missoula connect

2050 Long-Range Transportation Plan Update

Appendix

July 2025

Missoula County - City of Missoula
MPO
METROPOLITAN PLANNING ORGANIZATION

Contents

Appendix A

Public Engagement Summary

APPENDIX A– PUBLIC ENGAGEMENT SUMMARY

MUTD engaged in continuous outreach with the community throughout this project to ensure the Transit Strategic Plan reflects the region's priorities and is supported by the community. MUTD worked with the MPO to conduct outreach jointly as part of the MPO's LRTP, gathering input from Missoula area residents, employees, students, and visitors for inclusion in both the Transit Strategic Plan and the LRTP. There were three main phases of community outreach:

- **Phase I: Listen and Learn** about the community's challenges, hopes, and dreams for transit (April to July 2024)
- **Phase II: Create and Apply** potential transit concepts and garner feedback (August to September 2024)
- **Phase III: Integrate and Refine** the plan based on Phase II feedback and present how it was incorporated into the plan (December 2024)

Stakeholders

The MPO and MUTD worked together to gather input from key stakeholders for inclusion in both the Transit Strategic Plan and the LRTP. Stakeholders are comprised of two groups: Advisory Groups and Community Partners, as seen in Figure A-1. Advisory Groups are dedicated committees from different community organizations established by MUTD and MPO. Community Partners are individual community organizations.

Figure A-1 Advisory Groups and Community Partners

Stakeholder	Name
Advisory Group	▪ **Specialized Transportation Advisory Committee** (STAC): composed of disability advocates and overseen by MUTD ▪ **Community Partner Advisory Group** (CPAG): representatives from Summit Independent Living, Missoula Economic Partnership, Missoula Housing Authority, and Partnership Health Center ▪ **Transportation Policy Coordinating Committee** (TPCC): develops transportation planning as a part of the comprehensive regional planning for the Missoula urban area ▪ **Transportation Technical Advisory Committee** (TTAC): provides technical advice to the TPCC and to the inter-agency staff of the Missoula Urban Transportation Planning Process
Community Partner	▪ Diversity Advisory Council of University of Montana ▪ Midtown Implementation Committee ▪ Community Forum - Missoula Neighborhood Councils ▪ Missoula Infrastructure Coalition ▪ Missoula County Justice Equity Diversity Inclusion (JEDI) Advisory Board ▪ Bonner Milltown Community Council ▪ Lewis & Clark Community Council ▪ Miller Creek Community Council ▪ Rose Park Community Council ▪ Northside/Westside Community Council ▪ Captain John Mullan Community Council ▪ River Road Community Council ▪ Missoula Downtown Association ▪ Missoula Tenants Union ▪ Missoula County Public Schools ▪ Hellgate Elementary School District ▪ Missoula Office of Neighborhoods ▪ Families in Transition (FIT) and Foster ▪ Willard High School ▪ Big Sky High School ▪ Johnson Street Shelter ▪ Food Not Bombs Service ▪ Missoula Food Bank ▪ Young People / Refugee Community Conversations ▪ Missoula Aging Services Advisory Council

Phase I Outreach

Phase I outreach spanned from April to June 2024 with a focus on listening to the community's transportation concerns and hopes for the future. This phase aimed to create awareness of the Transit Strategic Plan and LRTP planning efforts as well as gather information on transportation needs/challenges and desired improvements. A variety of engagement activities were performed in Phase I, including:

Engage Page

MUTD and the MPO established two project webpages to serve as central information hubs, one for the Transit Strategic Plan, and one for the LRTP. The Engage page content provided background information, project purpose and goals, contact information, and a comment form for interested residents to engage in the planning process. The Engage pages were a central hub for project information and engagement opportunities like the public open house and survey links.

https://www.engagemissoula.com/mountain-line-strategic-plan
https://www.engagemissoula.com/long-range-transportation-plan

Tabling Events

The planning team set up informational tables at high-traffic community spaces. Participants were provided the opportunity to share ideas they would like to see considered, as well as engage with project staff.

- May 6, 2024 – University of Montana, University Center
- July 9, 2024 – Missoula Farmers Market

Advisory Group and Community Partnership Meetings

MUTD and the MPO conducted discussion group meetings with organizations like the Diversity Advisory Council and the Midtown Implementation Committee. The project team conducted five advisory group meetings and six community partnership meetings.

Advisory Group meetings are listed below:

- April 22, 2024 Diversity Advisory Council of University of Montana
- June 24, 2024 Midtown Implementation Committee
- June 27, 2024 Community Forum - Missoula Neighborhood Councils
- July 10 2024 Missoula Infrastructure Coalition
- July 18, 2024 Missoula City Justice Equity Diversity Inclusion Advisory Board

- July 26, 2024 Specialized Transportation Advisory Committee

Community Partnership meetings are listed below:

- June 14, 2024 Business / Economic
- June 17, 2024 Climate / Health / Active Transportation
- June 17, 2024 Community Development
- June 18, 2024 Housing and Food
- June 20, 2024 Children, Families, and Young People
- July 26, 2024 Specialized Transportation

The feedback gathered from Phase I was used in the development of potential transit improvements which were presented to the public in Phase II.

Key Takeaways from Phase I Outreach

During the Community Partnership meetings, conversations were separated into six themes:

Business & Economic

- **Community groups stated the need for** the Transit Strategic Plan and LRTP to serve existing and new workforce hubs, continue dialogue on parking, and address public and business misperceptions about sustainable transportation and cars
- **Community partners offered to** have their organizations remain engaged in the planning process.

Climate, Health, Active Transportation

- **Community groups stated the need for** safe, healthy, nature-centric, and connected streets.
- **Community partners offered to** provide technical expertise at community education and engagement efforts

Community Development

- **Community groups stated the need for** safe, equitable, nature-centric, and accessible streets and neighborhoods, increased MUTD services, and community education.
- **Community partners offered to** help with community education and outreach with opportunities ranging from videos to personal outreach and meetings.

Food, Housing, and Health

- **Community groups stated the need to** remove barriers to transit, increase access through frequency and routes, and take safety considerations.

- **Community partners offered to** incorporate engagement into their work, desire more in-person training and events about bus services.

Children, Families, and Young People

- **Community groups stated the need to** help families safely connect to schools, child-care, and other community resources. Partners shared hopes for increased bus frequency, more direct transit routes, language accessibility, and coordination on bus literacy programs.
- **Community partners offered to** support planning efforts by sending out the survey and including clients in planning.

Specialized Transportation

- **Community groups stated the need to** improve access to bus stops, microtransit, micromobility, winter travel, and services to low access areas.
- **Community partners offered** robust advisory input in addition to direct input from individuals who are aging and individuals who have disabilities.

Phase II Outreach

Phase II outreach was conducted from July to September 2024, and focused on soliciting feedback from the community on the proposed network changes for the Transit Strategic Plan and the list of potential projects for the LRTP. Outreach activities in this phase included:

Advisory Group Meetings

MUTD and the MPO provided two advisory groups with an update on the planning process, sought input, and provided opportunities for community engagement in Phase II.

- August 23, 2024 Specialized Transportation Advisory Committee
- September 4, 2024 Community Partner Advisory Group

General and Neighborhood Community Partnership Meetings

MUTD and MPO staff attended seven general and neighborhood meetings, such as the Bonner Milltown Community Council and River Road Neighborhood Council General Meetings. Meeting dates are listed below:

- September 8, 2024 Lewis & Clark General Meeting
- September 9, 2024 Bonner Milltown Community Council
- September 10, 2024 Miller Creek General Meeting

- September 15, 2024 Rose Park General Meeting
- September 18, 2024 Northside/Westside General Meeting
- September 19, 2024 Captain John Mullan neighborhood meeting
- September 24, 2024 River Road's General Meeting

Virtual Stakeholder Community Partnership Meeting

A virtual stakeholder workshop was held on August 15, 2024 with community organizations to talk about and discuss potential transportation improvements. Invitations to attend were sent out to over 130 organization and group contacts, including those who participated in Phase I. Organizations were asked during the meeting to support continued outreach with community members by sharing the online survey and public event information, and coordinating directly with the team about tabling events or dialogue opportunities. Dozens of networks and organizations ranging from the Missoula Downtown Association, Missoula Tenants Union, Missoula County Public Schools, Hellgate Elementary School District and Missoula Office of Neighborhoods shared the survey through their online listservs and/or at community events.

One-on-One Community Partnership Meetings

MUTD and the MPO conducted one-on-one meetings with eleven community groups. Meeting dates are listed below:

- August 6 - 13, 2024 School-based Conversations - 1 on 1 dialogue
  - Families in Transition (FIT) and Foster
  - Hellgate Elementary School District
  - Missoula County Public Schools
  - Willard High School
  - Big Sky High School
- September 8, 2024 Johnson Street Shelter, Food Not Bombs Service
- September 10, 2024 Missoula Food Bank
- September 24, 2024 Young People / Refugee Community Conversations
  - Small group dialogue coordinated with Soft Landing support
- October 10, 2024 Missoula Aging Services Advisory Council

Survey

An online public survey for both the Transit Strategic Plan and LRTP efforts was administered throughout Phase II outreach. This allowed the community to provide feedback on the proposed recommendations and potential projects for both plans. Altogether, 640 people participated. Survey results are included in Appendix B.

Tabling Events

The planning team set up informational tables at high-traffic community spaces. Participants were provided the opportunity to review the proposed project list and do a dot voting exercise for the LRTP. Individuals also had the opportunity to take a survey for both the Transit Strategic Plan and LRTP efforts. Staff were on hand to answer any questions.

- August 20, 2024 Pro Housing in the Parks Event
- August 21, 2024 Upper Rattlesnake Ice Cream Social and General Meeting
- August 22, 2024 Southgate Mall, Back to School Shopping
- August 26, 2024 Hellgate School District Open House
- August 28, 2024 Missoula College River Campus, Welcome Week
- September 4, 2024 Franklin to the Fort Block Party
- September 6, 2024 Missoula Library
- September 6, 2024 Missoula Outdoor Cinema - Bring Them Home Film
- September 6, 2024 Roots Fest First Friday Parklet
- September 7, 2024 Family Roots Fest
- September 8, 2024 Johnson Street Shelter, Food Not Bombs Service
- September 10, 2024 Missoula Food Bank
- September 10, 2024 Downtown Transfer Center
- September 11, 2024 Downtown Transfer Center
- September 13, 2024 Free Cycles Show
- September 15, 2024 Sunday Streets

Public Open House

MUTD and the MPO hosted an in-person public open house on September 11, 2024, which was attended by 48 members of the public. Attendees had the opportunity to visit multiple stations that covered specific topics for both the Transit Strategic Plan and LRTP. Each station was manned by staff facilitators to guide discussions. In addition, participants were encouraged

to provide input through comment cards, survey participation, interactive dot-voting boards, and one-on-one conversations with planners.

Key Takeaways from Phase II Outreach

The feedback from the survey provided quantitative data that helped to inform both the Transit Strategic Plan and LRTP.

For the LRTP:

- Approximately 68% of respondents strongly support or somewhat support more taxes or fees if they were spent only on transportation improvements.
- The top three type of projects respondents wanted to see with new transportation funding were for improved bicycle facilities (27% of respondents), improved maintenance of existing streets (21%), and improved public transit (18%).
- The top four programs and policies that were identified as being most important were passenger rail to other regions (47% of respondents), neighborhood greenways (40%), snow removal/street sweeping (39%), and traffic calming/vehicle speed management (39%).
- Respondents also provided input on the top intersection and corridor projects they would like to see funded. The results from this survey was used to refine and finalize the project list for the LRTP. More detailed results from the survey are included in Appendix C.

For transit:

- There was strong support for targeted frequency improvements on:
  - Route 3 in Northside
  - Route 4 to East Missoula
  - Routes 1 and 2 on weekends
- Route 15 to Sx̌tpqyen was repeatedly pointed out as a great new service.
- On-Demand service was met with a lukewarm response:
  - People were uneasy about having to use a new type of service
  - People worried about increased travel times, since it was meant to replace Routes 9 and 12.
- Route 12 South Hills riders were not supportive of the replacement of the route by on-demand service or Route 7.

Feedback received from this survey was used to refine the transit recommendations and develop a final transit network. More detailed results from the survey are included in Appendix C.

Phase II Public Engagement Survey Results

To collect feedback from the community to inform strategy development and project prioritization of MUTD's Transit Strategic Plan and the MPO's LRTP, a public survey was administered during Phase II outreach. In total, 640 responses were received for the survey, which was hosted online and made available with paper copies. The survey was promoted through the following methods:

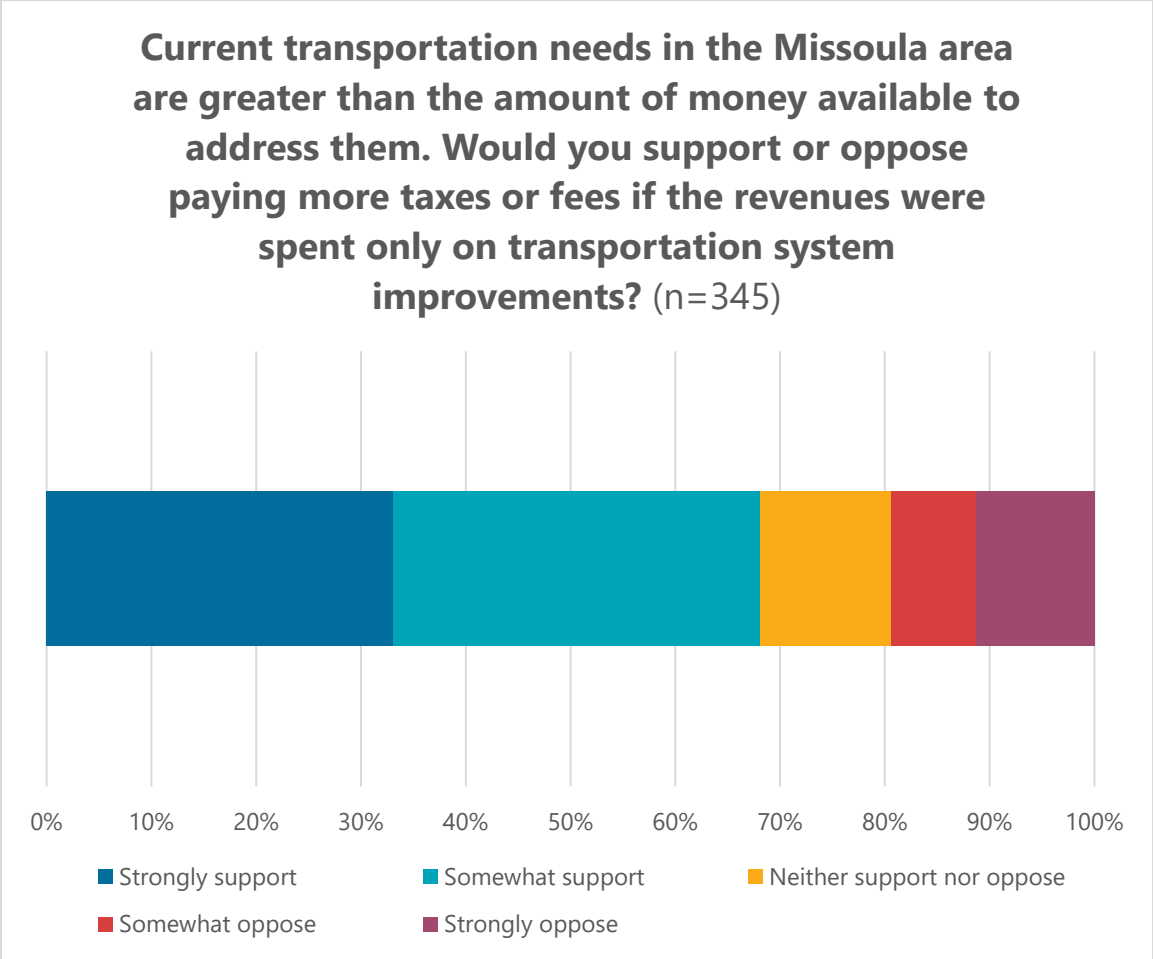
- Email listserv distribution
- Mountain Line and MPO project websites
- Project postcards with QR codes
- Project flyers in the community
- Open house and community tabling events
- Social media posts

The following sections describe the key findings.

Transportation Funding Priorities

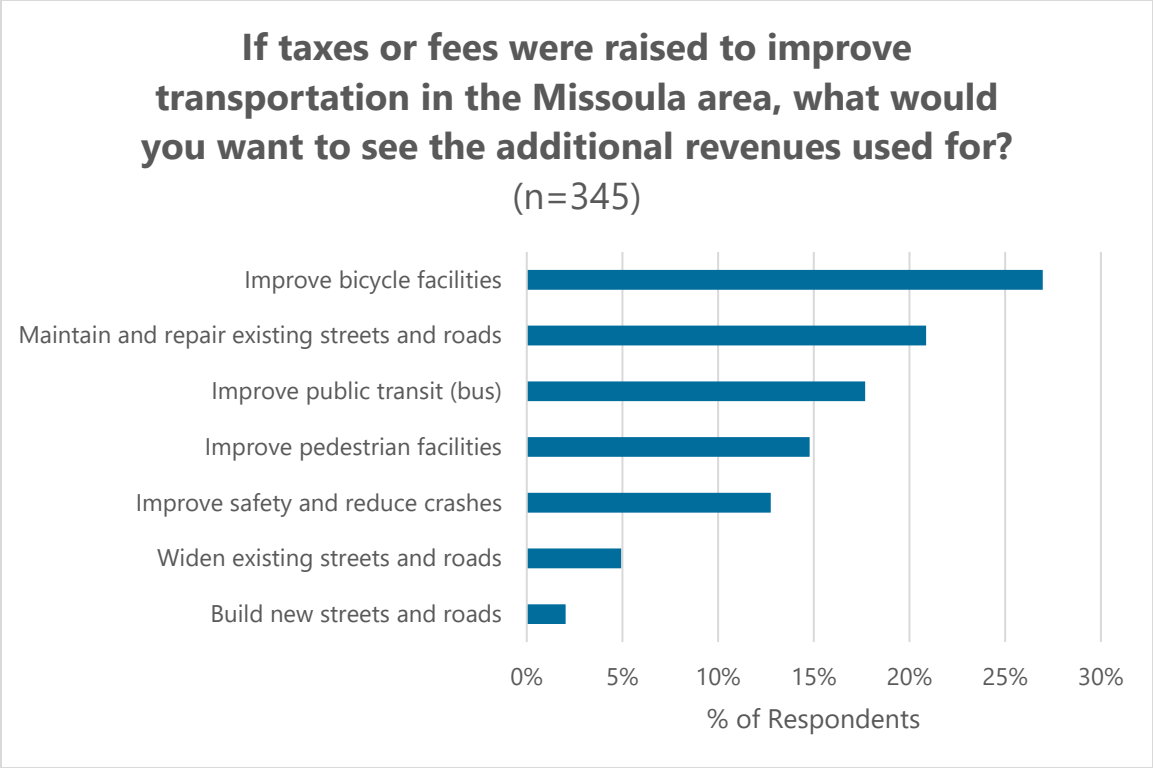
The survey asked respondents whether they would support or oppose paying more taxes or fees to support transportation projects. As seen in Figure A-2, about **two-thirds of respondents strongly or somewhat supported additional taxes or fees**, while only 10% of respondents strongly opposed.

Figure A-2 Preference for Increased Transportation Funding



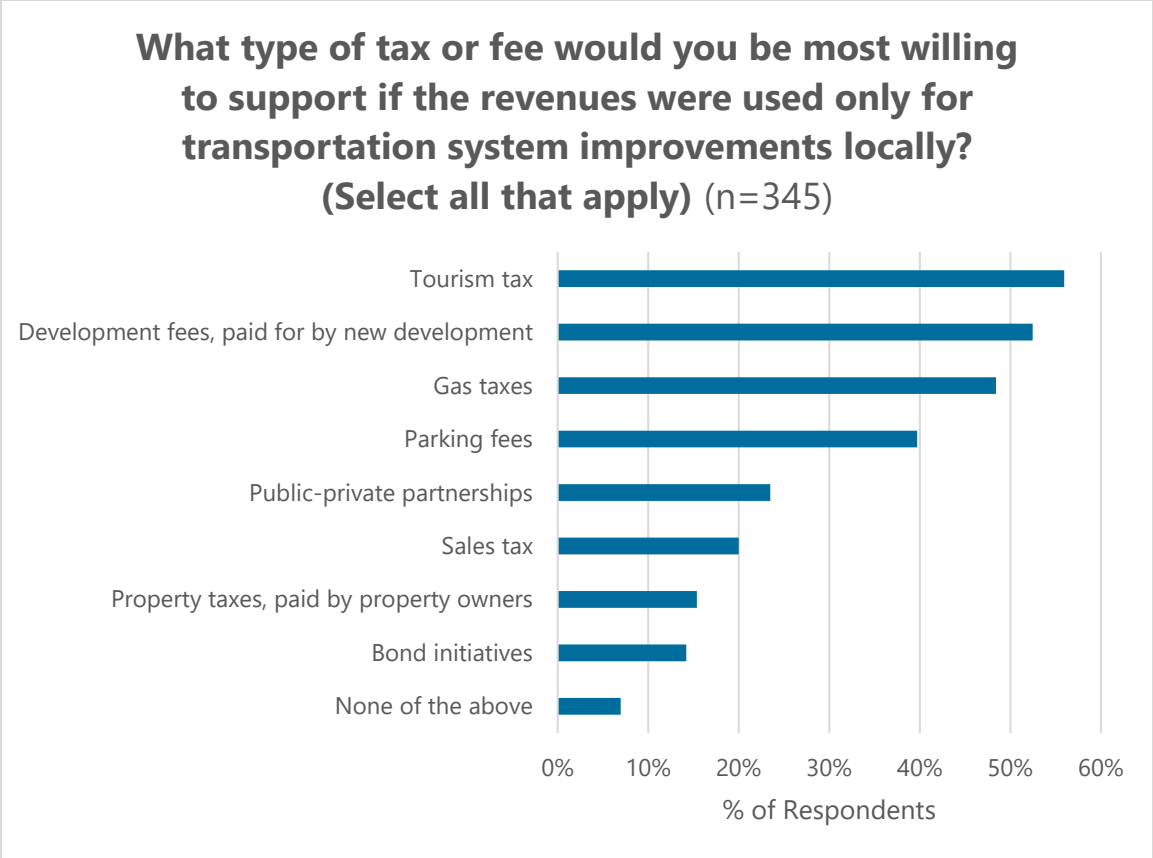
The survey then asked respondents for the type of projects they would want new transportation funding to support. As seen in Figure A-3, respondents expressed desire for **improved bicycle facilities (27%), well-maintained streets (21%), and improved public transit (18%)**.

Figure A-3 Preference for Transportation Goals



The survey asked respondents for their preferred method of generating revenue for transportation funding. As seen in Figure A-4, over half of respondents wanted supported either a **tourism tax or development fees paid for by new development.** Slightly less than half of respondents supported an increase in **gas taxes**.

