missoula Area Transportation Survey)

Policy and Planning

- Future updates to the City and County Growth Policies and annexation, zoning, and subdivision regulations and policies should consider the adoption of the Activate Missoula 2045 "Ambitious" mode share goal and incorporate (or strengthen) policies and guidelines that support achievement of the goal.
- Vulnerable and under-represented populations - give special consideration to areas with concentrations of students, seniors, low-income families, or others that are more dependent on modes other than the automobile to provide a safe, accessible environment.
- Require multimodal transportation impact analysis of local development projects – as developments are proposed, it is necessary to assess the impact that they may create to the existing network and to identify necessary mitigation. Without comprehensive analysis of a development's potential impacts, future impacts become the responsibility of the local jurisdiction, which can take precious funds to mitigate.
- Create a standard multimodal transportation impact analysis methodology and requirements - it is imperative that all jurisdictions have clear and defined transportation impact study guidelines and requirements that assess the true impact of new development and appropriate mitigation to reduce impacts.
- Require needed multimodal infrastructure concurrent with development – allowing development to defer infrastructure improvements sometimes creates network deficiencies that are difficult to address following a project's development.
- Update and adopt a City Sidewalk Master Plan – consider updating the 2006 draft Sidewalk Master Plan (never adopted) and consider the needs of vulnerable population and under-represented demographics in the prioritization process.
- Consider development of a "Missoula Trails Master Plan" to complement the Missoula Bicycle Facilities Master Plan and an updated Sidewalk Master Plan. A critical component of this plan will be developing a plan for pavement preservation and trail lighting maintenance.

- Level of Service – work with MDT to consider emphasizing multi-modal Level of Service rather than focusing exclusively on vehicular LOS standards for development and transportation planning, particularly in urban corridors. Shifting to multi-modal LOS will also help to address anticipated congestion-related performance measures that will require reviewing the number of people moving through a corridor rather than the number of vehicles.
- Strengthen education and encouragement related to Transportation Options – provide additional resources and/or funding to help bolster existing education and encouragement of non-SOV infrastructure, safety, programs and projects.

II. The Community's Role

As described throughout the document, Activate Missoula 2045 is meant to serve the community, and the community played a role in shaping the plan itself. It is intended to represent and fulfil the role of transportation in the community's overall goals and objectives with respect to supporting the movement of people of all ages and abilities, supporting economic growth and vitality, protecting the natural resources of the Missoula valley, and providing a high quality of life to all citizens.

While all transportation agencies and partners, as well as local jurisdictions, have a role in implementing the vision of Activate Missoula 2045, it is also clear that the community can help achieve this – whether that be through engagement in public planning processes and policy development, providing feedback to the MPO and its partners, or by changing individual travel behaviors – everyone has a real interest in helping to reach Missoula's community goals.