Figure A-4 Preference for Transportation Funding Source



Transportation Project Priorities

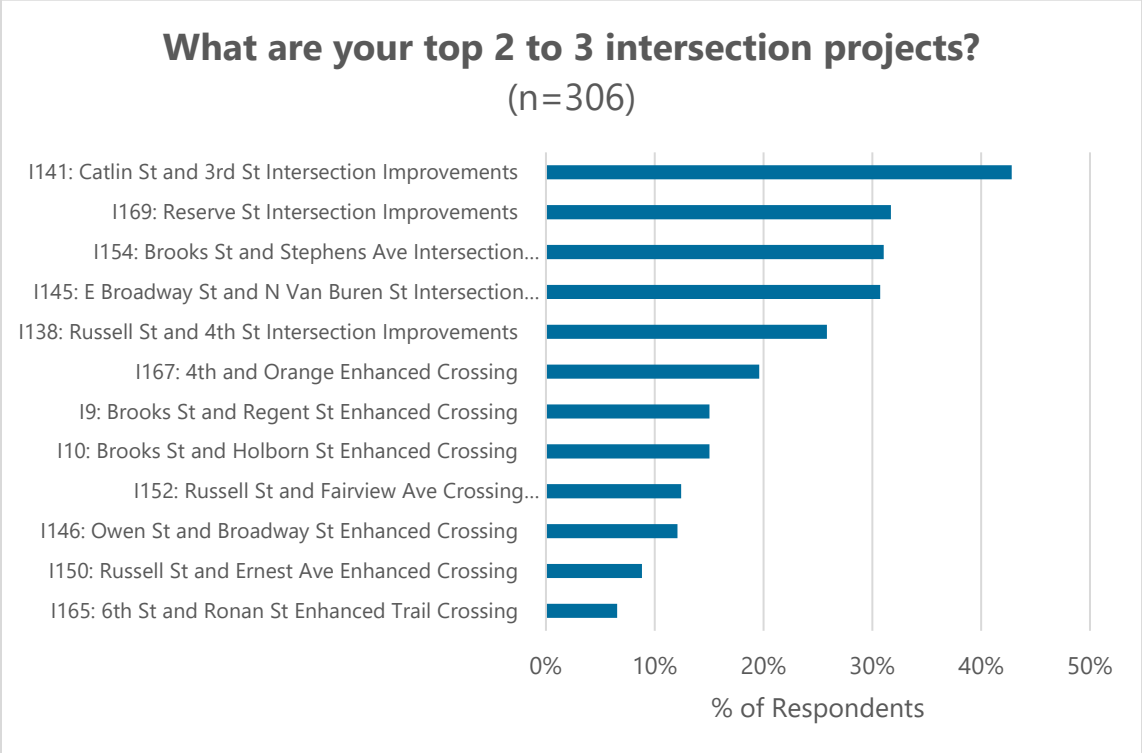
The survey asked respondents to choose their top two or three intersection projects out of twelve total high priority projects. Project types included:

- **Active transportation**, which include things like bike lane extensions, greenway development, trail connectivity, and pedestrian network enhancements
- **Safety projects**, which include things like intersection crossing enhancements and pedestrian safety measures.

Figure A-5 illustrates the results. The top three results are as follows:

- The most highly rated project (43% of respondents) was **I141: Catlin Street and 3rd Street Intersection Improvements**. The project would install a pedestrian and bicycle crossing to connect to trails.
- The second most highly rated project (32%) was **I169: Reserve St Intersection Improvements**. The project would install crossing safety countermeasures.
- The third most highly rated project (31%) was **I154: Brooks St and Stephens Ave Intersection Improvements.** The project would install crossing safety countermeasures.

Figure A-5 Preference for Intersection Projects



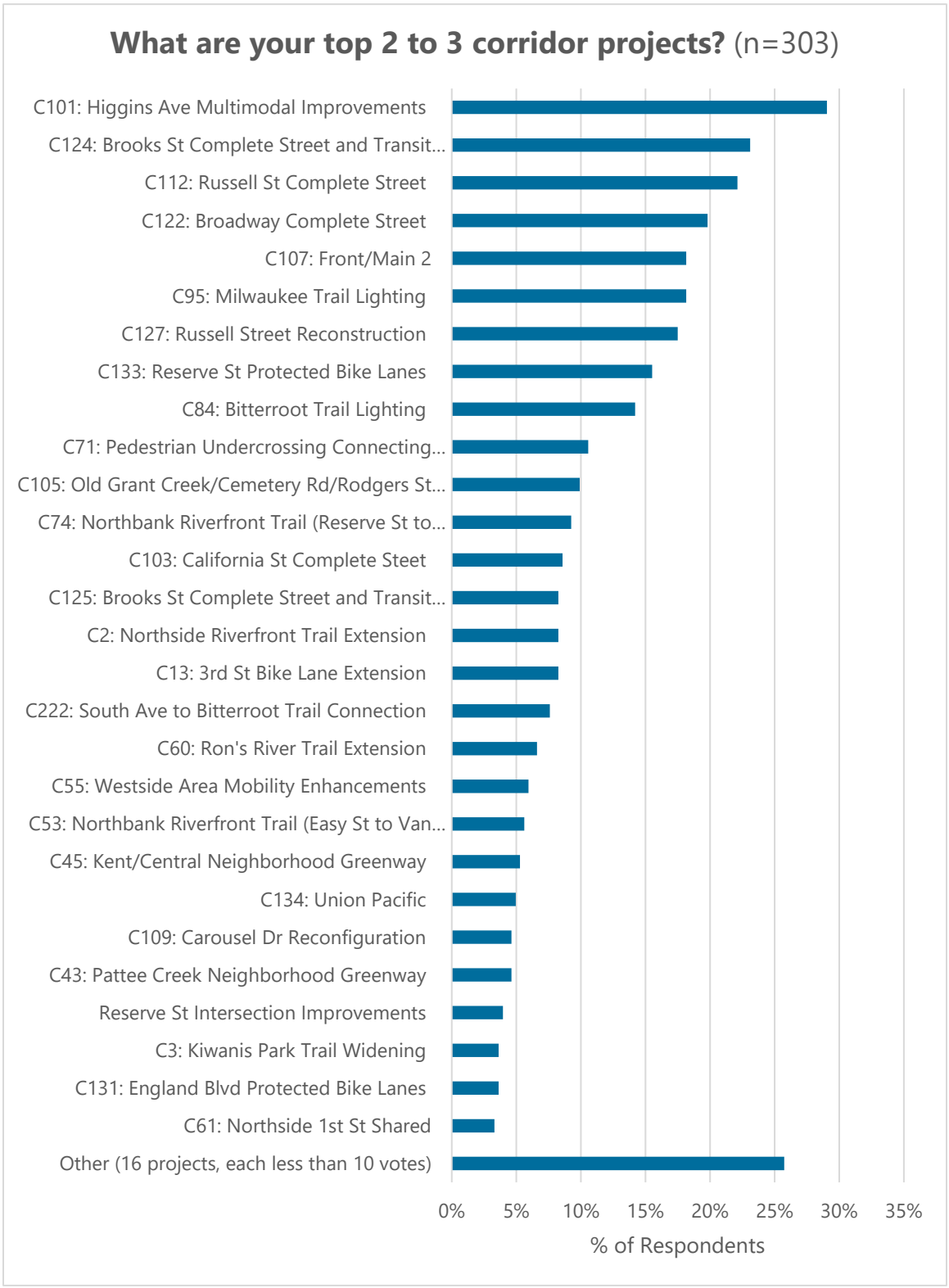
The survey then asked respondents to choose their top two or three corridor projects out of 45 total high priority projects. Project types included:

- **Active Transportation** projects include things like bike lane extensions, greenway development, trail connectivity, and pedestrian network enhancements.
- **Complete Streets** projects include things like transit integration, multimodal improvements, and on-street facility reconfiguration.
- **Roadway/Bridge** projects include things that create, reconfigure, or maintain roads or bridges.
- **Safety** projects include things like intersection crossing enhancements and pedestrian safety measures.

Figure A-6 illustrates the results. The top three results, all **Complete Streets** projects, are as follows:

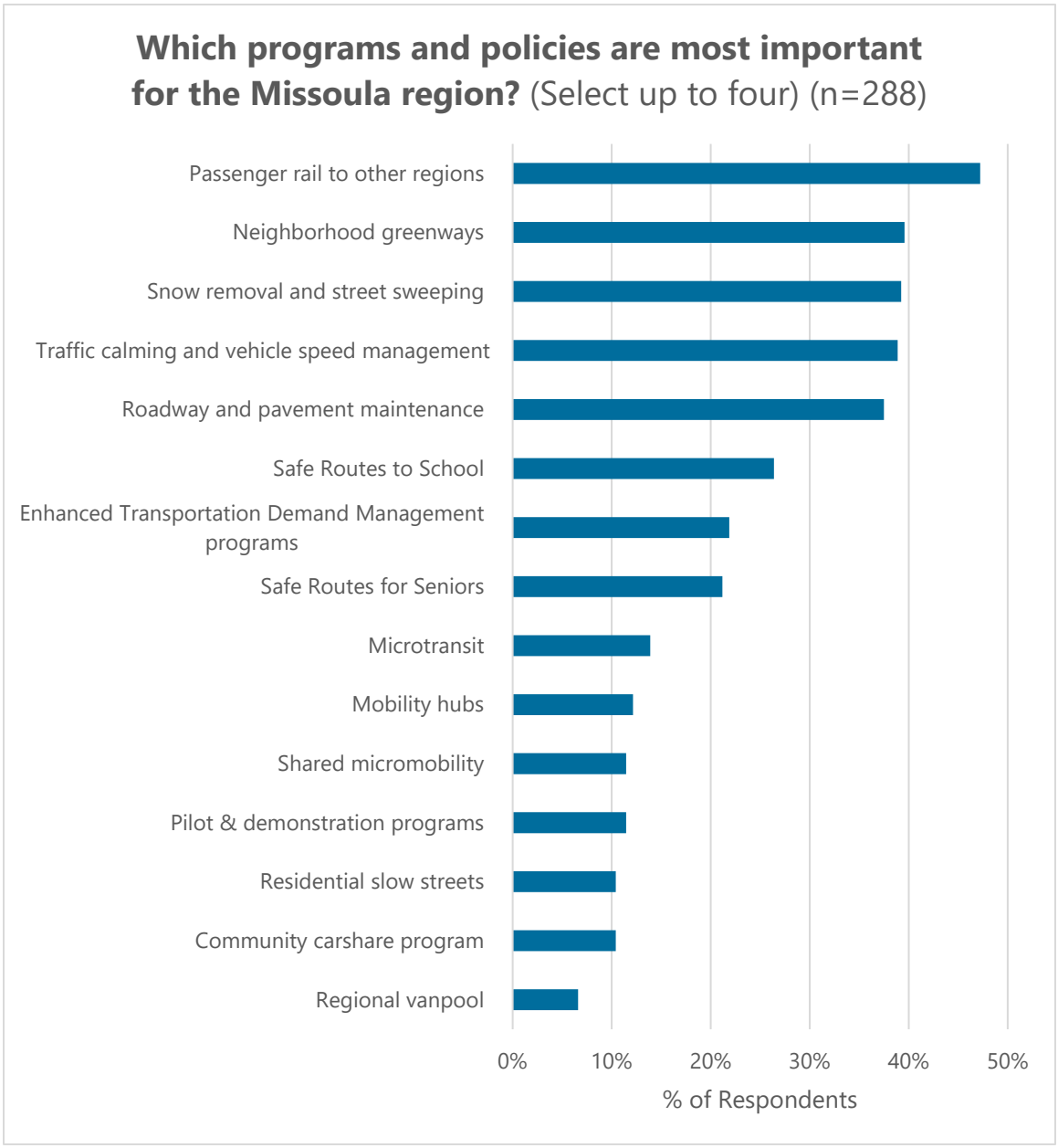
- The most highly rated project (29% of respondents) was **C101: Higgins Avenue Multimodal Improvements**. The project would install a pedestrian and bicycle crossing to connect to trails. It would create a complete street with bicycle, pedestrian, and streetscape improvements
- The second most highly rated project (23%) was **C124: Brooks St Complete Street and Transit Improvements**. It would create a complete street with bicycle, pedestrian, and streetscape improvements
- The third most highly rated project (22%) was **C112: Russell St Complete Street.** It would create a complete street with bicycle, pedestrian, and streetscape improvements

Figure A-6 Preference for Corridor Projects



Finally, the survey asked respondents which transportation programs or projects are most important for Missoula. As seen in Figure A-7, riders were most excited about **passenger rail to other regions** (47%). Rounding out the top five is neighborhood greenways (40%), snow removal and street sweeping (39%), traffic calming and vehicle speed management (39%), and roadway and pavement maintenance (38%).

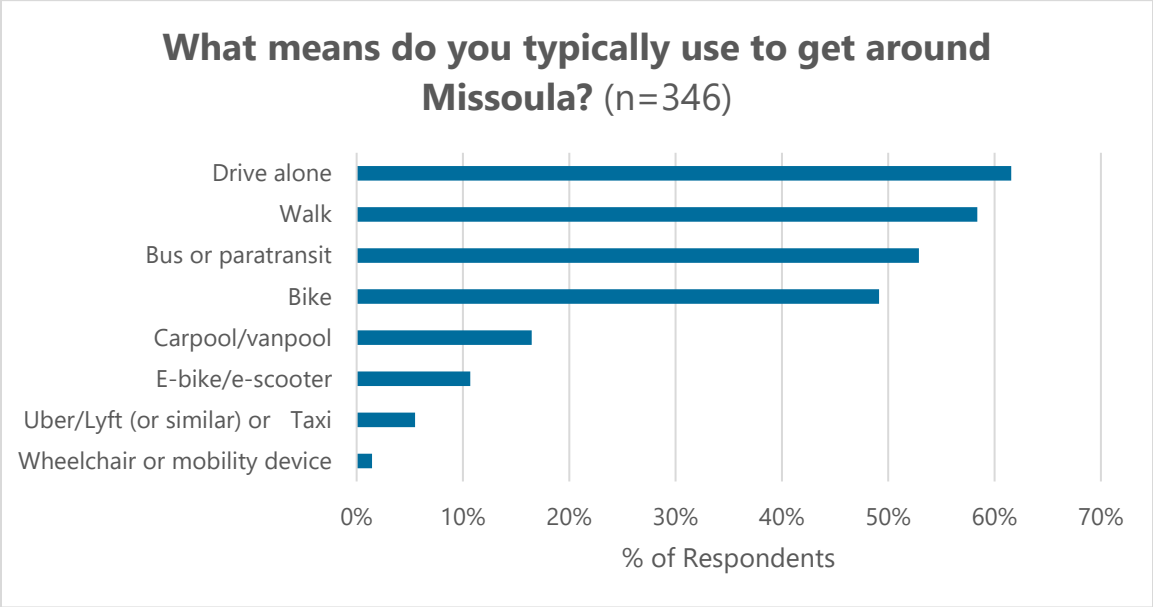
Figure A-7 Preference for Transportation Project Type



Respondent Characteristics and Demographics

Respondents use various modes of mobility. As seen in Figure A-8, about 62% of survey participants responded that they drive around Missoula. Walking (58%), bus/paratransit (53%), and bike (49%) round out the top four.

Figure A-8 Respondent Mode of Transportation



As seen in Figure A-9, two-thirds of respondents were between the ages of 18 and 49, while less than 15% of respondents were above the age of 65.

Figure A-9 Respondent Age

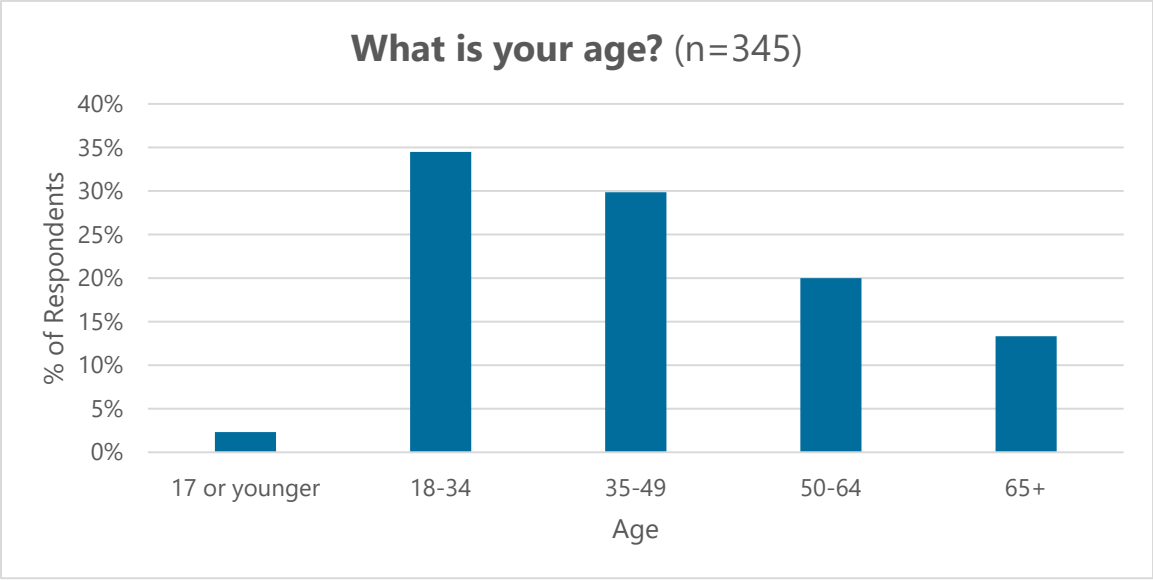


Figure A-10 shows that of all the participants that provided employment status, most (73%) were employed.

Figure A-10 Respondent Employment Status

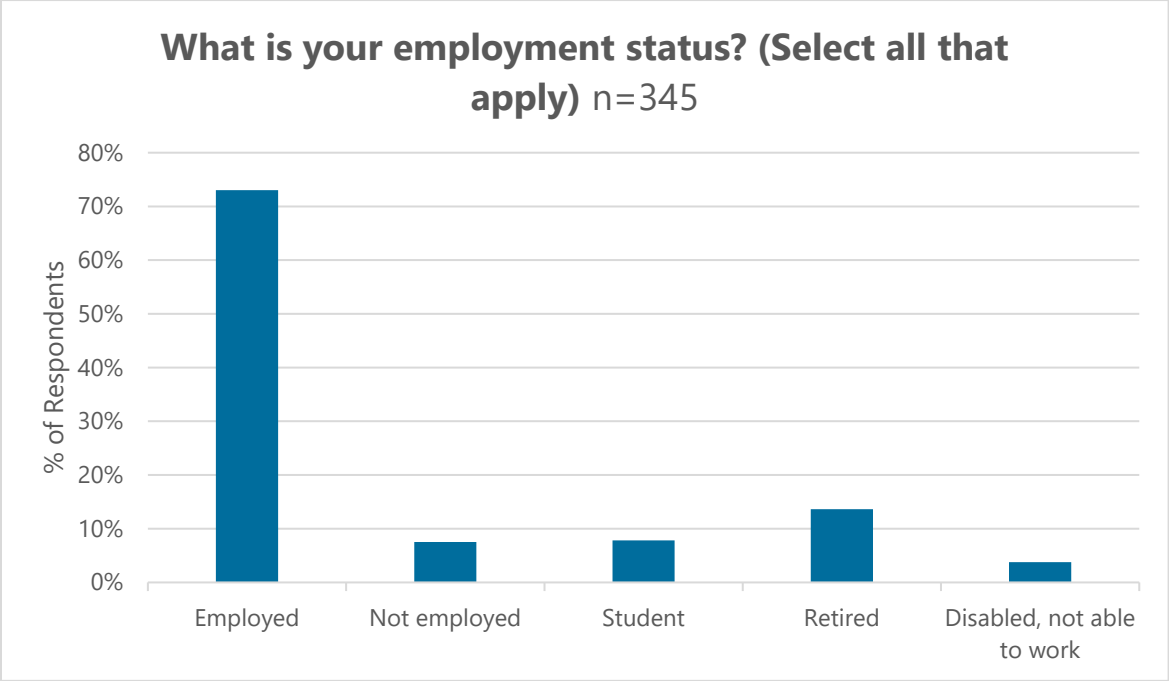
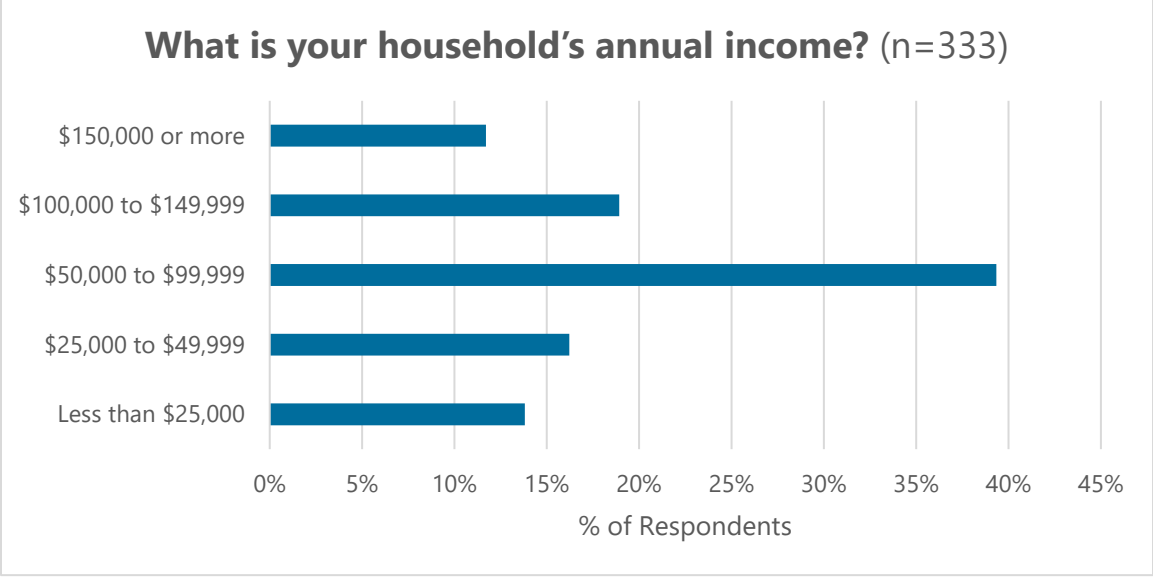


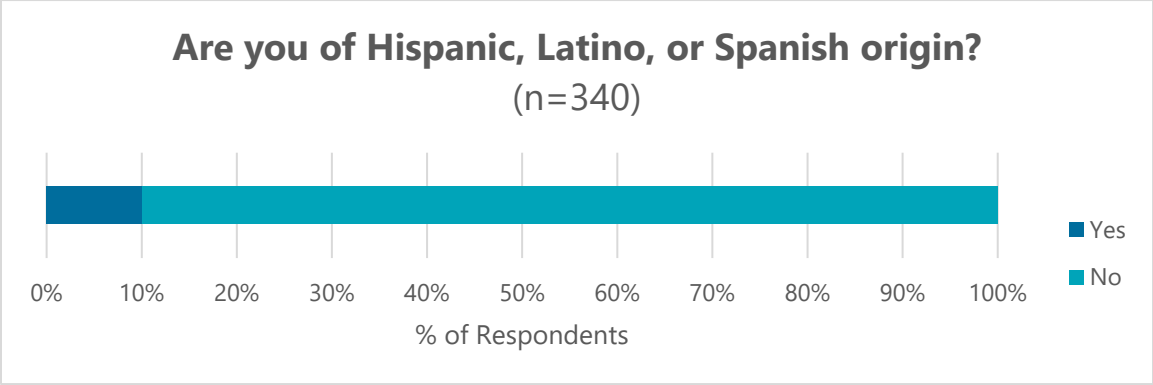
Figure A-11 shows that over half of the participants had a household annual income between $25,000 and $99,999. Less than 15% of participants had a household annual income below $25,000.

Figure A-11 Respondent Household Annual Income



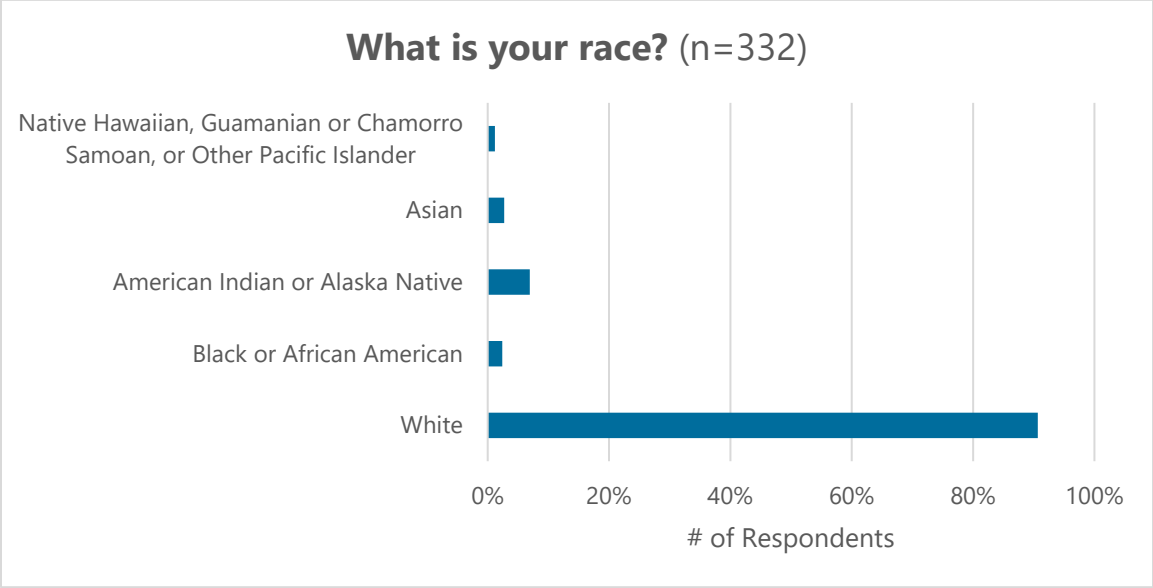
As seen in Figure A-12, in terms of Hispanic, Latino, or Spanish origin, one in ten participants responded yes.

Figure A-12 Respondent Hispanic, Latino, or Spanish Origin



As seen in Figure A-13, in terms of race, most (91%) respondents identified as White.

Figure A-13 Respondent Race



Phase III Outreach

Phase III outreach was conducted in December 2024, and focused on summarizing the feedback gathered from the community during Phase II and presenting the updated plans for the Transit Strategic Plan and LRTP. Two major activities were performed in Phase III, including:

Advisory Group Meeting

MUTD and the MPO conducted a virtual stakeholder workshop on November 22, 2024, with community organizations to preview the presentation content to be presented at the virtual public meeting. The planning team also sought to incorporate input from partners on ease of understanding and communicating the final plans/presentation.

Virtual Public Meeting

A virtual public meeting was held on December 12, 2024 to share the feedback gathered from the community during Phase II. For the Transit Strategic Plan, the final near- and long-term transit recommendations were presented. For the LRTP, an updated project list was presented, along with programs and policies that could be implemented in the near-, medium-, and long-term. A video of the presentation was uploaded to the Engage page for individuals who could not attend the meeting.

Interagency Coordination for Long-Range Transportation Planning Meeting

Land Use, Environment, and Historic Preservation Coordination

Date: December 18, 2024

Attendance:

- City of Missoula/Missoula MPO
    - Ben Weiss
    - Aaron Wilson
    - Glenn Ingram
- Montana Department of Transportation:
    - Vicki Crnich
    - Geoff Streeter
- Federal Agencies:
    - Christopher Downs (U.S. Fish and Wildlife Service)
    - Sage Joyce (U.S. Army Corps of Engineers)
    - David Liccione (U.S. Army Corps of Engineers)
- BNSF Railway:

    - Mary Ann Monaldi
    - Michael Pruneau
- Confederated Salish & Kootenai Tribes:
    - Scott Johnston
- Nelson\Nygaard:
    - Alexandra Weber
    - Zachary Zabel
- Missoula Airport:
    - Brian Ellestad

A separate meeting was held on December 27th with the Missoula Police Department:

- Traffic Lieutenant Patrick Erbacher
- Sergeant Tyler Swartz

While unable to attend the virtual meeting, an invitation, along with information about the LRTP and a link to the project website, was shared with the following organizations:

- Missoula County Office of Emergency Management
- City of Missoula Fire Department
- Advisory Council on Historic Preservation
- National Park Service
- U.S. Bureau of Reclamation
- U.S. Forest Service
- Montana Historical Society
- Montana Department of Environmental Quality
- Montana State University Library GIS
- Montana Fish, Wildlife & Parks
- Fort Belknap Indian Community

MPO Committee Membership

Transportation Policy Coordinating Committee (TPCC)

Voting members:

- Mirtha Becerra, City Council (chair)
- Don MacArthur, MUTD
- Josh Slotnick, Missoula Co. Commissioner
- Dave Strohmaier, Missoula Co. Commissioner (Vice-chair)
- Bob Vosen, MDT-Missoula
- Tung Pham, Planning Board
- and Andrea Davis, Mayor

Non-voting members:

- Debbie Johnston, MCCHD
- and Lucia Olivera, FHWA

Transportation Technical Advisory Committee (TTAC)

Voting members:

- Karen Hughes (Missoula County)
- Lyn Hellegaard, Chair (MRTMA)
- Shane Stack (Msla Co PW)
- Kerri Mueller (Env. Health MCCHD)
- Ellen Buchanan (MRA)
- Eran Pehan (City Development Services)
- Randy Arnold (Msla Co Parks & Trails)
- Donna Gaukler (City Parks & Rec)
- Jordan Hess (MUTD)
- Joel Boucher Vice-Chair (MDT)
- Jeremy Keene (Public Works Director)

- Mitch Buthod (MDT)
- Ben Weiss (City Bike/Ped)
- and Andrew Hagemeier (Missoula County)

Non-voting members:

- Brian Ellestad (Msla Airport Auth)
- Vickie Rectenwald (ASUM-Trans.)
- Eva Rocke (UM Admin)
- Katie Potts (FHWA)

Appendix B

Project Lists

Transit and Programs									
Project ID	**Project type**	**Project Phase**	**Project Name**	**Funding Source 1**	**Dollar Amount**	**Funding Source 2**	**Dollar Amount**	**Description**	**Base Plan Cost Estimate 2025**
–	Program	Committed	Transportation Options	CMAQ	$ 9,656,926.00				$ 9,656,926.00
–	Maintenance	Committed	Sweepers & Flush Trucks	CMAQ	$ 14,977,604.00			Purchase of street sweepers and flush trucks for City and County street maintenace to reduce particulate pollution	$ 14,977,604.00
–	Transit Operations	Committed	Transit Operations - Federal	FTA (5307, 5311), TRANSADE	$ 128,752,717.00	CMAQ	$ 10,153,080.24	General transit operating service costs. Includes fixed route, paratransit, microtransit, vanpool, and other applicable programs	$ 138,905,797.24
–	Transit Operations	Committed	Transit Operations - Local	MUTD	$ 393,776,630.00			General transit operating service costs. Includes fixed route, paratransit, microtransit, vanpool, and other applicable programs	$ 393,776,630.00
–	Transit Capital	Committed	Transit Capital - Federal	FTA (5339, 5310, 5311)	$ 38,512,312.00	CMAQ	$ 1,433,403.76	Purchases of buses and other vehicles, bus stop improvements, facility improvements, and other capital projects related to supporting transit service	$ 39,945,715.76
–	Transit Capital	Committed	Bus and Bus Stop Amenities FTA Grant Award	FTA Grant	$ 12,834,267.00			Purchase of 10 buses, charging infrastructure and workforce development.	$ 12,834,267.00
–	Transit Capital	Committed	Maintenance Operations and Administrative Base MOAB federal grant award	FTA Grant	$ 39,142,124.00	MUTD	$ 10,000,000.00	Construction of new bus operations facility	$ 49,142,124.00
–	Safety	n/a	Future nominated HSIP Projects	HSIP	$ 9,137,861.84			Improvements to address serious and fatal crashes on the region's roadway network	$ 9,137,861.84
–	Maintenance	n/a	Pavement Preservation and Highway Maintenance	UPP, IM, STPS	$ 102,881,968.00			Perform chip seals, overlays, mill & fill, and other maintenance improvements.	$ 851,316.00
–	Maintenance	n/a	National Freight movement & efficiency	NHFP	$ 10,909,126.95			Future projects to improve the efficient movement of freight and goods along the National Highway Freight Network	$ 12,834,267.00
–	Corridor	n/a	Urban and National Highway System Improvements	NH, MACI	$ 305,611,188.00			Improvements to improve the function, efficiency, accessibility and reliability of the National Highway and Urban System routes within the Missoula MPO. Includes improvements to the region's bridges.	$ 305,611,188.00

Committed and Recommended Near Term Projects											
Project ID	**Project type**	**Project Phase**	**Project Name**	**Funding Source 1**	**Dollar Amount**	**Funding Source 2**	**Dollar Amount**	**Description**	**Project Start**	**Project End**	**Base Plan Cost Estimate 2025**
–	Maintenance	Committed	Missoula Urban Pave Preservation	UPP	$ 2,977,311.00			Pavement Preservation project on S. 3rd St (Reserve St to Russell St), S. Reserve St (Brooks St to 39th St), Toole Ave (W. Broadway St to Scott St), Spruce St (Scott St to Madison St), Madison St (Spruce St to E. Broadway St), E. Broadway St (Van Buren St to I-90), E. Beckwith Ave (Higgins Ave to Arthur Ave), and Mullan Rd (Reserve St to Frey Ln).			$ 2,977,311.00
–	Active Transportation	Committed	S Russell St Sidewalk	TA	$ 853,233.78	County	$ 132,252.22	Sidewalk upgrades between Brooks St and Fairview.	Brooks St	Fairview	$ 985,486.00
–	Safety	Committed	SF 189 Russell Street Lighting	HSIP	$ 492,325.00			Install lighting on Russell Street between Brooks and S 39th Street			$ 492,325.00
–	Safety	Committed	SF 229 D1 I-90 Striping 6 Inch	HSIP	$ 190,997.00			Safety striping along I-90 within the MPO boundary			$ 190,997.00
–	Safety	Committed	SF 229 Missoula Wrong Way Phase 2	HSIP	$ 80,276.00			Safety project on I-90 including signage to indicate wrong-way along interchanges within MPO boundary			$ 80,276.00
–	Corridor	Committed	Trail maintenance	TA	$ 1,049,111.51	City	$ 162,613.50	Trail maintenance of plans on the TIP including Milwaukee, Riverfront, Bitterroot, South Hills, trails beyond the city limits			$ 1,211,725.00
–	Corridor	Committed	Lolo Street Bridge Replacement	PROTECT	$ 2,937,901.00						$ 2,937,900.80

C180	Corridor	Committed	BUILD Grant Trails - Wye/Mullan Plan Collector Routes	TA	$ 1,533,115.35			Additional impact fee	Multiple	Multiple	$ 1,533,115.35
–	Maintenance	Committed	West of Missoula-NW	STPS	$ 18,407,600.00			Reconstruction of the existing roadway, structure work, drainage improvements and guardrail improvements. This project is located in Missoula County on State Secondary Route 263 from reference point 5.7 to 10.6.			$ 18,407,600.00
C101	Corridor	Committed	Higgins Ave Multimodal Improvements	RAISE	$ 8,224,780.00			Create complete street with transit, bicycle, pedestrian, and streetscape improvements	Broadway St	Brooks St	$ 8,224,780.00
C103	Corridor	Committed	California Street Complete Street and reconstruction	City	$ 3,121,000.00			Reconstruct California with pedestrian, bicycle, and streetscape improvements, and squared off curve to create parcel	River Rd	S 3rd St	$ 3,121,000.00
C107	Corridor	Committed	Front/Main 2-Way Conversion and Multimodal Improvements	RAISE	$ 11,275,255.00		$ -	Reconfigure roadway, install bicycle, pedestrian, and streetscape improvements, traffic signal at Madison St	Madison St	Orange St	$ 11,275,255.00
C116	Corridor	Committed	Hwy 200 Complete Street	NAE	$ 11,600,000.00	County	$ 400,000.00	Create complete street with transit, bicycle, pedestrian, and streetscape improvements per Hwy 200 plan	Staple St	Highton St	$ 12,000,000.00
C121	Corridor	Committed	South Ave Complete Street and Shared-Use Path	SS4A	$ 9,311,254.00	City	$ 2,327,846.00	Create complete street with bicycle, pedestrian, transit, and streetscape improvements	Clements Rd	Reserve St	$ 11,639,100.00
C128	Corridor	Committed	Bitterroot River Crossing (South Ave Bridge)	Bridge	$ 20,012,836.00	CMAQ	$ 238,095.00	Construct multimodal bridge over Bitterroot River	South Ave	River Pines Rd	$ 20,287,836.00
C191	Corridor	Committed	Hwy 200 Railroad Bridge Replacement	NAE	$ 17,400,000.00	City	$ 600,000.00	Replace RR bridge and create Hwy 200 complete street	N Easy St	Highton St	$ 18,000,000.00
C223	Corridor	Committed	Orange Street Tunnel Rehabilitation	Bridge	$ 11,330,715.00				N Orange St	Railroad Tracks	$ 11,330,715.00
C3	Corridor	Committed	Kiwanis Park Trail Widening	RAISE	$ 302,000.00			Construct Primary Commuter Trail through Kiwanis Park	Ron's River Trail	Front St	$ 302,000.00
C66	Corridor	Committed	Scott St Area Complete Street	City	$ 2,226,000.00			Create complete street with bicycle, pedestrian, transit, and streetscape improvements	Otis St	Philips St	$ 2,226,000.00
C8	Corridor	Committed	Lower Miller Creek Complete Street	City	$ 354,000.00	Developer, Other	$ 2,840,000.00	Create a complete street including bicycle, pedestrian, and streetscape improvements	Linda Vist Blvd	Bigfork Rd	$ 3,194,000.00
C82	Corridor	Committed	Ron's River Trail Downtown	RAISE	$ 5,895,061.00	City	$ 243,800.00	Upgrade Primary Commuter Trail to appropriate width, accessibility, and lighting standards for urban area; includes ADA access to Beartracks Bridge	Madison St	Orange St	$ 6,138,861.00
I259	Intersection	Committed	California St/Toole Ave/Broadway St Intersection Improvements	CMAQ	$ 2,798,438.76	MACI	$ 433,761.24	Intersection safety and efficiency improvements, including construction of a roundabout, safe crossings, bicycle and pedestrian facilities			$ 3,232,200.00
I264	Intersection	Committed	Orange Street and Cregg Lane Intersection Improvement	City	$ 376,000.00			Construct traffic signal and crosswalks			$ 376,000.00
C127	Corridor	Committed	Russell Street Reconstruction	NH	$ 22,596,480.00	STPU	$ 19,596,403.00	Create complete street with bus rapid transit, bicycle, pedestrian, and streetscape improvements	Mount Ave	Sherwood St	$ 42,062,483.00
C188	Corridor	Committed	Ivy/Franklin/Park Neighborhood Greenway	City	$ 1,000,000.00			Install sidewalks, traffic calming, and streetscape improvements	Plymouth St	SW Higgins Ave	$ 1,000,000.00
C258	Corridor	Near term	California Street Bridge Renovation	TA	$ 3,069,711.22	City	$ 475,808.78	Replace pedestrian bridge deck and lighting	California Foot Bridge	Flynn Lowney Ditch	$ 3,545,520.00
C45	Corridor	Near term	Kent/Central Neighborhood Greenway	City	$ 1,406,000.00			Install traffic calming and wayfinding treatments, intersection crossings	Maurice Ave	31st St	$ 1,406,000.00
C60	Corridor	Near term	Ron's River Trail Extension	CMAQ	$ 927,271.80	City	$ 143,728.20	Construct Primary Commuter Trail along Clark Fork River	Burton St	Orange St	$ 1,071,000.00
C72	Corridor	Near term	Bitterroot Trail Bridge at Clark Fork River	City	$ 3,058,000.00	CRP	$ 1,000,000.00	Conversion of the MRL rail bridge at W. Broadway to provide pedestrian access	McCormick Park/Ogren Field	Broadway St	$ 4,058,000.00
C86	Corridor	Near term	Hwy 200 Shared-Use Path	CRP	$ 3,297,832.20	County	$ 511,167.80	Construct Primary Commuter Trail along Hwy 200	Tamarack Rd	Staples St	$ 3,809,000.00
		Near term	Signal Optimization Study	CMAQ	$ 700,000.00						$ 700,000.00
I141	Intersection	Near term	Catlin St and 3rd St Intersection Improvements	City	$ 232,000.00			Improve multimodal safety and operations			$ 232,000.00
C119	Corridor	Near term	River Rd Complete Street	City	$ 3,123,000.00			Create complete street with bicycle, pedestrian, and streetscape improvements	Reserve St	Russell St	$ 3,123,000.00

*CIP includes City and County local funding comprised of road district, gas tax, and impact fees

Recommended Medium and Long Term Projects								
Project ID	**Project type**	**Project Phase**	**Project Name**	**Funding Source**	**Description**	**Project Start**	**Project End**	**Base Plan Cost Estimate 2025**
C19	Corridor	Medium term	West Riverside 1st St Shared-Use Path	CMAQ, TA, County	Construct Shared Use Path connecting Hwy 200 to the neighborhood	US 200	W Riverside Dr	$ 251,000.00
C225	Corridor	Medium term	Milwaukee Trail Widening Reconstruction and Lighting	TA, CIP*, STPU	Reconstruct Primary Commuter Trail to urban standards with lighting and accessible connections to abutting streets	S Van Buren Ave	Higgins	$ 232,000.00
I169	Intersection	Medium term	Reserve St S 3rd St W Intersection Improvements	HSIP, City, STPU, CMAQ	Install crossing safety countermeasures			$ 522,000.00
C43	Corridor	Medium term	Pattee Creek Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments, intersection crossings	S Higgins Ave	Reserve St	$ 353,000.00
C44	Corridor	Medium term	Burton Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments, intersection crossings	Stoddard St	Riverfront Trail	$ 235,000.00
C102	Corridor	Medium term	S 3rd St Complete Street	STPU,CMAQ, CIP, CRP, MACI	Create complete street with bicycle, pedestrian, transit, and streetscape improvements	Hiberta St	Reserve St	$ 2,304,000.00
C112	Corridor	Medium term	Russell St Complete Streets	STPU, CMAQ, CIP, TIF, HSIP, MACI	Create complete street with transit, bicycle, pedestrian, and streetscape improvements	Brooks St	Mount Ave	$ 2,553,000.00
C122	Corridor	Medium term	Broadway Complete Street	STPU, CMAQ, CIP, TIF, HSIP, MACI, NH	Create complete street with transit, bicycle, pedestrian, and streetscape improvements	Van Buren St	Toole Ave	$ 6,678,000.00
C13	Corridor	Medium term	3rd St Bike Lane Extension	CMAQ, TA, CIP, CRP, TIF, MACI	Install bike facilities commensurate with speeds, volumes, and travel lanes	Ash St	Higgins Ave	$ 12,000.00
C133	Corridor	Medium term	Reserve St Protected Bike Lanes	STPU, CMAQ, TA, CIP, CRP, TIF, HSIP, MACI, NH	Improve bicycle facilities and pedestrian crossings	3rd St	I-90	$ 146,000.00

C134	Corridor	Medium term	Union Pacific - Palmer Protected Bike Lanes	CMAQ, TA, CIP, CRP, MACI	Improve bicycle facilities and pedestrian crossings	Clark Fork Ln	Broadway St	$ 1,714,000.00
C2	Corridor	Medium term	Northside Riverfront Trail Extension	CMAQ, TA, CIP, CRP, TIF	Construct Primary Commuter Trail along Clark Fork River and bridge across Rattlesnake Cr	Madison St	Van Buren St	$ 870,000.00
C201	Corridor	Medium term	Wylie Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Lolo St	Wylie	$ 11,600.00
C202	Corridor	Medium term	Jackson/Holly Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Van Buren St	Monroe St	$ 11,600.00
C203	Corridor	Medium term	Alvina Path Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Duncan Dr	City Dr	$ 11,600.00
C206	Corridor	Medium term	University Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	S Higgins Ave	Arthur Ave	$ 121,800.00
C207	Corridor	Medium term	Rollins/Cottonwood Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	W Florence St	Mount Ave	$ 122,000.00
C208	Corridor	Medium term	Tremont/Chestnut Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	River St	Plymouth St	$ 354,000.00
C209	Corridor	Medium term	Myrtle/Woodford Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	S 3rd St W	Mount Ave	$ 122,000.00
C210	Corridor	Medium term	Grove Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	S 3rd St W	River Rd	$ 11,600.00
C212	Corridor	Medium term	Waverly Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Turner St	Defoe St	$ 11,600.00
C213	Corridor	Medium term	Grand Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	N 1st St	N 5th St	$ 11,600.00
C214	Corridor	Medium term	Holmes Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Charlo St	Phillips St	$ 122,000.00
C216	Corridor	Medium term	Sommers Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	Discovery Way	Sommers St	$ 11,600.00

C217	Corridor	Medium term	Spurgin Rd/12th Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments	S Reserve St	Bitterroot Branch	$ 122,000.00
C218	Corridor	Medium term	Garfield/Agnes Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments	Ernest Ave	Brooks St	$ 11,600.00
C22	Corridor	Medium term	Regent St Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments, intersection crossings	Mount Ave	Kent Ave	$ 117,000.00
C33	Corridor	Medium term	North Reserve Scott Street Area Grid Extension	CIP, Impact Fee, TIF, MACI	Create preliminary network of Complete Streets in eastern third of NR/SS Master Plan Area	Otis St	Philips St	$ 2,226,000.00
C36	Corridor	Medium term	Grant St Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments	3rd St	North Ave W	$ 122,000.00
C37	Corridor	Medium term	Sherwood Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments, intersection crossings	Russell St	Pine St	$ 127,000.00
C38	Corridor	Medium term	Benton Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments, intersection crossings	Higgins Ave	Bancroft St	$ 119,000.00
C39	Corridor	Medium term	Gerald Neighborhood Greenway	CMAQ, TA, CIP, CRP, MACI	Install traffic calming and wayfinding treatments, intersection crossings	4th St	South Ave W	$ 123,000.00
C40	Corridor	Medium term	Schilling Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments, intersection crossings	3rd St	Bitterroot Trail	$ 473,000.00
C42	Corridor	Medium term	4th St Neighborhood Greenway	CMAQ, TA, CIP, CRP, TIF, MACI	Install traffic calming and wayfinding treatments, intersection crossings	Schilling St	Toole Park	$ 475,000.00
C52	Corridor	Medium term	N 2nd St Complete Street	CMAQ, CIP, CRP, MACI	Create complete street with bicycle, pedestrian, and streetscape improvements	Madison St	A St	$ 2,412,000.00

C53	Corridor	Medium term	Northbank Riverfront Trail East	CMAQ, TA, CIP, CRP, TIF	Construct Primary Commuter Trail along Clark Fork River	Easy St	Van Buren St	$ 2,688,000.00
C6	Corridor	Medium term	North Reserve/Scott Street I-90 Trail Connection	CMAQ, TA, CIP, CRP, TIF	Construct Primary Commuter Trail along the base of I-90	Grant Creek Rd	Scott St	$ 3,257,000.00
C62	Corridor	Medium term	Strand Ave to Burlington Ave Shared-Use Path	CMAQ, TA, CIP, CRP, TIF	Construct Shared Use Path to connect each side of Regent St	Strand Ave	Burlington Ave	$ 107,000.00
C7	Corridor	Medium term	Howard Raser Ave Complete Street	CMAQ, CIP, CRP, TIF, MACI	Construct new street with high quality multimodal infrastructure, using NR/SS Master Plan as a starting design	Old Grant Creek Rd	Scott St	$ 9,312,000.00
C95	Corridor	Medium term	Milwaukee Trail Lighting	CMAQ, TA, CIP, CRP, TIF	Install pedestrian scale trail lighting	Reserve St	Catlin St	$ 406,000.00
C96	Corridor	Medium term	Post Siding Road Shared-Use Path	CMAQ, TA, CIP, CRP	Construct Shared Use Path connecting Bitterroot Trail to Fort Missoula	Old Hwy 93	Fort Missoula Rd	$ 1,315,000.00
I145	Intersection	Medium term	E Broadway St and N Van Buren St Intersection Improvements	STPU, CMAQ, CIP, HSIP, MACI, NH	Improve multimodal safety			$ 522,000.00
I146	Intersection	Medium term	Owen St and Broadway St Enhanced Crossing	STPU, CMAQ, CIP, HSIP, MACI, NH	Enhance crosswalk along Neighborhood Greenway to facilitiate bike/ped movement			$ 348,000.00
I154	Intersection	Medium term	Brooks St and Stephens Ave Intersection Improvements	STPU, CMAQ, CIP, HSIP, MACI, NH	Improve multimodal safety and operations			$ 145,000.00
I155	Intersection	Medium term	Greenough Dr and Vine St Intersection Improvements	STPU, CMAQ, CIP, HSIP, MACI	Facilitate safe crossing of Greenough Dr and access to Greenough Park Trail			$ 232,000.00
I165	Intersection	Medium term	6th St and Ronan St Enhanced Trail Crossing	CMAQ, TA, CIP, CRP				$ 145,000.00
I167	Intersection	Medium term	4th and Orange Enhanced Crossing	STPU, CMAQ, CIP, HSIP, MACI	Enhance crosswalk along Neighborhood Greenway to facilitiate bike/ped movement			$ 232,000.00
I261	Intersection	Medium term	Reserve St and Spurgin Rd Intersection Improvements	STPU, CMAQ, CIP, HSIP, MACI, NH	Install crossing safety countermeasures			$ 522,000.00
C132	Corridor	Medium term	Broadway Protected Bike Lanes	STPU, CMAQ, CIP, TIF, HSIP, MACI, NH	Install on-street bicycle facilities and improve crossings	Mullan Rd	Mary Jane Blvd	$ 636,000.00
C114	Corridor	Medium term	Johnson Street Extension	CMAQ, CIP, CRP, TIF	Create complete street along RR tracks with transit, bicycle, pedestrian, and streetscape improvements	South Ave	Brooks St	$ 2,829,000.00

I260	Intersection	Medium term	Highway 93 and Miller Creek Road	STPU, CMAQ, CIP, CRP, HSIP, MACI, NH	Additional turn lane, signal timing optimization, and any associated safety enhancements.			$ 522,000.00
C94	Corridor	Long term	Blue Mountain Rd Shared-Use Path	CMAQ, TA, CIP, CRP	Construct Shared Use Path	Bitterroot Trail	Blue Mountain Recreation Area	$ 1,005,000.00
C23	Corridor	Long term	Blue Mountain Rd Trail	CMAQ, TA, CIP, CRP	Construct Shared Use Path along Blue Mtn Rd	Forest Hill Ln	Future Bridge	$ 494,000.00
C104	Corridor	Long term	Rattlesnake Dr Complete Street	CMAQ, CIP, CRP, MACI	Create complete street with bicycle, pedestrian, transit, and streetscape improvements	Creek Crossing	Missoula Ave	$ 6,049,000.00
C117	Corridor	Long term	South Ave Complete Street	CMAQ, CIP, CRP, MACI	Create complete street with bicycle, pedestrian, and streetscape improvements	Hanson Dr	Clements	$ 5,541,000.00
C118	Corridor	Long term	Curtis St Complete Street	CMAQ, CIP, CRP, MACI	Create complete street with bicycle, pedestrian, and streetscape improvements	S 3rd St	River Rd	$ 2,320,000.00
C131	Corridor	Long term	England Blvd Protected Bike Lanes	CMAQ, TA, CIP, CRP, MACI	Improve bicycle facilities and pedestrian crossings	Mary Jane Blvd	Great Northern Ave	$ 4,007,000.00
C226	Corridor	Long term	Ronan Street	CMAQ, CIP, CRP, MACI	Create complete street with widened and enhanced Bitterroot Trail, streetscape improvements, intersection crossings	S 6th St W	S 14th St W	$ 2,216,000.00
C241	Corridor	Long term	Clements Road Complete Street	CMAQ, CIP, CRP, MACI	Create a complete street with appropriate multimodal facilities, intersection improvements at 7th St, Spurgin St and Mount Ave.	S 3rd St W	North Ave	$ 4,743,000.00
C242	Corridor	Long term	S Russell Street Safety Improvements	STPU, CIP, TIF, HSIP, MACI	Improve safety and enhance bike/ped connectivity, intersection improvements at Fairview, Fairgrounds Trail, Ernest, McDonald, and 34th	Brooks St	SW 39th St	$ 2,087,000.00
C31	Corridor	Long term	Mullan Rd Shared-Use Path	CMAQ, TA, CIP, CRP	Construct Shared Use Path along Mullan Rd	Deschamps Ln	Cote Ln	$ 3,831,000.00

C91	Corridor	Long term	Milwaukee Trail Extension and Bridges	CMAQ, TA, CIP, CRP	Construct Primary Commuter Trail across Clark Fork River connecting to Sxwtpqeyn Area	Mullan Rd (via Schmidt Rd)	Grove St	$ 16,175,000.00

Illustrative and Grant Contingent Projects

Project ID	Project type	Project Phase	Project Name	Funding Source	Description	Project Start	Project End	Base MPO Cost Estimate 2025
C124	Corridor	Grant Contingent	Brooks St Complete Street and Transit Improvements	Federal Grant	Create complete street with bus rapid transit, bicycle, pedestrian, and streetscape improvements	Reserve St	Stephens Ave	$ 34,779,000.00
C130	Corridor	Grant Contingent	BUILD Grant Roads - Wye/Mullan Plan Collector Routes	Federal Grant	Construct complete street extensions of collector network	Multiple	Multiple	$ 34,534,000.00
C15	Corridor	Grant Contingent	I-90 Trail Grant Creek to the Wye	Federal Grant	Construct Shared Use Path north of I-90 between Grant Creek and the Wye	Grant Creek Rd	US 93	$ 13,653,000.00
C181	Corridor	Grant Contingent	Coal Mine Road/I-90 Interchange	Federal Grant	Construct new interchange with I-90	Howard Raser Ave	I-90	$ 17,390,000.00
C88	Corridor	Grant Contingent	Riverfront Triangle Non-Motorized Bridge	Federal Grant	Construct bicycle/pedestrian bridge	Riverfront Triangle	McCormick Park	$ 9,275,000.00
C89	Corridor	Grant Contingent	Missoula College Non-Motorized Bridge	Federal Grant	Construct bicycle/pedestrian bridge	Missoula College	Kim Williams Trail	$ 9,275,000.00
C97	Corridor	Grant Contingent	People's Way Trail Phase 1	Federal Grant	Construct Shared Use Path along Hwy 93 between the Wye and Evaro	Evaro	I-90	$ 13,767,000.00
C222	Corridor	Illustrative	South Ave to Bitterroot Trail Connection		Reconstruction of the bitterroot trail which is deteriorating. Includes widening to meet AASHTO standards.	Old Fort Rd	Reserve St	$ 1,979,000.00
C55	Corridor	Illustrative	Westside Area Mobility Enhancements		Complete sidewalks, trail connections, bike facilities, neighborhood greenways, and intersection improvements between Broadway, Scott, Toole/RR, and Orange	Multiple	Multiple	$ 2,087,000.00
C74	Corridor	Illustrative	Northbank Riverfront Trail West		Construct Primary Commuter Trail along Clark Fork River	Reserve St	Russell St	$ 2,688,000.00
C90	Corridor	Illustrative	Kim Williams Trail Connector		Construct Shared Use Path	Canyon River Rd	Bandmann Trail	$ 1,368,000.00

C83	Corridor	Illustrative	S 3rd St Bicycle and Pedestrian Facilities		Create complete street with bicycle, pedestrian, and streetscape improvements	Clements Rd	Hiberta St	$ 3,319,000.00
C78	Corridor	Illustrative	Hiberta St Complete Street		Create complete street with bicycle, pedestrian, and streetscape improvements	Spurgin Rd	S 3rd St	$ 1,900,000.00
C243	Corridor	Illustrative	Raser Drive Bridge		Construct multimodal bridge over RR tracks	Rodgers St	American Way	$ 38,287,281.87
C109	Corridor	Illustrative	Carousel Dr Reconfiguration		Reconfigure roadway in concordance with North Riverfront Parks & Trails Plan	Front St	Higgins Ave	$ 1,941,000.00
C56	Corridor	Illustrative	Spurgin Rd Shared-Use Path		Construct Shared Use Path along Spurgin Rd	Clements Rd	Reserve St	$ 5,571,000.00
C1	Corridor	Illustrative	Deer Creek Rd/Speedway Ave Trail		Construct Shared Use Path along right of way	Canyon River Rd	US Hwy 200	$ 833,000.00
C100	Corridor	Illustrative	Mullan Rd Widening			Cote Ln	Flynn Ln	$ 12,396,000.00
C105	Corridor	Illustrative	Old Grant Creek/Cemetery Rd/Rodgers St Multimodal Improvements		Create complete street with bicycle, pedestrian, and streetscape improvements	Shakespeare St	Howard Raser Ave	$ 7,884,000.00
C108	Corridor	Illustrative	Johnson St Extension and Complete Street		New complete street with bicycle, pedestrian, and streetscape improvements	River Rd	S 3rd St	$ 2,389,000.00
C11	Corridor	Illustrative	Mullan Rd - Frenchtown Trail		Construct Shared Use Path along Mullan Rd	Deschamps Ln	Hamel Rd	$ 15,143,000.00
C110	Corridor	Illustrative	Railyard St Grid Construction		Create new gridded neighborhood streets between RR tracks and N 2nd St	Ryman St	Madison St	$ 2,681,000.00
C111	Corridor	Illustrative	Clay St Streetscaping and Intersection Control		Install streetscape and traffic safety countermeasures	Levasseur St	Front St	$ 232,000.00
C113	Corridor	Illustrative	Grant Creek Rd Complete Street		Reconfigure roadway and install traffic safety countermeasures including roundabout at Expo Pkwy	Snowbowl Rd	I-90	$ 14,110,000.00
C115	Corridor	Illustrative	Russell St Extension		Construct bridge over RR tracks	I-90	Railroad	$ 63,761,000.00
C12	Corridor	Illustrative	North Ave Bike Lanes		Install bike facilities commensurate with speeds, volumes, and travel lanes	Johnson St	Bitterroot Trail	$ 12,000.00

C120	Corridor	Illustrative	Brooks St Complete Street		Create complete street with transit, bicycle, pedestrian, and streetscape improvements	Stephens Ave	Mount Ave	$ 1,302,000.00
C135	Corridor	Illustrative	Raser Drive Extension		Construct complete street with bicycle, pedestrian, and streetscape improvements	Coal Mine Road	Rodgers St	$ 2,700,000.00
C14	Corridor	Illustrative	Mullan Rd Connection Trail		Construct Primary Commuter Trail along old Miilwaukee rail grade	Mullan Rd	Schmidt Rd	$ 492,000.00
C16	Corridor	Illustrative	Deschamps Ln Shared-Use Path		Construct Shared Use Path connecting the Wye to Mullan Rd	Laflesch Ln	Bruins Ln	$ 5,098,000.00
C17	Corridor	Illustrative	Butler Creek Rd Trail		Construct Shared Use Path along Butler Creek Rd	Angus Ln	Covenant Rd	$ 3,793,000.00
C18	Corridor	Illustrative	Great American Trail - West		Construct Shared Use Path along old Miilwaukee rail grade	Loiselle Ln	Deschamps Ln	$ 9,215,000.00
C185	Corridor	Illustrative	Christian Dr Extension		Construct complete street with bicycle, pedestrian, and streetscape improvements	Lower Miller Creek Rd	Old Bitterroot Rd	$ 2,913,000.00
C186	Corridor	Illustrative	Catlin St Extension		Construct complete street with bicycle, pedestrian, and streetscape improvements	Idaho St	River Rd	$ 1,585,000.00
C20	Corridor	Illustrative	West Riverside Trail		Construct Shared Use Path along north bank of Blackfoot River	Anaconda St	Cowboy Trail Rd	$ 1,326,000.00
C21	Corridor	Illustrative	Cowboy Trail Rd Shared-Use Path		Construct Shares Use Path along base of Woody Mountain	Cowboy Trail Rd	Hellgate Lions Park	$ 1,146,000.00
C221	Corridor	Illustrative	Sawmill Gulch Trail		Construct Shared Use Path	Woods Gulch Rd	Russian Joe Rd	$ 1,855,000.00
C224	Corridor	Illustrative	Post Siding to South Avenue Trails Connection		Construct Primary Commuter trail connection from Post Siding to Ft Missoula Regional Park Trail system	Post Siding Rd	South Ave W	$ 1,002,000.00
C227	Corridor	Illustrative	Milwaukee Extension: Kim Williams Natural Area to Deer Creek Rd/Milltown State Park			Deer Creek Rd	S Van Buren Ave	$ 6,613,000.00
C228	Corridor	Illustrative	Marshall Canyon Shared Use Path		Construct Shared Use Path from Hwy 200 to Marshall Mountain Regional Park	Mt Highway 200E	Marshall Creek Rd	$ 4,795,000.00

C229	Corridor	Illustrative	Rimel Road & Whitaker Shared Use Path		Construct Shared Use Path between end of Wildroot subdivision SUP to Spanish Peaks Dr	Spanish Peaks Dr	Hillview Way	$ 2,489,000.00
C230	Corridor	Illustrative	Grant Creek Trail Construction & acquisition I-90-Milwaukee		Acquire of trail corridor and construct Shared Use Path from I-90 south to the Milwaukee	Hiawath Rd	I-90	$ 6,546,000.00
C231	Corridor	Illustrative	Bonner Amphitheater, School, & River Access Trail		Construct Shared Use Path between Two Rivers Memorial Bridge and Kettlehouse Amphitheater	Chaffery Ln	Westside River Trail	$ 3,140,000.00
C24	Corridor	Illustrative	Miller Creek Shared-Use Path (Lower Miller Creek Connection)		Construct Shared Use Path along Lower Miller Creek and Miller Creek Rd	Linda Vista Blvd	Bear Run Creek Rd	$ 15,119,000.00
C240	Corridor	Illustrative	23rd Street Complete Street		Create complete street with pedestrian, transit, bicycle, and streetscape improvements	SW 39th Street	Foothills Court	$ 1,000,000.00
C250	Corridor	Illustrative	Wilkes Street Trail Connection		Construct Shared Use Path and tunnell under I-90	I-90 Trail Alternative	Wheeler Dr	$ 819,000.00
C251	Corridor	Illustrative	Robinson Street		Create complete street with pedestrian, bicycle, and streetscape improvements	Minnesota Avenue	End of Robinson St	$ 334,000.00
C252	Corridor	Illustrative	Great American Rail Trail - East		Construct Shared Use Path	Milltown State Park	End of Missoula Planning area	$ 3,140,000.00
C253	Corridor	Illustrative	Pattee Canyon Rd Shared-Use Path		Construct Shared Use Path from S Higgins to Pattee Canyon Recreation Area	Whitaker Dr	South of Canyon Gate Dr	$ 1,336,000.00
C254	Corridor	Illustrative	South Hills Trail Lighting		Install trail lighting along South Hills Trail	Reserve St	Arrowheard Dr	$ 1,069,000.00
C255	Corridor	Illustrative	Rons River Trail and Front Street Connection		Complete Primary Commuter Trail connection along east side of Madison St	Madison Street Underbridge	Front Street	$ 151,000.00
C256	Corridor	Illustrative	Front Street Complete Street		Create a complete street with pedestrian, bicycle, and streetscape improvements	Madison Street Underbridge	Van Buren St/Broadway Intersection	$ 970,000.00
C257	Corridor	Illustrative	Expressway Boulevard Trail Extension		Construct Shared Use Path along Expressway Dr	W Harrier	Grant Creek Trail Extension	$ 2,622,000.00

C26	Corridor	Illustrative	7th St Shared Use Path		Construct Shared Use Path along 7th St	Clements Rd	Reserve St	$ 1,104,000.00
C27	Corridor	Illustrative	North Ave Shoulderway Improvements		Construct Shared Use Path along North Ave	Clements Rd	Maclay Bridge	$ 558,000.00
C28	Corridor	Illustrative	North Ave Trail Connection		Construct Shared Use Path along North Ave	37th Ave	Tower St	$ 1,652,000.00
C29	Corridor	Illustrative	Mount Ave Trail Connection		Construct Shared Use Path through DNRC	27th Ave	Tower St	$ 1,380,000.00
C32	Corridor	Illustrative	Lewis & Clark Dr Shared-Use Path		Consturct Shared Use Path to Lolo School	Hwy 93	Lakeside Dr	$ 726,000.00
C34	Corridor	Illustrative	Deschamps Ln Re-Surfacing		Improve pavement condition and add ADA corners at intersections	Rollercoaster Rd	Mullan Rd	$ 1,479,000.00
C35	Corridor	Illustrative	Higgins Pedestrian Bridge		Consturct bicycle/pedestrian bridge underneath or alongside Beartracks Bridge	Ron's River Trail	Milwaukee Trail	$ 6,956,000.00
C4	Corridor	Illustrative	Levasseur St Complete Street		Reconstruct street to emphasize connectivity and accessibility of Primary Commuter Trail	Clay St	Dead End	$ 344,000.00
C46	Corridor	Illustrative	Milwaukee Trail Extension		Construct Primary Commuter Trail along old Milwaukee rail grade	Deschamps Ln	Mullan Rd	$ 6,677,000.00
C47	Corridor	Illustrative	Fort Missoula to McClay Shared-Use Path and Bridge		Construct Shared Use Path and bridge connecting Target Range School to Blue Mountain Trail Head	Blue Mountain Rd	South Ave	$ 2,570,000.00
C48	Corridor	Illustrative	Whitaker Dr Complete Street		Create complete street with bicycle, pedestrian, transit, and streetscape improvements	Ben Hogan Dr	Higgins Ave	$ 6,628,000.00
C5	Corridor	Illustrative	Burlington Ave Complete Street		Create complete street with pedestrian and streetscape improvements	Margaret St	Reserve St	$ 630,000.00
C50	Corridor	Illustrative	Rattlesnake Dr Shared-Use Path		Construct Shared Use Path along Rattslenake Dr	USFS Trailhead	Tamarack St/Fox Hollow	$ 1,831,000.00
C51	Corridor	Illustrative	Duncan Dr Shared-Use Path		Construct Shared Use Path along Duncan Dr	Duncan Dr Trailhead	Mountain View Dr	$ 2,184,000.00
C54	Corridor	Illustrative	Northside Greenway Connector		Construct Shared Use Path along base of I-90	Scott St	Northside Park	$ 1,256,000.00

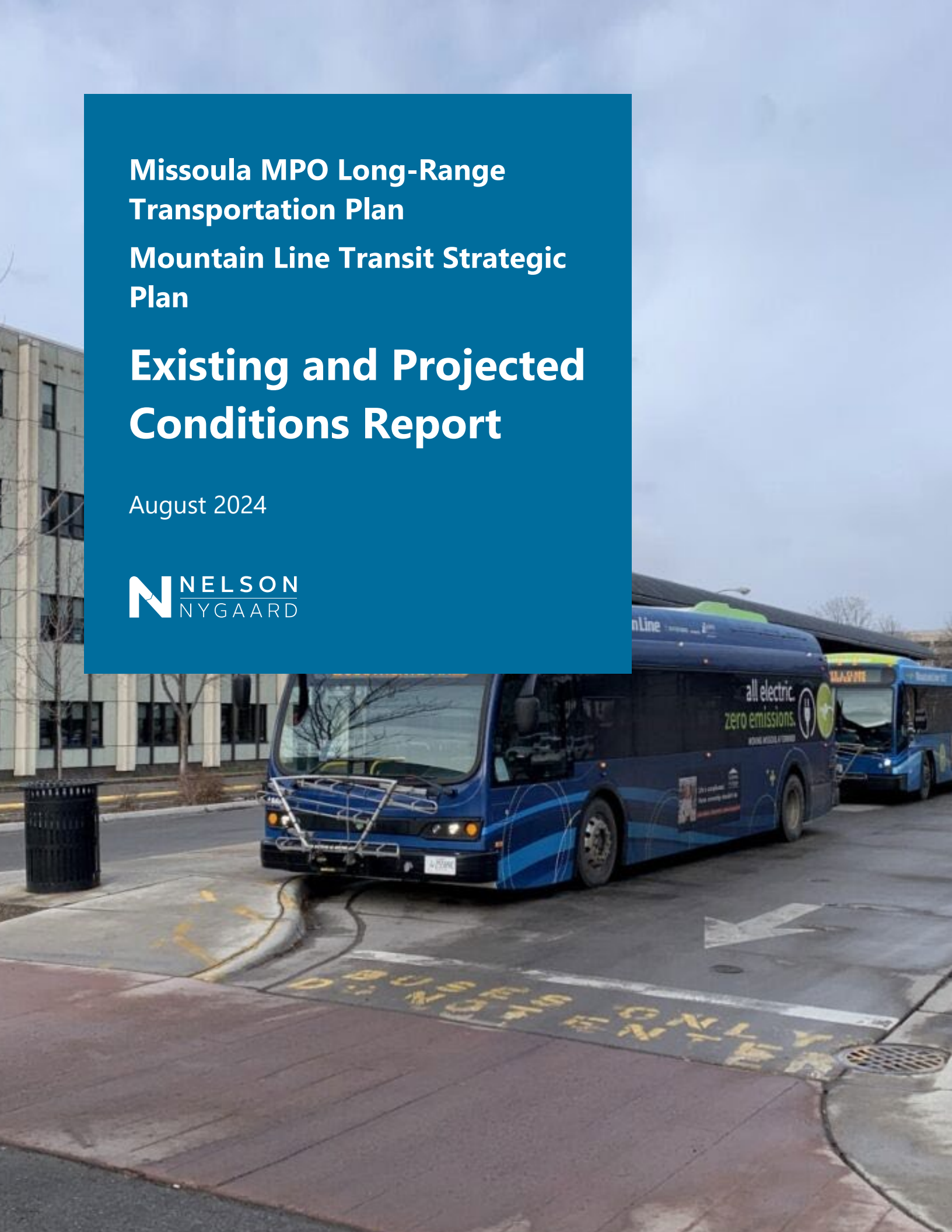
C57	Corridor	Illustrative	Mullan Rd Bicycle and Pedestrian Bridge		Construct bicycle/pedestrian bridge	Monroc	Cooper St/Riverfront Trail	$ 9,275,000.00
C58	Corridor	Illustrative	Lincoln Hills Dr Bicycle and Pedestrian Improvements		Construct complete street with bicycle, pedestrian, and streetscape improvements	Rattlesnake Dr	Applehouse Ln	$ 219,000.00
C59	Corridor	Illustrative	Lincoln Hills Dr Bicycle and Pedestrian Improvements		Construct complete street with bicycle, pedestrian, and streetscape improvements	Contour Ln	Applehouse Ln	$ 219,000.00
C61	Corridor	Illustrative	Northside 1st St Shared-Use Path		Construct Shared Use Path along RR tracks/N 1st St	Madison Ave	Northside Pedestrian Bridge/Grand Ave	$ 1,248,000.00
C63	Corridor	Illustrative	Madison St Underbridge to Arthur Street Shared-Use Path		Construct Shared Use Path	Southside Riverfront Trail	S 5th St E	$ 199,000.00
C64	Corridor	Illustrative	Inverness Place Shared-Use Path		Construct Shared Use Path	Inverness Place cul-de-sac	N Johnson St/Idaho St	$ 167,000.00
C65	Corridor	Illustrative	Johnson St Shared-Use Path Connection		Construct Shared Use Path	Johnson St	Curtis St	$ 315,000.00
C67	Corridor	Illustrative	Rattlesnake Dr Bicycle and Pedestrian Facilities		Construct Shared Use Path along Rattlesnake Dr	Tamarack St/Fox Hollow	Creek Crossing Rd	$ 581,000.00
C68	Corridor	Illustrative	Tamarack St Bicycle and Pedestrian Improvements		Install bicycle/pedestrian improvements	USFS Trailhead	Rattlesnake Dr	$ 173,000.00
C70	Corridor	Illustrative	River Rd Bicycle and Pedestrian Improvements		Create all ages and abilities connection between California St Bridge and Russell St underpass	California St	Russell St	$ 3,123,000.00
C71	Corridor	Illustrative	Pedestrian Undercrossing Connecting Downtown to Northside		Construct tunnell under RR tracks connecting Alder St to Northside	Railyard/B St/N 1st St	Higgins Ave	$ 35,000.00
C73	Corridor	Illustrative	Northside Bikeway			RUX Trail	Toole Ave/Bitterroot Trail	$ 1,947,000.00
C75	Corridor	Illustrative	Southbank Riverfront Trail Extension		Construct Primary Commuter Trail along Clark Fork River	Reserve St	Russell St	$ 1,777,000.00
C76	Corridor	Illustrative	Westside Greenway Trail		Construct Primary Commuter Trail connecting Bitterroot Trail to Northside Ped Bridge	Owen St	Bitterroot Railroad Spur Line	$ 453,000.00
C77	Corridor	Illustrative	Lincoln Hills Shared-Use Path		Construct Shared Use Path between Syringa Park and Rattlesnake Ct along soccer fields	Rattlesnake Ct	Lincoln Hills Dr	$ 465,000.00
C81	Corridor	Illustrative	Mountain View Drive Multimodal Improvements		Create safe and accessible route across bridge to Rattlesnake Elementary School	Duncan Dr	Rattlesnake Dr	$ 409,000.00

C85	Corridor	Illustrative	Kim Williams Trail Extension and Bridge		Consturct Primary Commuter Trail from shooting range to state park	Milltown State Park	Kim Williams Trail End	$ 10,432,000.00
C87	Corridor	Illustrative	Hawthorne School to Milwaukee Trail Shared-Use Path		Construct Shared Use Path	S 3rd St/Hawthorne School	Milwaukee Trail	$ 1,258,000.00
C92	Corridor	Illustrative	Grant Creek Trail Phase II		Construct Shared Use Path	Snowbowl Rd	Mellot Ln	$ 1,160,000.00
C93	Corridor	Illustrative	Miller Creek to Lolo Trail Connection		Construct Shared Use Path and new bike/ped bridge over Bitterroot River	Lolo/Lakeside Dr	Lower Miller Creek Rd	$ 6,592,000.00
C98	Corridor	Illustrative	Mullan Rd Complete Street		Create complete street with bicycle, pedestrian, and streetscape improvements	Mary Jane Blvd	Reserve St	$ 3,620,000.00
C99	Corridor	Illustrative	Duncan Dr/Greenough Dr Complete Street		Create complete street with bicycle, pedestrian, and streetscape improvements	Mountain View Dr	Minckler Loop	$ 4,464,000.00
I137	Intersection	Illustrative	Stephens Bike Lane Intersection Improvements		Construct protected intersection or similar treatment to address bicycle network gaps			$ 87,000.00
I138	Intersection	Illustrative	Russell St and 4th St Intersection Improvements		Enhance crosswalk along Neighborhood Greenway to facilitiate bike/ped movement			$ 232,000.00
I139	Intersection	Illustrative	Russell St and 7th St Intersection Improvements		Enhance crosswalk to facilitiate bike/ped movement across Russell St			$ 232,000.00
I140	Intersection	Illustrative	14th St and Eaton St Intersection Improvements		Construct roundabout to improve safety and operations			$ 522,000.00
I142	Intersection	Illustrative	Russell St and 6th St Intersection Improvements		Enhance crosswalk to facilitiate bike/ped movement across Russell St, EB driving			$ 232,000.00
I147	Intersection	Illustrative	Clark Fork Ln and Mullan Rd Intersection Improvements		Improve multimodal safety and operations			$ 522,000.00
I156	Intersection	Illustrative	Great Northern Ave and Palmer St Intersection Improvements		Construct roundabout to improve safety and operations			$ 522,000.00
I166	Intersection	Illustrative	Reserve and Mount Intersection Improvements		Improve multimodal safety and operations with additional/reconfigured lanes, through bike facilities			$ 87,000.00

I168	Intersection	Illustrative	South Ave and Reserve St Intersection Improvements		Construct protected intersection or similar treatment to address bicycle network gaps			$ 174,000.00
I266	Intersection	Illustrative	Kent Street and Brooks Street		Enhance crosswalk along Neighborhood Greenway to facilitiate bike/ped movement, construct shared use path on SE and NW corners of intersection and connect perpendicular to Brooks			$ 388,000.00
I182	Intersection	Illustrative	McDonald Ave and Brooks Street		Improve multimodal safety and operations			$ 348,000.00
I183	Intersection	Illustrative	Johnson Street and 3rd Street		Improve multimodal safety and operations			$ 348,000.00
I184	Intersection	Illustrative	Schilling, Curtis and 3rd		Enhance crosswalk along Neighborhood Greenway to facilitiate bike/ped movement			$ 290,000.00
I262	Intersection	Illustrative	Reserve St and S 7th St W Intersection Improvements		Install crossing safety countermeasures			$ 522,000.00
I263	Intersection	Illustrative	Reserve St and River Rd Intersection Improvements		Install crossing safety countermeasures			$ 522,000.00
C265	Corridor	Illustrative	East Broadway Complete Street		Create complete street with transit, bicycle, pedestrian, and streetscape improvements per Hwy 200 plan	Van Buren	Easy St	$ 3,350,000.00
C266	Corridor	Illustrative	Bitterroot Trail Improvements		Improvements to Bitterroot trail and future linear park.	Silver Park South	Bitterroot River Bridge	$ 8,500,000.00

Appendix C

Existing and Projected Conditions



Missoula MPO Long-Range Transportation Plan

Mountain Line Transit Strategic Plan

Existing and Projected Conditions Report

August 2024

NELSON NYGAARD

Revised for inclusion in Missoula Connect 2050 LRTP Update

Appendix July, 2025

Table of Contents

Table of Figures

1 INTRODUCTION

INTRODUCING THE ORGANIZATIONS

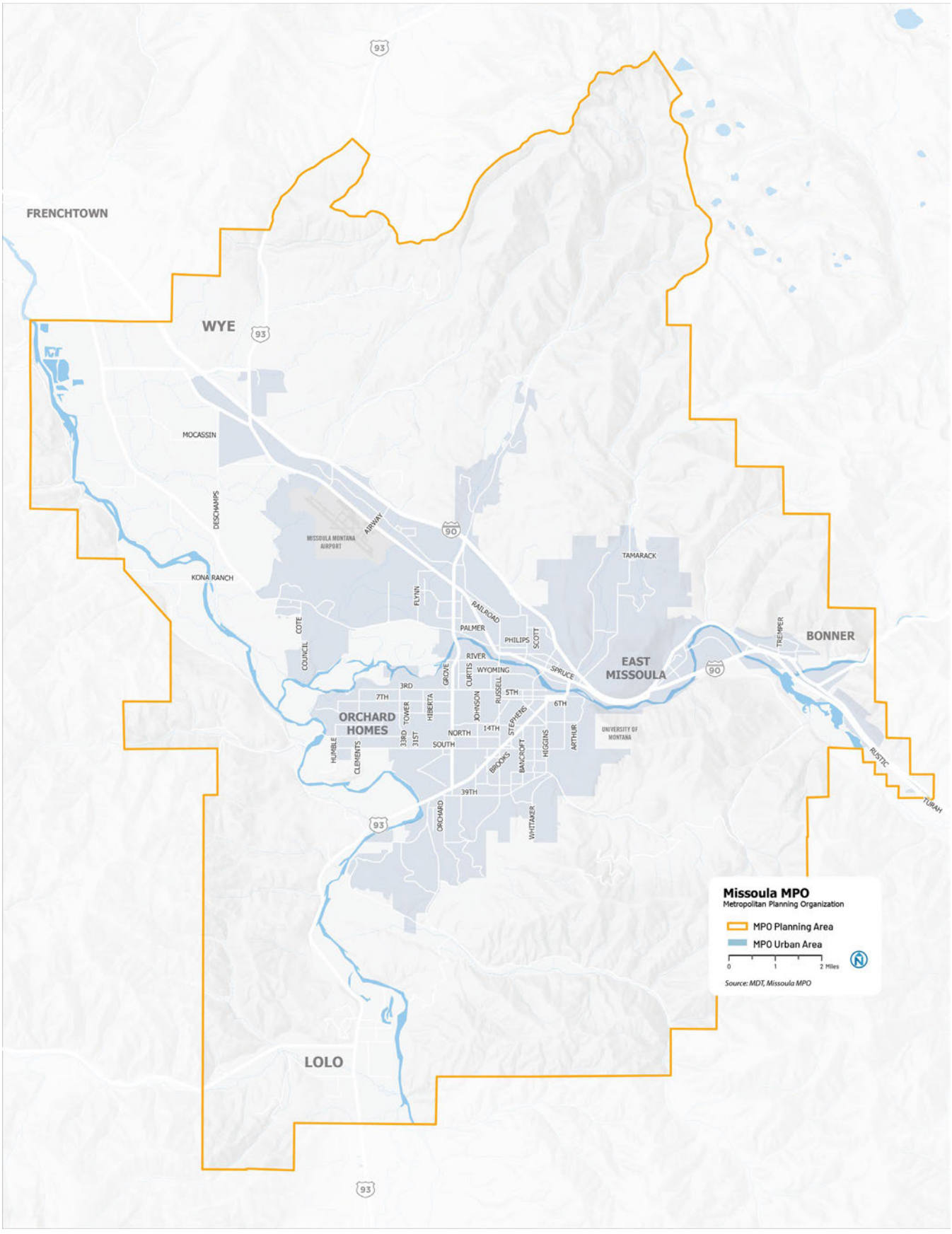
Who is the Missoula MPO?

The Missoula Metropolitan Planning Organization (MPO) works to plan a safe transportation network for the Missoula area to ensure our home has comprehensive, cooperative, and connected transportation systems. The Missoula MPO was formed over 40 years ago, after the region surpassed more than 50,000 residents following the 1980 Census. Today, the MPO is responsible for long-range planning and programming of federal transportation funds within the Missoula area. The MPO's boundaries are shown in Figure 1-1. Figure 1-2 shows Montana Statewide Routes & Highway Functional Classification.

Who is MUTD?

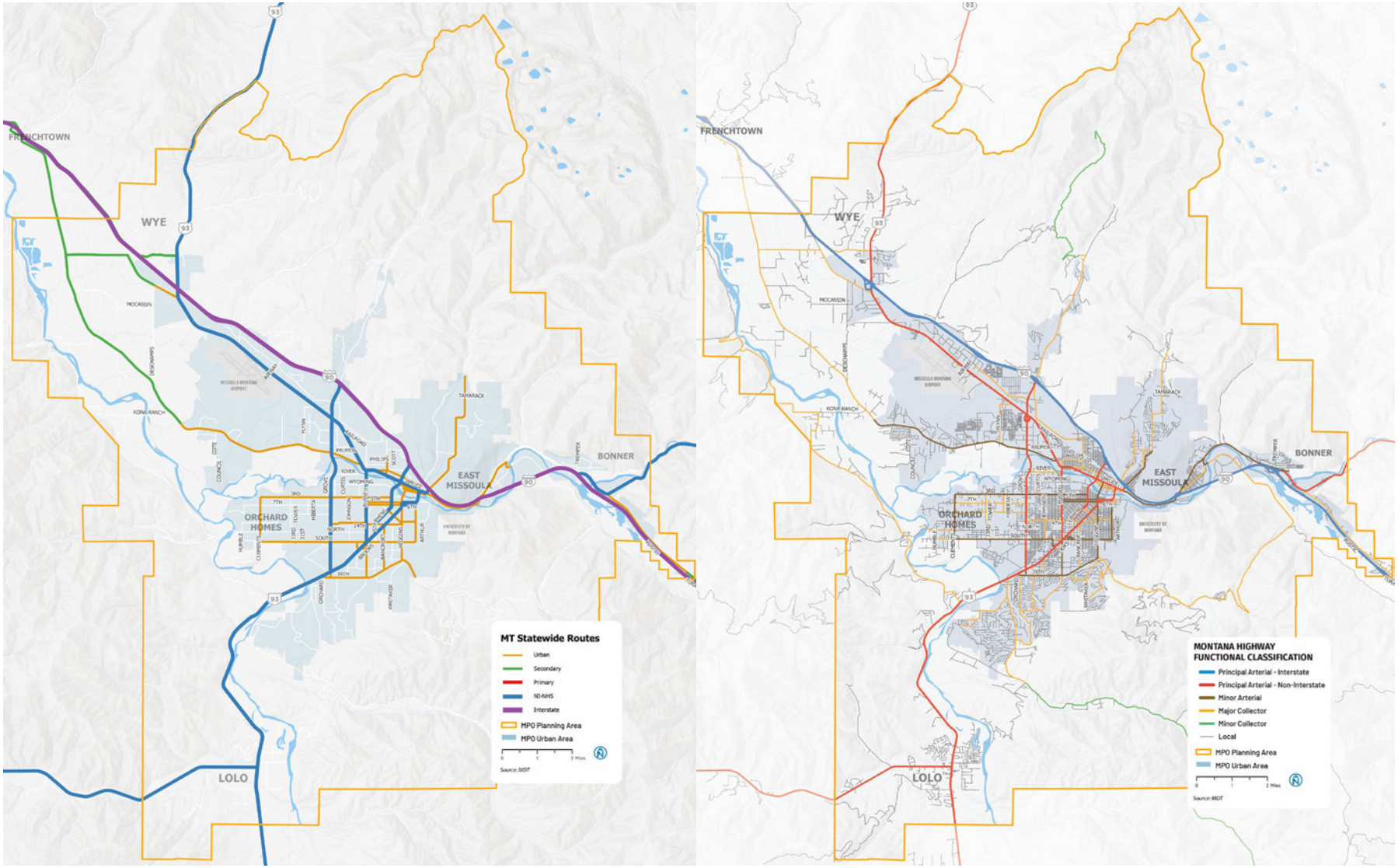
The Missoula Urban Transportation District (MUTD) operates Mountain Line, the Missoula region's transit network. MUTD was established in June 1976 by voters who authorized the creation of the district. Service operating under the Mountain Line brand began on December 12, 1977. MUTD operates both fixed-route and paratransit services within its service area. The service has continually evolved over the years including the introduction of fare-free service, expanding weekend and evening service, transitioning to an electric fleet, and improving frequencies on the highest ridership routes.

Figure 1-1 MPO Boundaries



Source: Missoula MPO

Figure 1-2 Montana Statewide Routes & Highway Functional Classification



Source: MDT

INTRODUCING THE PLANS

Missoula's Long-Range Transportation Plan

One of the Missoula MPO's primary planning projects in 2024 is an update to our Long-Range Transportation Plan (LRTP), which we're calling Missoula Connect. Missoula Connect is a 30-year plan that looks at all modes of transportation and identifies future priorities for projects and funding.

This action plan will help to steer our community toward a healthier, safer, and more sustainable future while preserving and expanding mobility for all residents. Relying on previous planning work and extensive community outreach, Missoula Connect integrates existing plans and projects to create a sustainable transportation future that improves mobility and access across all modes for all Missoula area residents, workers, and visitors. A strong transportation plan is critical to the success of Missoula's growth policy, and Missoula Connect will knit together our land use and transportation goals. The Missoula region is on the move, and we need to ensure we're not only keeping pace but staying ahead.

Missoula's Transit Strategic Plan

One of MUTD's planning efforts for 2024 is to update their Transit Strategic Plan (TSP). The last plan update, adopted in 2018, laid out a set of phased short-term network changes, along with a longer-term network vision. Three out of the four phases of the short-term network have been implemented. Changes in travel patterns brought on by the COVID-19 pandemic, continued development in the community, and other concurrent planning efforts (e.g., the Brooks Street BRT project) necessitate an update to the TSP.

PROJECT BACKGROUND

In January 2024, the Missoula MPO and MUTD engaged the services of Nelson\Nygaard to perform a combined update of the MPO's Long-Range Transportation Plan (LRTP) and MUTD's Transit Strategic Plan (TSP). The timing of both the LRTP and TSP both needing updates provided a unique opportunity for the MPO and MUTD to partner together to collectively identify improvements that can improve mobility for the region. Both final plans will include a fiscally constrained list of prioritized projects and improvements through the horizon year 2050.

PROJECT GOALS

This project has five goals that are applicable to both the LRTP and TSP efforts. These goals reflect today's needs and priorities, as well as the outcomes our region must achieve over the next 30 years. The goals are consistent with federal requirements and form the basis of the project evaluation/prioritization process that will be completed later in this project.

Improve safety and promote health to enhance quality of life

- Eliminate traffic-related fatalities and serious injuries
- Improve safety for people, walking, biking, and rolling
- Enhance active transportation and transit linkages to lower-income neighborhoods
- Increase physical activity and human connections by making walking and biking convenient modes of travel
- Improve access to recreational facilities and trails to support healthy lifestyles

Maintain assets and invest strategically to boost economic vitality

- Bring existing infrastructure and transit assets into a state of good repair to support the regional economy, local industry, and goods movement
- Balance cost-effective, implementable projects with high-impact projects
- Plan for a transportation system that makes the best use of public financial resources
- Provide a network that targets growth inward to support existing centers and mixed-use development
- Support access to businesses and commercial and industrial centers to enhance economic recovery and growth
- Explore more equitable and sustainable funding sources for transportation projects and programs

Expand mobility choices to improve efficiency and accessibility for people and goods

- Build complete streets and increase access to multimodal options
- Increase street, trail/greenway, and sidewalk network connectivity for all ages and abilities
- Optimize the efficiency and accessibility of the transportation system
- Reduce person hours of delay for people driving and improve freight movement
- Improve access to high-quality and high-frequency transit stops and routes

Connect and strengthen communities to create a more equitable region

- Increase affordability and reduce overall household transportation costs
- Develop an integrated mobility system that connects destinations with sustainable travel options
- Integrate land use and transportation planning to support infill development and create complete neighborhoods
- Improve access to schools, jobs, parks, essential services, affordable and senior housing, and basic life needs
- Engage with and invest in historically disadvantaged areas and in neighborhoods that have been adversely impacted by transportation decisions

Advance sustainability and community resilience to protect natural resources and address climate change

- Improve climate resilience and advance toward carbon neutrality
- Reduce transportation-related air emissions
- Minimize sediment, nutrients, and litter entering surface water
- Expand the urban canopy and green stormwater infrastructure
- Protect and enhance natural, cultural, and historic resources, including agricultural lands
- Create adaptable and resilient infrastructure to respond to changing needs

HOW IS THE REPORT ORGANIZED?

This existing conditions report, serves as a foundation for the development of the recommendations and future improvements for both plans. The existing conditions report synthesizes key aspects of Missoula's regional planning context, including population and employment patterns, and evaluates the existing transportation network.

- Chapter 2 examines planning and policy documents to understand previous planning work done in Missoula. It also includes key demographic and employment information.
- Chapter 3 documents the transit system in Missoula (fixed-route transit and paratransit services), including ridership trends and productivity.
- Chapter 4 provides a multimodal snapshot of transportation conditions in Missoula, which includes the roadway, bicycle, and pedestrian networks. Key performance metrics are also presented.
- Chapter 5 projects future estimates for population growth, employment, and transportation network performance under current system conditions.

2 MISSOULA CONTEXT

This chapter sets the stage for the development of the LRTP update and TSP in Missoula. The first half of this chapter summarizes existing planning and policy documents done in Missoula, including two community surveys administered in the last year. The second half of this chapter reviews key demographic and employment information, including a discussion of transportation equity and transit propensity for the region. Unless otherwise noted, any demographic and employment data is sourced from the U.S. Census Bureau and is reported at the urbanized area for Missoula.

OVERVIEW OF COMPLETED AND ONGOING PLANS

Reviewing current planning and policy documents, and understanding what has been successful in the past, helps set our framework to build on previous momentum. This review summarizes improvements (both funded and unfunded) that have been identified, which can be considered as part of the LRTP and TSP. Altogether, eight documents were reviewed. A summary of these documents is included in Figure 2-1.

Figure 2-1 Documents Reviewed with Key Projects Identified

Planning Document	Date Published	Overview of the Document	Key Projects from Studies
Downtown Safety and Mobility (SAM) Project	February 2024	The Downtown Safety and Mobility Project (DowntownSAM) is the name for a suite of long-desired infrastructure projects that the City bundled together in a compelling and successful RAISE grant application. These multimodal safety and access projects will improve connectivity within and to downtown, serving current and future community members by supporting investment in housing, local business, and government services.	▪ Higgins Avenue Multimodal Improvements ▪ Front/Main Two-Way Restoration ▪ Riverfront Trail connections
On-Demand Transit Study	November 2023	The On-Demand Study evaluates the feasibility of an on-demand transit service in the low-density areas of Missoula where fixed route service is limited or unavailable. The potential on-demand transit service would serve multiple destinations and facilitate first- and last-mile connections to Mountain Line's fixed route network.	Five on-demand zones: ▪ North Reserve – Grant Creek ▪ Miller Creek ▪ Sxʷtpqyen ▪ Target Range/Orchard Homes ▪ Northside/Rattlesnake
Wye Infrastructure Needs Assessment	November 2023	The Wye is an area that is expected to grow over the coming years. Out of the 3,400 acres in the area, 1,200 acres are undeveloped and planned for residential development. This residential development, at an average density of 12 units per acre, is expected to create between 10,000 to 15,000 new homes. Another 540 acres are undeveloped industrial land and another 240 are under-developed industrial land. With this immense growth, this plan identifies needed improvements to accommodate this new development.	▪ Highway 93 Trail ▪ Deschamps Lanes Shared Use Path ▪ Reserve to Wye I-90 Trail

Planning Document	Date Published	Overview of the Document	Key Projects from Studies
Missoula Annexation Policy	July 2023	The Annexation Policy provides a set of comprehensive policies and objectives needed to annex Missoula's Utilities Services Area as described in the City Growth Policy. The annexation will support growth in desirable locations and ensure adequate provision of sewer, water, and other public services. The annexation policies aim to promote walkable neighborhoods, infill, and dense development, and ensure that sufficient infrastructure is in place to support future development. The City of Missoula is prioritizing the annexation of the following areas which should be considered when developing Missoula's Project List: ▪ Utilities Services Area ▪ Annexation Area A ▪ Areas that contribute to the logical growth pattern of the City ▪ Properties that would fill in gaps left by previous annexations that created islands and other types of non-contiguous boundaries	▪ N/A

Planning Document	Date Published	Overview of the Document	Key Projects from Studies
Midtown Missoula Master Plan	June 2023	The Midtown neighborhood has been experiencing rapid growth over the years. Community members realized that without a vision to guide the continued development, there was great risk in being caught unprepared to accommodate all the planned growth. The Midtown Missoula Master Plan outlines the neighborhood's vision for growth and identifies improvements that enhance the neighborhood's character and accommodate that growth.	▪ Pedestrian and bicycle crossings at Schilling Street, McDonald Avenue, Mary Avenue, Anges Avenue, Fairview Avenue, South Avenue, Kent Avenue, Mount Avenue, Dore Lane, Paxson Street, Garfield Street, and Stephens Avenue ▪ Brooks Street/Russell Street/South Avenue intersection redesign ▪ Increase access between the Bitterroot Trail to other existing pedestrian and bicycle pathways ▪ Greenway network expansion ▪ Complete Streets implementation at Reserve Street, Brooks Street, South Avenue, Mount Avenue, 14th Street, Higgins Avenue, and Bancroft Street ▪ Pedestrian and bicycle safety measures along Russel Street, 14th Street, Mount Avenue, South Avenue, and Brooks Street ▪ Increase frequency of Mountain Line transit service in Midtown Missoula
Brooks Street BRT/TOD Planning Study	July 2021	The City of Missoula conducted a study to examine bus-rapid transit (BRT) on Brooks Street, running between downtown Missoula and southwest Missoula. In addition to examining the BRT service itself, the study identified pedestrian and bicycle improvements to improve access to the new service and increase safety. The BRT concept, along with the improvements identified in this plan, have been advanced as part of another study that is looking to further refine the concept for BRT.	▪ Brooks Street Bus Rapid Transit, including bicycle and pedestrian improvements

Planning Document	Date Published	Overview of the Document	Key Projects from Studies
Highway 200 Corridor Plan	2021	The Highway 200 Corridor Plan identified infrastructure improvements to increase safety and travel options along three segments of Highway 200 – East Broadway Segment (from Van Buren Street to I-90), East Missoula Segment (from I-90 to Brickyard Hill), and Sha-Ron/Marshall Segment (from Brickyard Hill to Tamarack Road). The lack of roadway infrastructure has created significant barriers for community members to travel in the area and has led to conflicts between pedestrians, bicyclists, and motorists. Improvements as part of this plan are partially funded.	▪ Shared-use path, on-street bike parking, roundabout, and pedestrian crossings on the East Broadway Segment ▪ Sidewalks, raised cycle tracks, and intersection alignment improvements on the East Missoula Segment ▪ Shared-use path and bus pullout on the Sha-Ron/Marshall Segment
Reserve Street Community Input Project	2021	The Reserve Street Community Input Project provided community-developed recommendations to improve travel on the Reserve Street corridor. Many community members recognized Reserve Street as an important corridor in Missoula with its abundance of retail areas. However, community members often avoid Reserve Street because they feel unsafe walking and biking due to high vehicular travel volumes.	▪ Signal timing optimization at Reserve Street and Brooks Street ▪ Transit service from the Community Hospital to downtown ▪ Active transportation infrastructure that includes wider sidewalks, improved pedestrian signals, curb extensions, medians, and protected bicycle lanes

COMMUNITY SURVEYS

This section summarizes the results of two recent community surveys that were administered in 2023. These surveys offer insight into who is using transit, satisfaction with transportation in Missoula, and potential opportunities for improvement, among other things.

Mountain Line 2023 Passenger Survey

A survey of Mountain Line passengers was commissioned by MUTD and was administered by University of Montana's Bureau of Business and Economic Research (BBER) during the period of May 8th through July 5th, 2023. This survey provides MUTD with valuable information on customer sentiment and potential priorities for improving service. The survey was administered by BBER surveyors while riding 12 MUTD bus routes. The survey had 456 responses. The following are some key takeaways.

- Passengers enjoy MUTD services:
  - 76% of passengers reported that they are **very likely to recommend MUTD** to others, and an additional 15% said they are somewhat likely.
  - 44% of passengers said that their opinion of MUTD has **improved over the past two years**. Only 5% said their opinion had worsened over the past two years. 51% said their opinion stayed the same.
- Passengers' top three reasons to use MUTD over other transportation modes were:
  - MUTD is better for the **environment** (83% of responding riders);
  - MUTD is **cheaper** than other modes (73%);
  - MUTD is more **relaxing** than driving a car (58%).
- Riders expressed **frequency** as the largest opportunity for service improvement: passengers most frequently said (31% on weekdays and 42% on weekends) that running buses more often would be the main reason for increasing ridership.
- Passengers plan trips with apps:
  - The **Transit App** was the most frequently used trip planning tool, used by 34% of responding passengers.
  - Of the three most used trip planning tools (Transit App, route maps and schedules, and Google Maps), riders expressed the most satisfaction with **Google Maps**. 74% of Google Maps users said they were extremely or very satisfied with the app.
- Riders use MUTD services for the following reasons:

  - Three-quarters of MUTD passengers used the bus on the day they were surveyed for either **personal errands** (41%) or commuting to or from **work** (34%).
  - The top three industries that employed MUTD passengers were:
    - Colleges, universities, professional schools
    - Full service restaurants
    - General medical and surgical hospitals

2023 Missoula Area Transportation Survey

The Missoula Area Transportation Survey was a statistically valid survey of the MPO area. It was conducted by the University of Montana's BBER between November 8, 2023 and February 11, 2024. The 2023 Missoula Area Transportation Survey examines:

- Perceptions of the local transportation system
- Priorities for investments in the system
- Frequency of using certain modes of transportation
- Opinions about electric vehicles, e-scooters, and passenger rail services

Respondents were randomly selected from a database of residential addresses. Altogether, 565 responses were collected for this survey. Key findings from the survey for each topic include:

- About **58% of survey respondents rated the transportation system as good or better**, an 11% decrease from the 2019 survey.
- The **top three transportation investments** that survey respondents wanted Missoula to focus on were:
  - Road maintenance
  - Long distance passenger rail, commuter, or light rail
  - Parking
- About **48% of survey respondents** said that **traffic congestion in Missoula had a very large or somewhat large impact** on them, a 12% increase from 2019.
- Missoula workers spent an **average of 16 minutes to travel to work** which is about the same amount of time spent in 2019 but less than the national average of 27 minutes.
- Most survey participants **(80%) would support the future use of passenger rail service**.

- Both biking and walking decreased to 6% and 3% in 2023, a 3% and 1% change, respectively, compared to 2019. Participants indicated that **weather was the top barrier** for them when biking and walking.[1]
- More participants in 2023 **(44%) expressed support for the use of e-scooters** compared to respondents in 2019 (33%).
- The **majority of participants (66%) noted availability of transit access near their home**. Given the coverage of Mountain Line, it is not surprising more respondents in the City of Missoula than the county responded that they had transit access at home (82% vs. 24%).
- The **top three barriers for using transit** included: bus not going **where it is needed (31%)**, **work schedule/family obligations (23%)**, and bus not running **when it is needed (21%)**.
- The following provides a snapshot of participants who would consider purchasing an electric vehicle as their next vehicle:
  - 39% of participants in the Missoula area
  - 47% of participants who live in the City of Missoula
  - 20% of participants in Missoula County

[1] Note, the two surveys were conducted during different times of the year which may have influenced these results (2019 survey was conducted in summer/fall, 2023 survey was conducted in the fall/winter).

COMPLETED/ONGOING CAPTIAL PROJECTS

New transportation projects are continuously being built to enhance mobility for residents. Creating an inventory of completed and planned projects can help the City of Missoula, Missoula County, Montana Department of Transportation (MDT), and Missoula Urban Transportation District (MUTD) identify new transportation projects needed for other areas of Missoula. Figure 2-2 provides an inventory of current projects and those completed since the previous LRTP in the Missoula area.

Figure 2-2 Completed/Ongoing Capital Projects

Project ID	Project Name	Status	2020 Estimated Cost
128	Bitterroot River Crossing (South Ave Bridge - Maclay Bridge)	Planned, Funded	$18,488,500
130	BUILD Grant Roads - Wye/Mullan Road Plan Collector Routes (roadways)	Partially Completed	$29,788,710
182	Eaton Street Sidewalk/Complete Streets Improvements	Partially Completed	$1,500,000
47	Fort Missoula to Maclay Shared-Use Path and Bridge	Planned, Funded	$2,200,000
41	Ivy Street/Franklin Street Neighborhood Greenway	Partially Completed	$1,085,000
106	Mount Avenue/South 14th Avenue Bike Lane	Partially Completed	$10,066
79	Russell Street Bike Lanes	Completed	$3,306
127	Russell Street Reconstruction	Partially Completed	$47,200,000
UPN 9896	Russell Street Lighting	Planned, Funded	$558,000
183	Turner St/Worden Ave/N 5th Complete Street	Partially Completed	$1,000,000
55	Westside Area Mobility Enhancements	Partially Completed	$1,800,000

Source: Missoula MPO, 2024

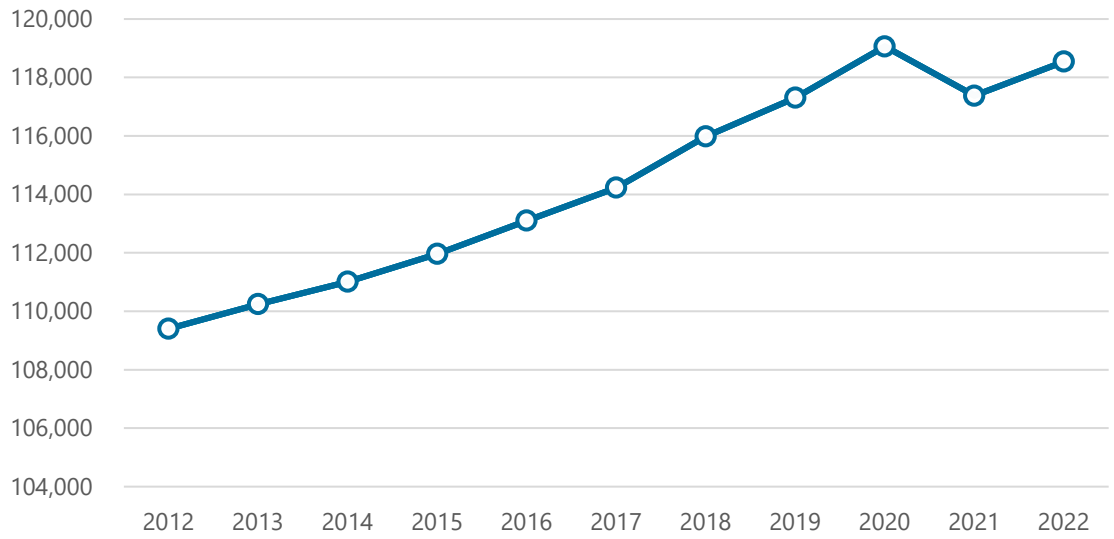
POPULATION AND EMPLOYMENT GROWTH AND TRENDS

The data below represent trends of Missoula's urbanized area, referred to going forward as the Missoula area. The Missoula area has experienced rapid growth over the past decade, with an annual growth rate of 0.81%. As population and employment opportunities continue to grow in the region, high-quality transportation infrastructure and services should be a priority.

Population

Over the past decade, the Missoula area's population increased by 8%, from 109,402 residents in 2012 to 118,541 residents in 2022 (Figure 2-3). There was a dip between 2020 and 2021 which was likely due to the COVID-19 pandemic.

Figure 2-3 Population Growth in Missoula County

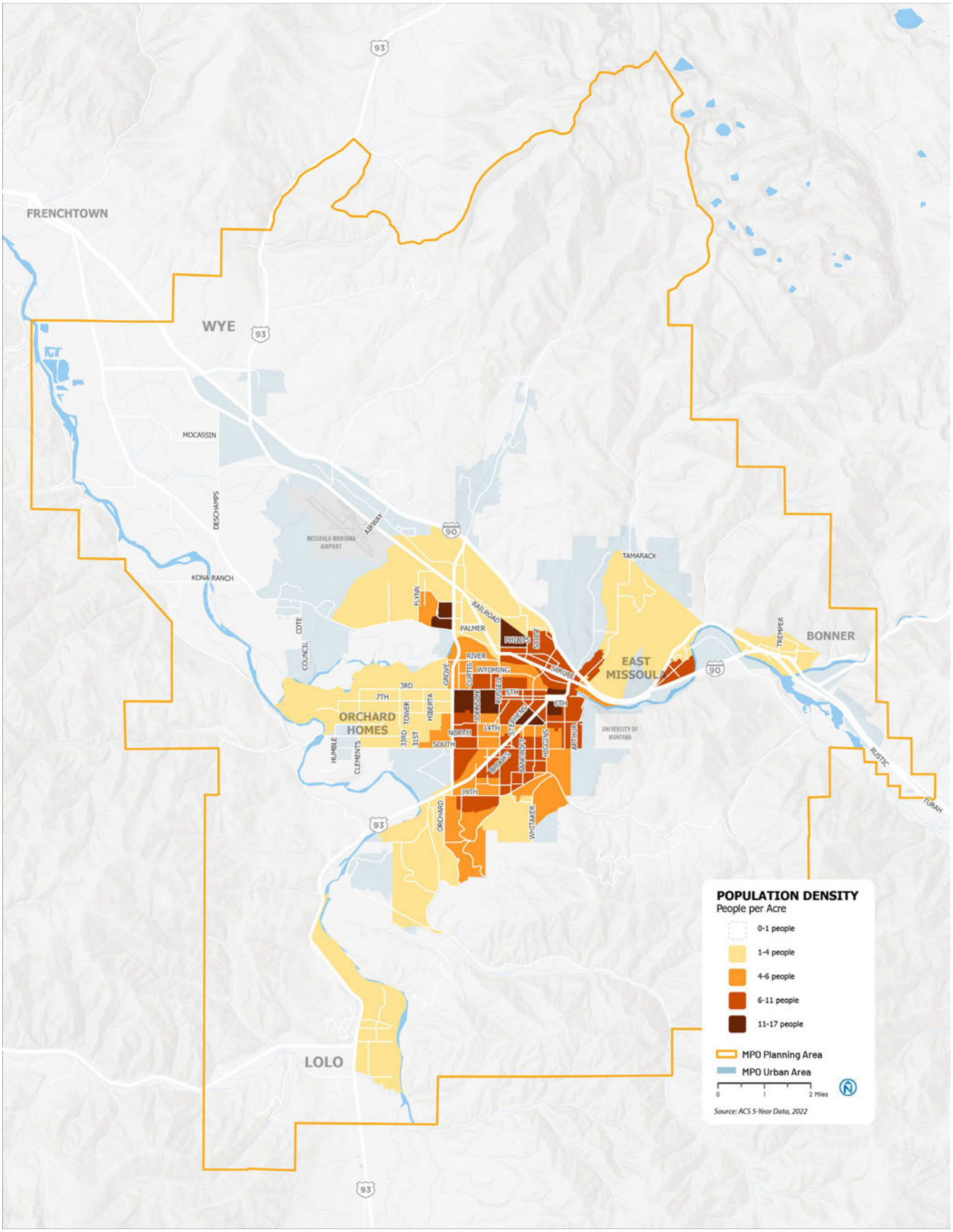


The Missoula Planning Area's population as of 2022 is estimated to be 103,012 and is projected to be 159,430 in 2050.

Source: American Community Survey (ACS) 5-Year Estimates, 2022

Areas of high population density are clustered in downtown Missoula, neighborhoods surrounding the University of Montana, and neighborhoods along Mullan Road, with about 11 to 17 people per acre. Areas with lower population density are in more rural areas of Orchard Homes and East Missoula, with about 1 to 4 people per acre (Figure 2-4). The City of Missoula has set the vision to promote infill growth in the "Our Missoula" City Growth Policy.

Figure 2-4 Population Density

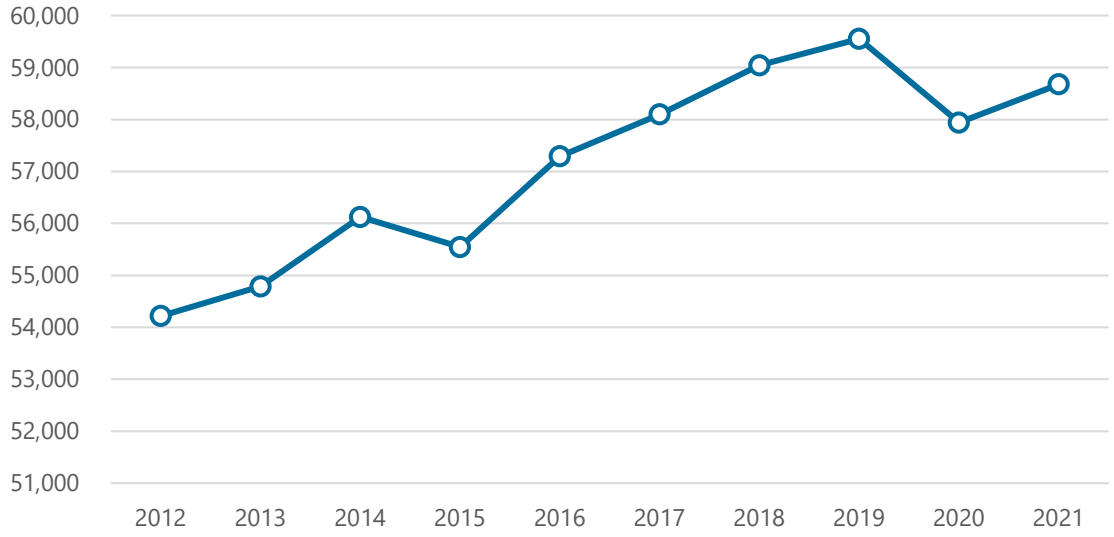


Source: ACS 5-Year Estimates, 2022

Employment

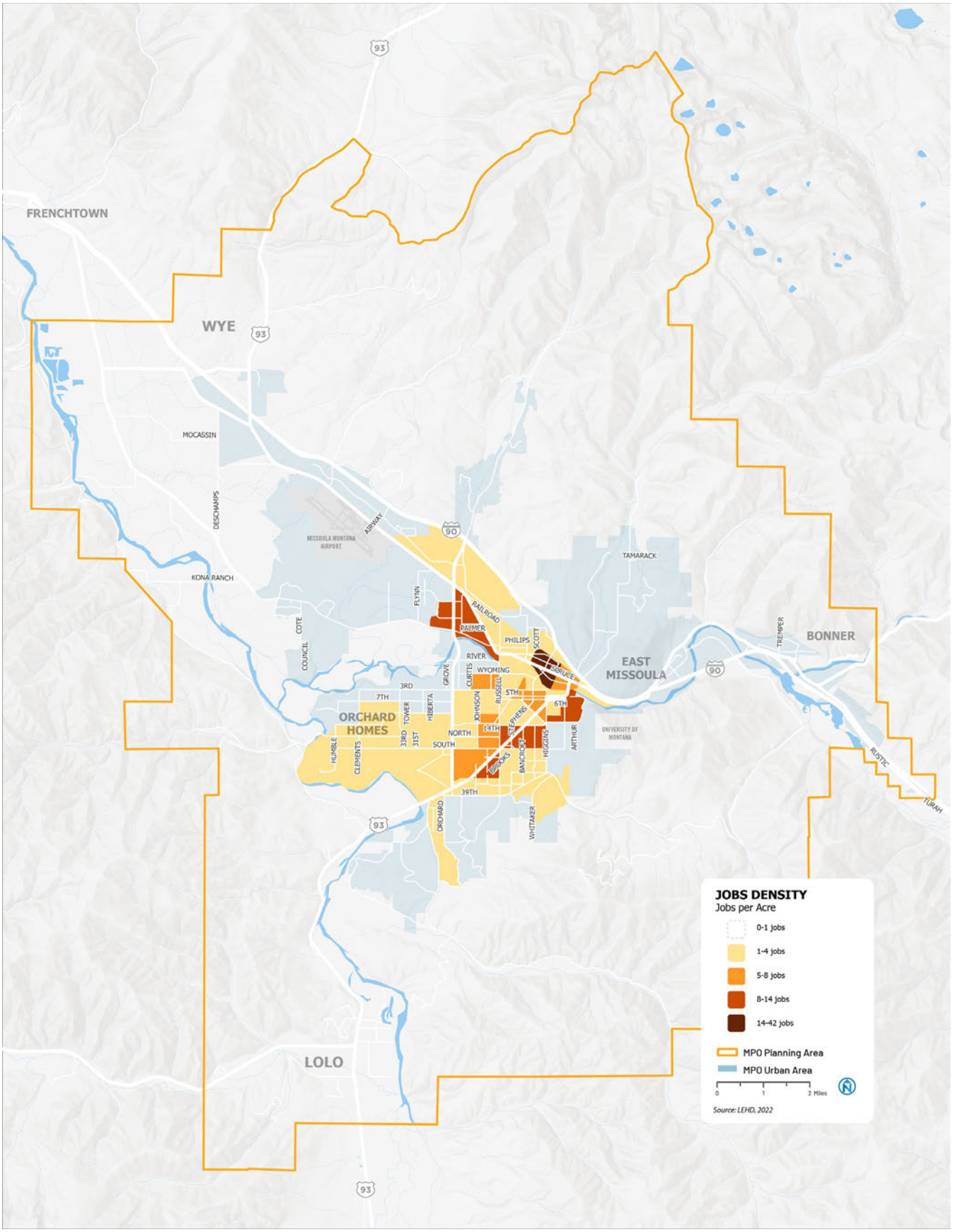
Jobs in the Missoula area increased by 8% in the past decade, with a total of 58,675 jobs in 2022. The number of jobs slightly decreased in 2020, likely due to the COVID-19 pandemic (Figure 2-5). Employment hubs are concentrated in central Missoula. The industries with the most jobs are health care and retail trade, which account for about one-third of all jobs in the region. Other jobs (30%) include agriculture, forestry, fishing, and hunting, public administration, manufacturing, finance and insurance, and wholesale trade (Figure 2-7). As the region continues to grow, transportation options need to be considered to connect people from where they live to jobs in the community.

Figure 2-5 Jobs Growth



Source: Longitudinal Employer-Household Dynamics (LEHD), 2022

Figure 2-6 Job Density



Source: LEHD, 2022

Figure 2-7 Major Employment Sectors in Missoula

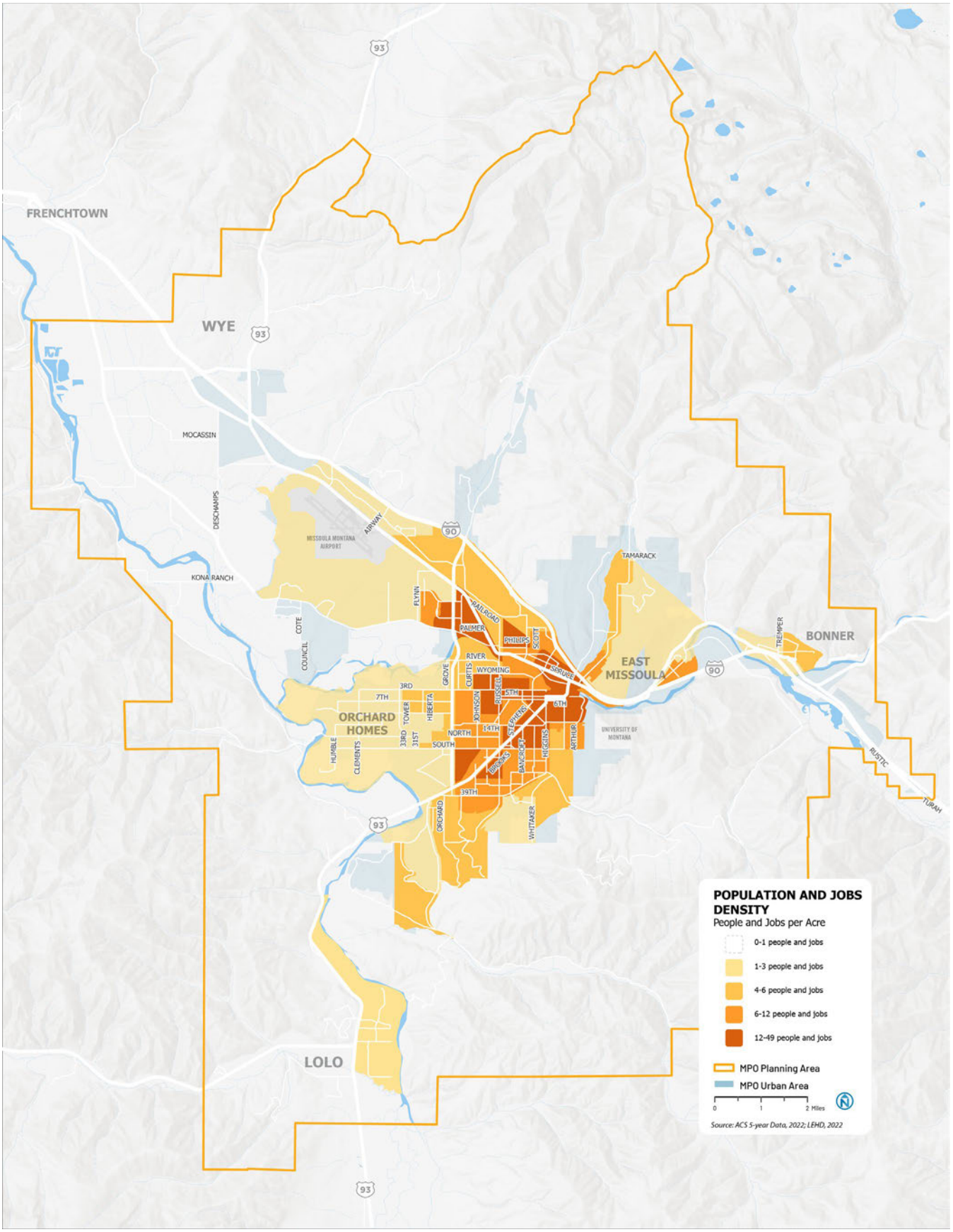
Employment Sector	% of Total Employment Share
Health Care and Social Assistance	18%
Retail Trade	14%
Accommodation and Food Services	9%
Educational Services	9%
Professional, Scientific, and Technical Services	7%
Construction	6%
Public Administration	6%
Other	30%

Source: LEHD, 2022

Population and Employment

Combining population and employment data can better highlight areas that are anticipated to be more supportive of transit service. In locations where population and employment densities are higher, transportation investments benefit more people, and transit service is more productive. As shown in Figure 2-8, the areas with the highest combined population and employment density are concentrated in the urban core and already have access to transit service today.

Figure 2-8 Population and Jobs Density



Source: ACS 5-Year Estimates, 2022 and LEHD, 2022

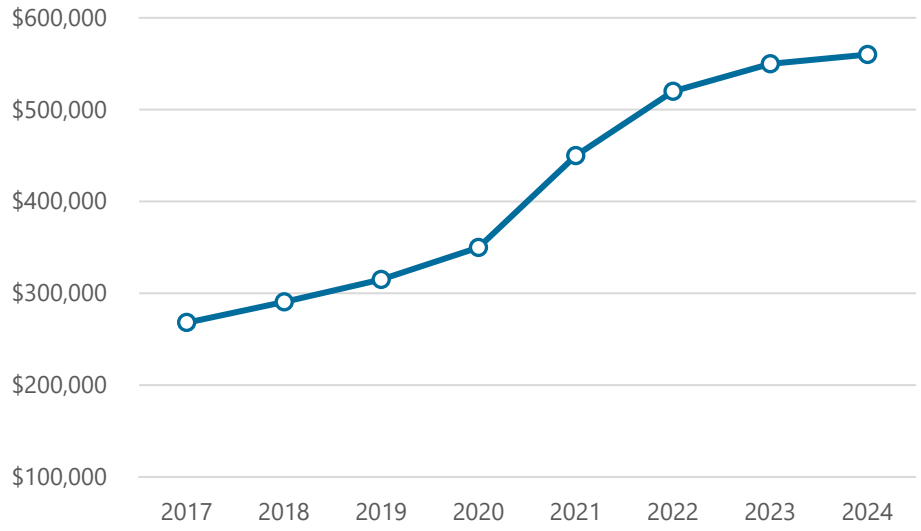
Changes in Affordability and Equity Priority Indicators

Like many regions in the United States, housing costs are rising faster in the Missoula area than wages, making it difficult for many residents to find housing they can afford. Therefore, affordable transportation options are necessary to connect residents with jobs, schools, various services, and recreational opportunities.

Based on ACS 5-Year estimates for 2022, half of workers have an annual income of less than $40,000. As of 2022, the official poverty rate, as defined by Bureau of Labor Statistics, is $15,225 for an individual, and just over 11% of the United States population reported living below the poverty line in 2022. In the City of Missoula, 14.6% of residents live below the poverty line compared to only 9.2% of Missoula County residents. Additionally, the median home sale price has doubled since 2017, posing a challenge for residents to live comfortably in the Missoula area (Figure 2-9). About 60% of Missoula area residents own and about 40% rent; the percentage of renters and owners has not changed since it was reviewed in the previous LRTP. This percentage may change in the future as housing prices continue to rise and more people choose to rent due to the high price to purchase a home (Figure 2-10).

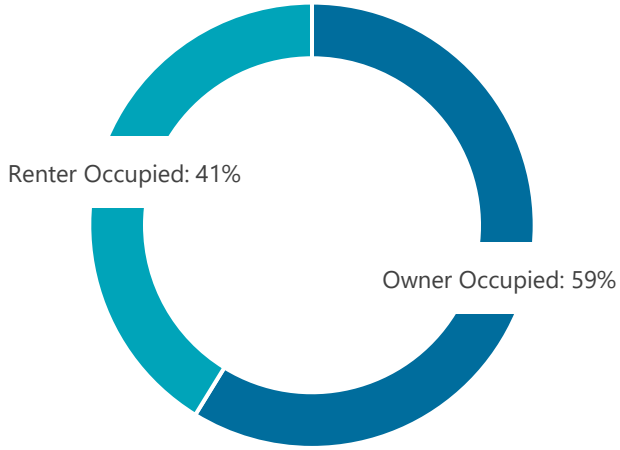
The City of Missoula recently completed an Equity in Land Use report that addresses these affordability issues in greater detail. The project website includes links to the final report and an executive summary.

Figure 2-9 Median Home Sale Price, 2017-2024



Source: Montana Regional MLS, 2024

Figure 2-10 Renter-Occupied vs. Owner-Occupied Housing Units



Source: ACS 5-Year Estimates, 2022

EQUITY CONSIDERATIONS

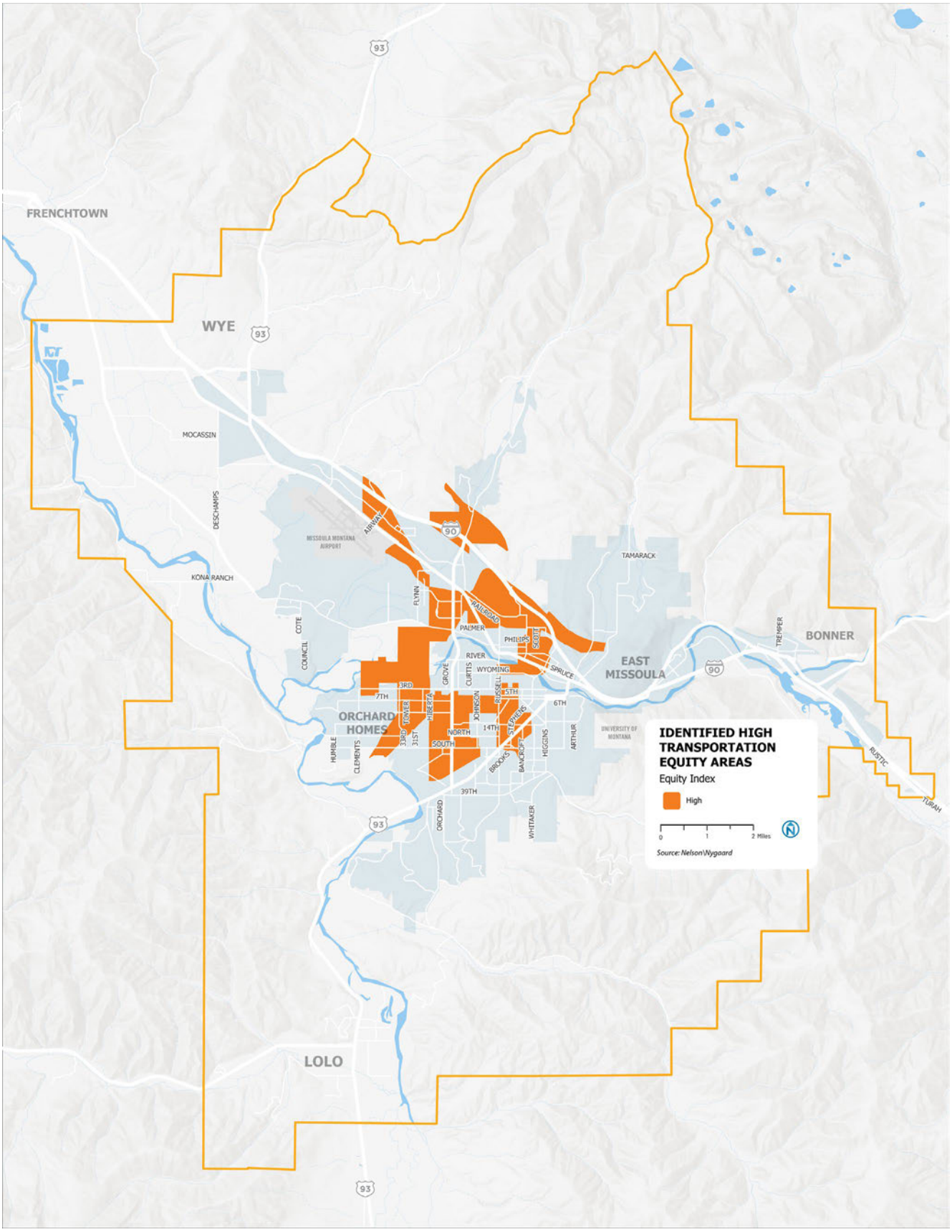
In recent years, the topic of transportation equity has been discussed more frequently and with increasing levels of importance. At its core, transportation equity seeks to prioritize resources to those that need it most. Nelson\Nygaard conducted an analysis to identify potential transportation equity areas within the greater Missoula area.

Using the latest Census block group data, three variables with strong indicators for high transportation equity needs were examined. These variables were:

- Households with annual income of $25,000 and below (Low-Income)
- Non-white population (Black, Indigenous, People of Color 'BIPOC' Population)
- Zero-vehicle households

Using the three variables, the percentage of households/population in each block group was computed. From there, each variable for each block group was given a score from 0 to 10 based on the distribution of percentages. The three scores were then added together to get a final, combined equity score. The results are shown in Figure 2-11. The darker colors indicate areas with a higher equity need.

Figure 2-11 Identified Transportation Equity Areas



Source: Nelson/Nygaard

TRANSIT PROPENSITY

Using select demographic, socioeconomic, and employment data can help determine the overall transit need for a given area. Areas of higher propensity, or demand, are more likely to generate ridership and support transit service that is provided.

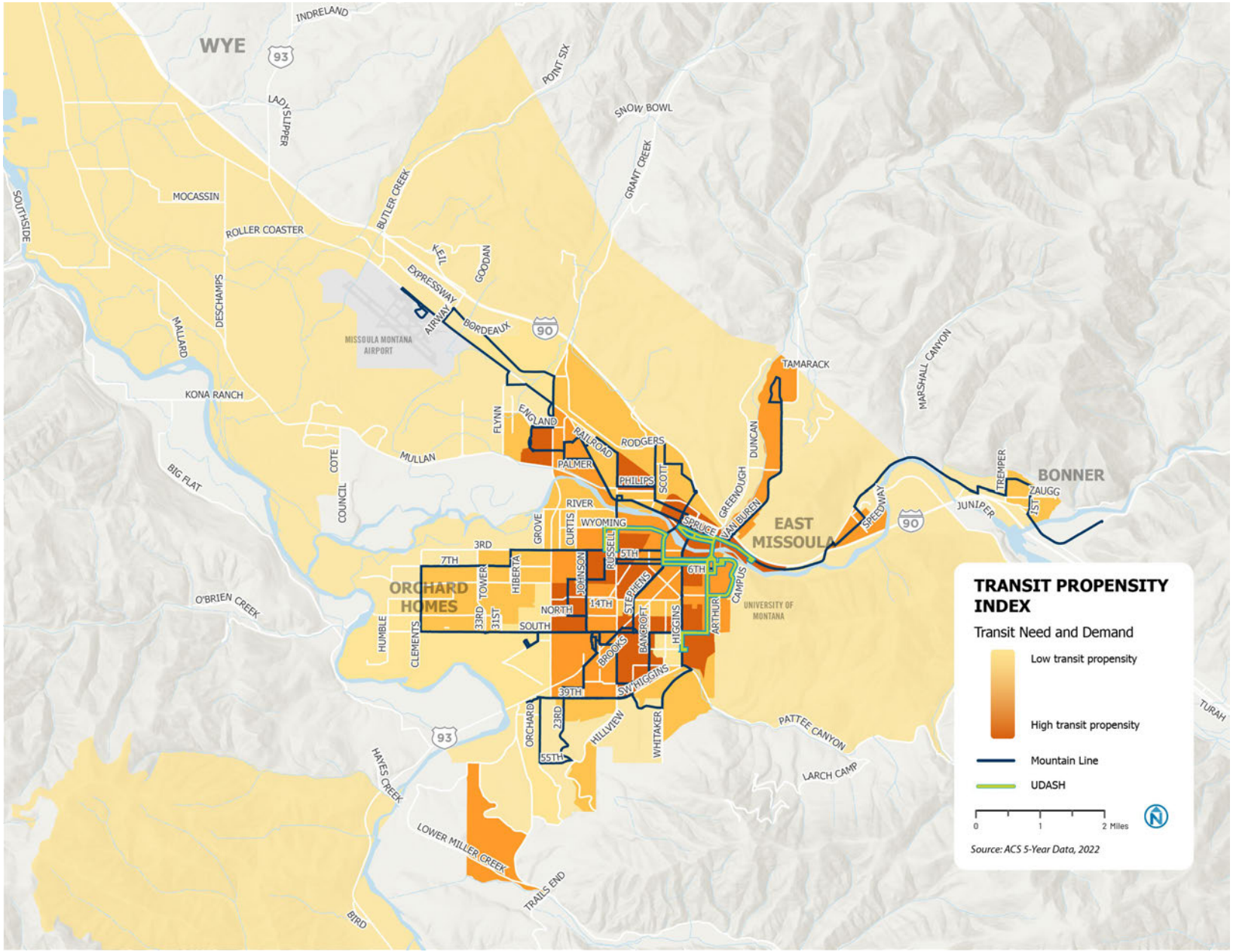
To assess transit propensity, the following demographic and socio-economic factors were used as individuals from these groups are more likely to use transit:

- Young adults between the ages of 16 to 24
- Non-white individuals
- Individuals born outside of the U.S.
- Low-income individuals defined as earning less than 150% of the federal poverty level
- Households without a vehicle
- Households that rent their homes

In the greater Missoula area, using Census Journey to Work data, all six of these variables were associated with having a higher correlation of using transit than the overall population. A composite transit propensity score was computed for each block group by summing up the individual percentages of population or households in each block group that met the given criteria. A higher composite score indicates a greater transit propensity.

As shown in Figure 2-12, downtown and northwest Missoula are areas with the highest propensity to use transit. These areas already have MUTD fixed-route services; however, improving transit service to these areas (e.g., greater frequency, longer spans of service) can continue to improve mobility for these individuals.

Figure 2-12 Transit Propensity



Source: ACS 5-Year Estimates, 2022

KEY FINDINGS

- Population in Missoula **has increased by 8%** in the past decade except for a dip in 2020 and 2021, most likely due to the COVID-19 pandemic. Historically, population grew by 0.81% annually.
- **Population density is concentrated in downtown and neighborhoods surrounding the University of Montana and Mullan Road.** The City of Missoula is promoting infill growth to meet the needs of the growing population.
- Jobs **increased by 8% in the past decade** except for a dip in 2021, most likely due to the COVID-19 pandemic. Employment is concentrated in central Missoula.
- **MUTD fixed-route services exist in areas with high population density, employment density, and transit propensity**. It is crucial for Missoula's agencies to continuously improve transportation to meet the travel needs of community members in these areas and other areas that are expected to grow in population.
- Most passengers reported that they are **very likely to recommend MUTD** to others, and almost half of passengers said that their opinion of MUTD has **improved over the past two years**.
- Top reasons riders use MUTD over other transportation modes include: being better for the **environment**, being **less expensive**, and being more **relaxing**.
- MUTD riders have expressed a **desire for more frequent weekday and weekend service**.
- Riders use MUTD services for purposes including: **medical, work, school, and personal errands.**
- About 60% of survey respondents rated the **transportation system as good or higher**.
- Weather was indicated as the **top barrier** for riding a bicycle or walking in Missoula.
- Most survey participants would **support future passenger rail service**.
- Biking and walking **decreased** in the past six years.[2]
- The average commute time (16 minutes) **has not changed** in Missoula and remains lower than the national average of 27 minutes.

[2] [2] Note, the two surveys that support this finding were conducted during different times of the year which may have influenced these results (2019 survey was conducted in summer/fall, 2023 survey was conducted in the fall/winter).

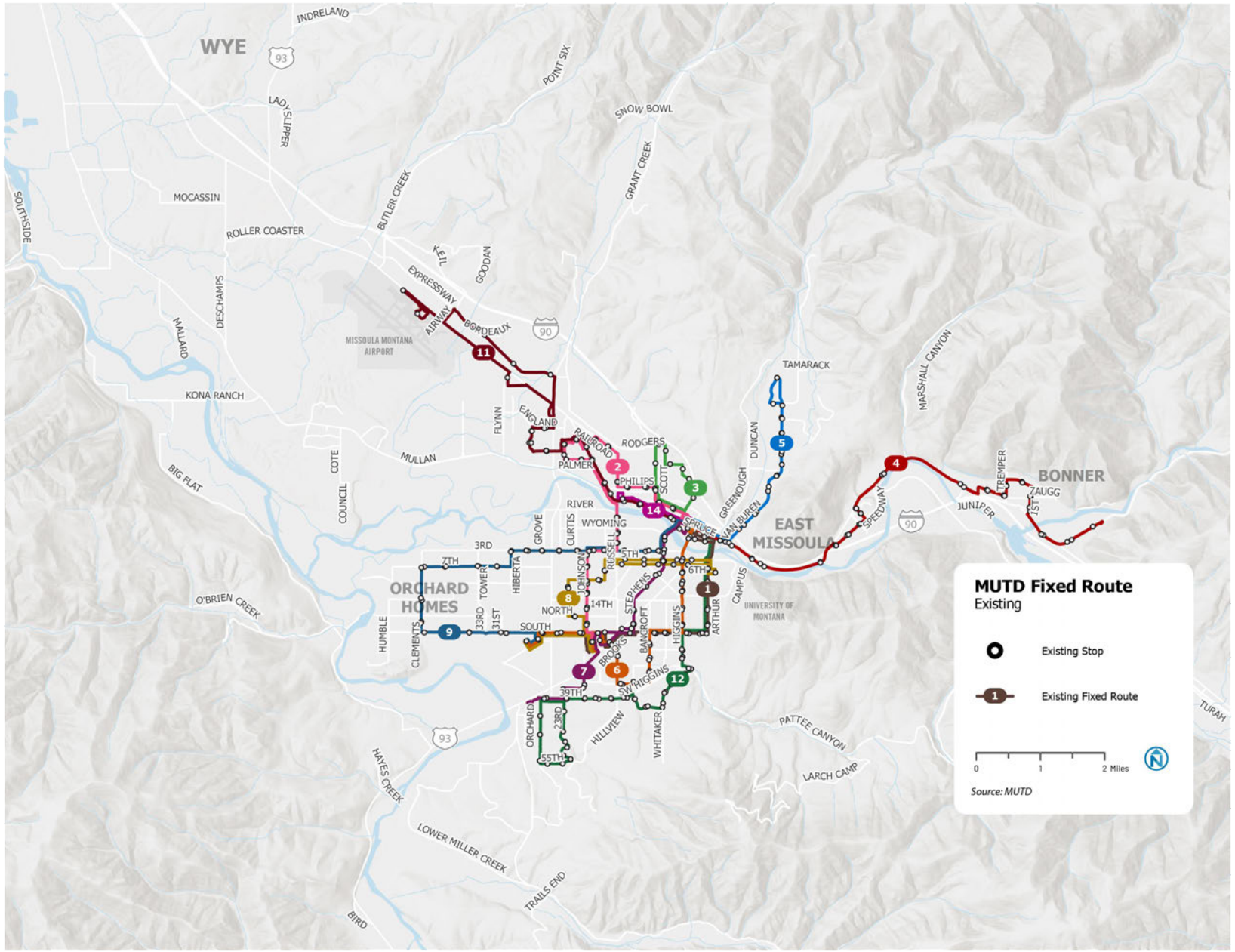
3 TRANSIT CONDITIONS

This chapter provides an overview of transit services in Missoula, including those provided by Missoula Urban Transportation District (MUTD) and University of Montana's UDASH.

MOUNTAIN LINE CURRENT SERVICES

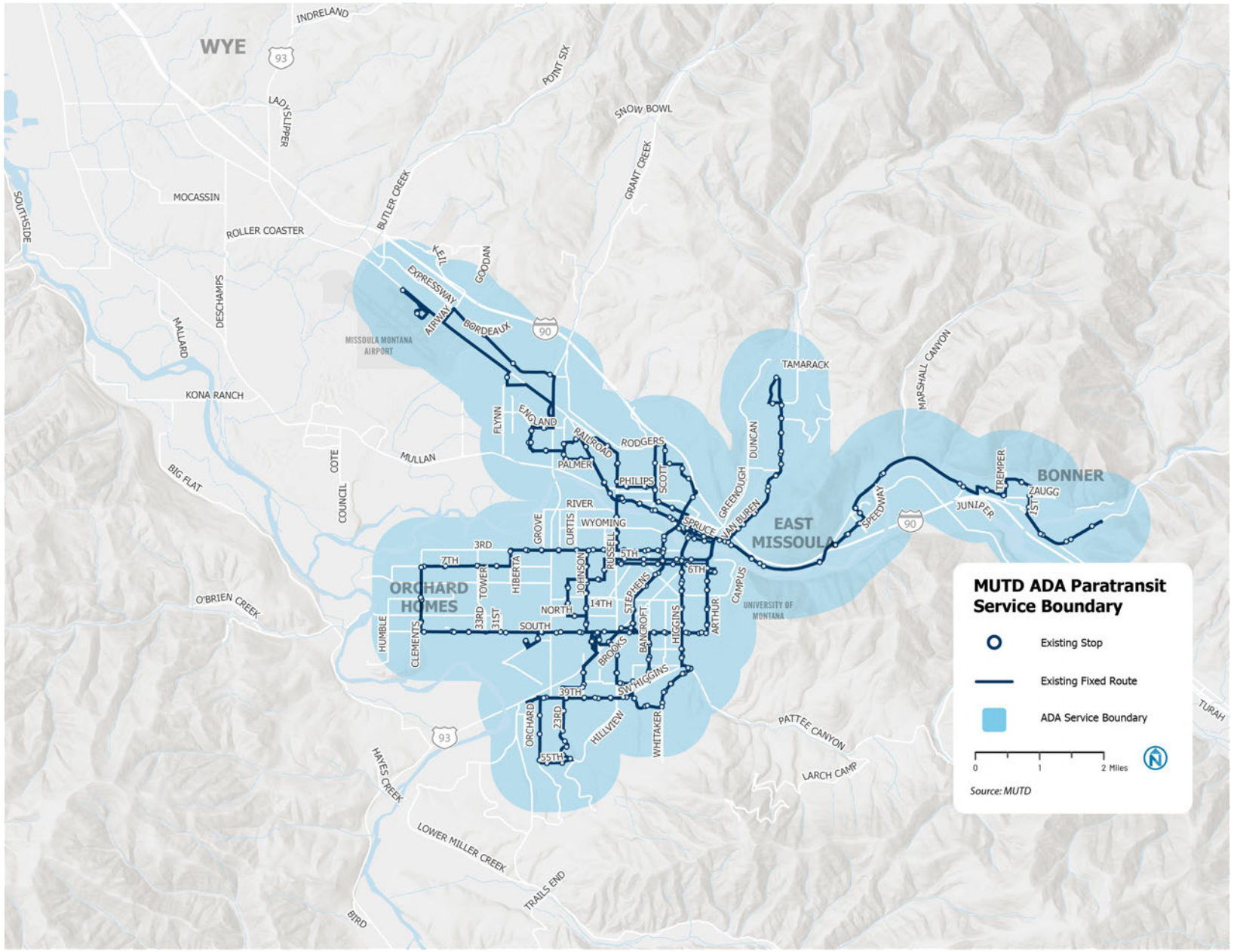
MUTD, also known as Mountain Line, is the primary transit provider in Missoula, operating zero-fare fixed-route bus and paratransit service. Figure 3-1 illustrates the fixed-route network. Figure 3-2 illustrates the paratransit service area, which is defined as a ¾ mile buffer around the fixed route network.

Figure 3-1 MUTD Fixed-Route



Source: MUTD

Figure 3-2 MUTD Paratransit Service Area



Source: MUTD

OTHER REGIONAL PROVIDERS

UDASH

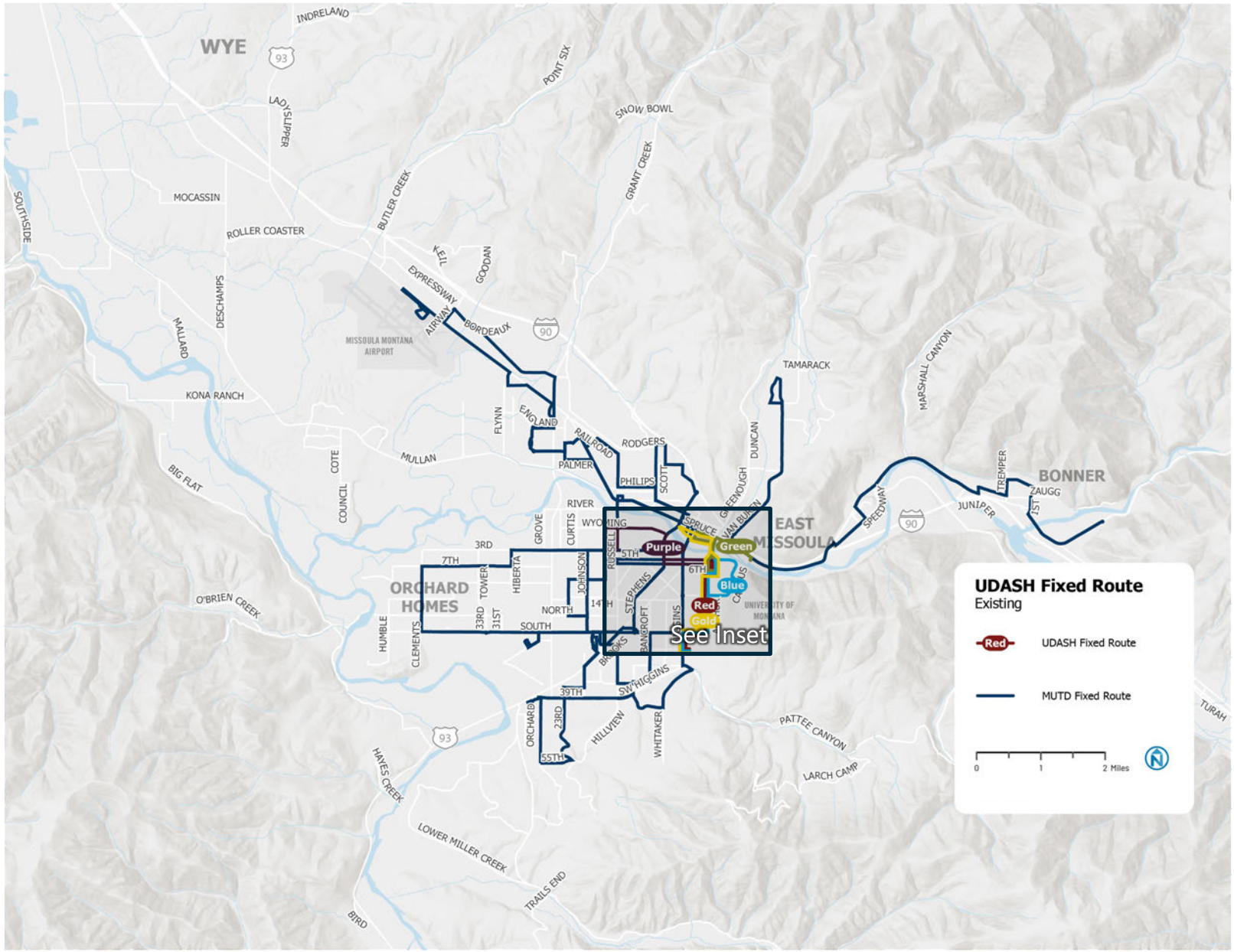
The University of Montana's (UM) UDASH is the transportation service for the University.

Figure 3-3 illustrates UDASH fixed-route service. The University operates five bus routes that connect the University of Montana's south and main campuses and residential areas. All five routes operate Monday to Friday, when UM is in session. The University also operates several special event shuttles for commencement and football games.

The Purple Line operates between UM Transit Hub and Caitlyn Street / Wyoming Street via 5th Street, 6th Street, and Cregg Lane. Service operates every 30 minutes from 7:15 a.m. to 6:00 p.m. The Green Line operates between UM Transit Hub, Missoula College (River Campus), and downtown near ROAM Student Living via Broadway Street, Main Street, and Front Street. The service operates every 20 minutes from 7:30 a.m. to 6:10 p.m. The Red Line operates between UM Transit Hub and Lewis and Clark Park and Ride via Arthur Avenue and S Avenue. The service operates every 20 minutes from 7:15 a.m. to 8:30 p.m. The Blue Line operates between UM Transit Hub and Lewis and Clark Park and Ride via Campus Drive, Arthur Avenue and S Avenue. The service operates every 30 minutes from 7:00 a.m. to 8:50 p.m. The Gold line operates between the Transit Hub, Downtown Missoula, and Lewis & Clark. The service operates every 30 minutes from 8:30 p.m. to 10:18 p.m. from Monday to Thursday and to 12:48 a.m. on Fridays.

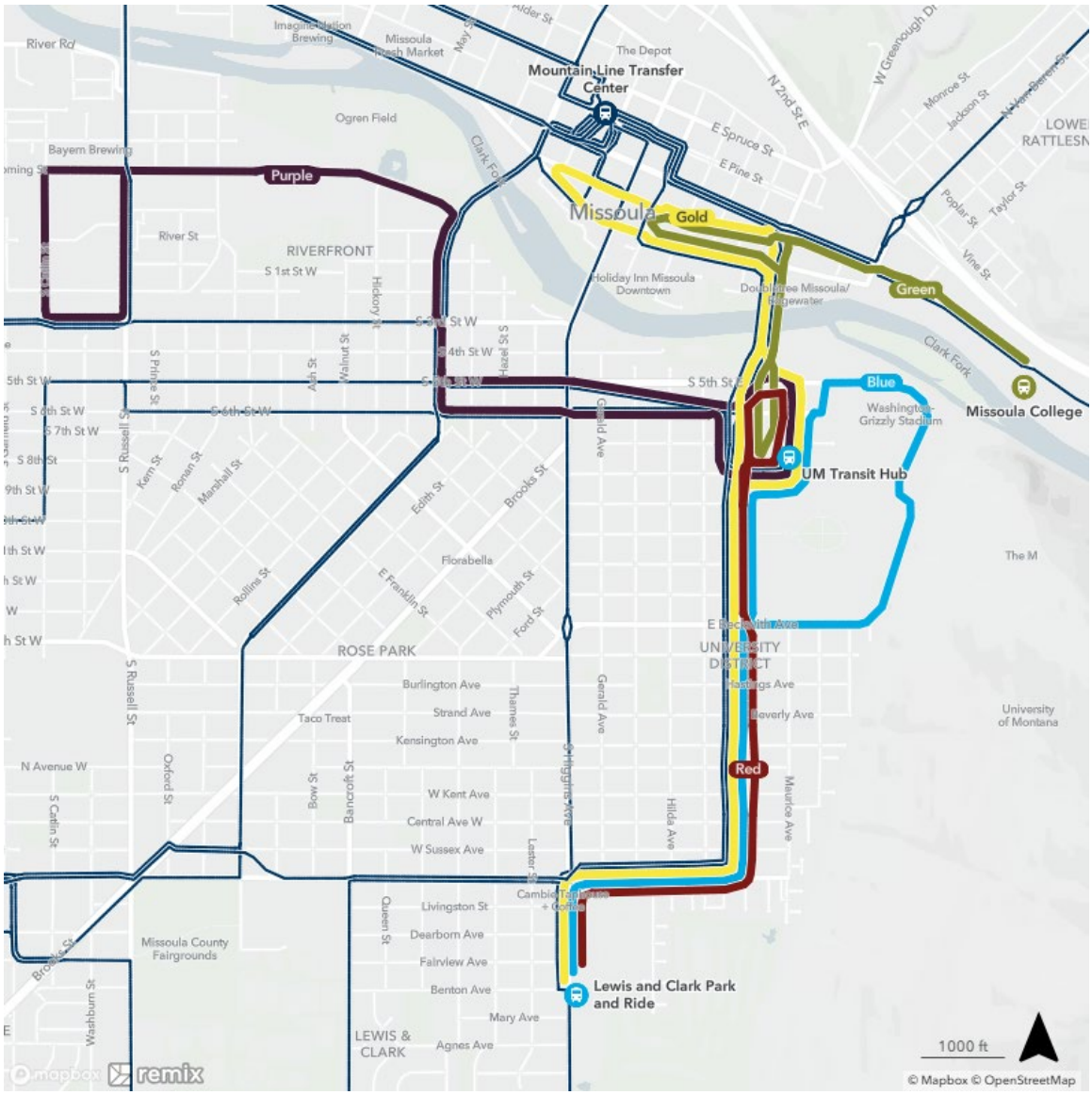
There are several corridors where UDASH service is duplicative with MUTD service. The Blue and Red Lines duplicate Routes 1 and 12 on Arthur Avenue. The Green Line duplicates Route 4 on Broadway Street. The Purple Line duplicates with Route 8 on 5th Street and 6th Street.

Figure 3-3 UDASH Fixed-Route



Source: University of Montana, 2023

Figure 3-4 UDASH Fixed-Route Inset



Source: University of Montana, 2023

FIXED ROUTE

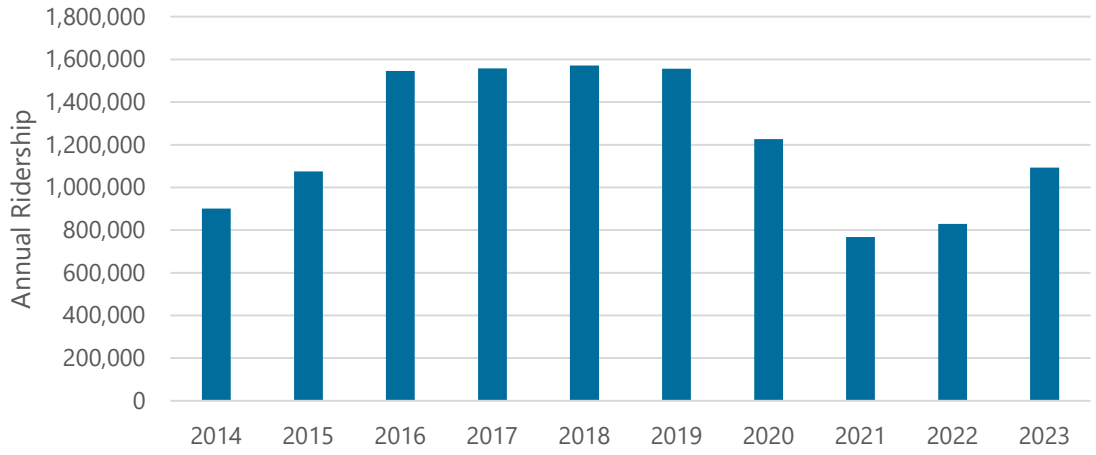
MUTD currently operates 13 fixed routes in its network (including one seasonal historic trolley route). This section describes MUTD's fixed-route service in greater detail, including historical trends and route-level analysis of service span and frequency, ridership, productivity, and on-time performance. It also includes an overview of existing transit facilities, bus stops and amenities, and geographic coverage. The purpose of this analysis is to understand the baseline level of service upon which to build for future recommendations.

Historical Trends

Providing a historical context of MUTD's fixed-route service is important to set the stage for where the agency is today.

As seen in Figure 3-5, ridership on MUTD's fixed-route service peaked during 2016 to 2019 at slightly less than 1.6 million trips. Like many agencies, MUTD experienced a drop in ridership due to the COVID-19 pandemic. Ridership has not fully recovered, with MUTD's 2023 annual ridership at roughly 70% of 2019 ridership.

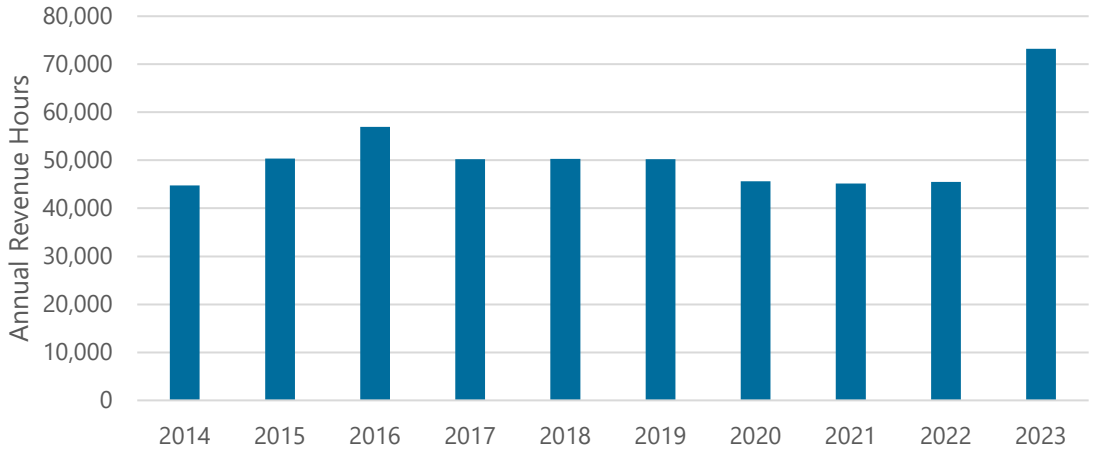
Figure 3-5 Historical Fixed-Route Ridership



Source: MUTD, 2023

Revenue hours is the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip. As seen in Figure 3-6, revenue hours had been generally steady except for a small decrease in 2020 to 2022. Revenue hours in FY 2023 increased with the implementation of various service improvements in July 2022, including introduction of new Sunday service, longer Saturday service, and more weekday service. Weekday service enhancements included earlier and later service as well as all-day service on Routes 4 and 11.

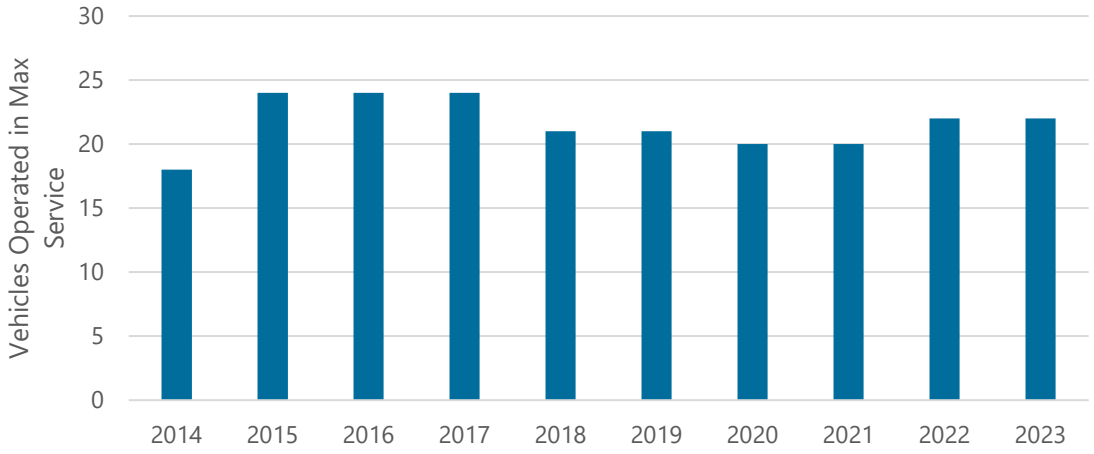
Figure 3-6 Historical Fixed-Route Revenue Hours



Source: MUTD, 2023

Vehicles operated in max service is the maximum number of vehicles needed at a single time to provide peak service. As seen in Figure 3-7, vehicles operated in max service peaked in 2015 to 2017 at 24 vehicles. Notably, the service increases implemented in July 2022 did not require an increase in the number of vehicles operated in max service in 2023.

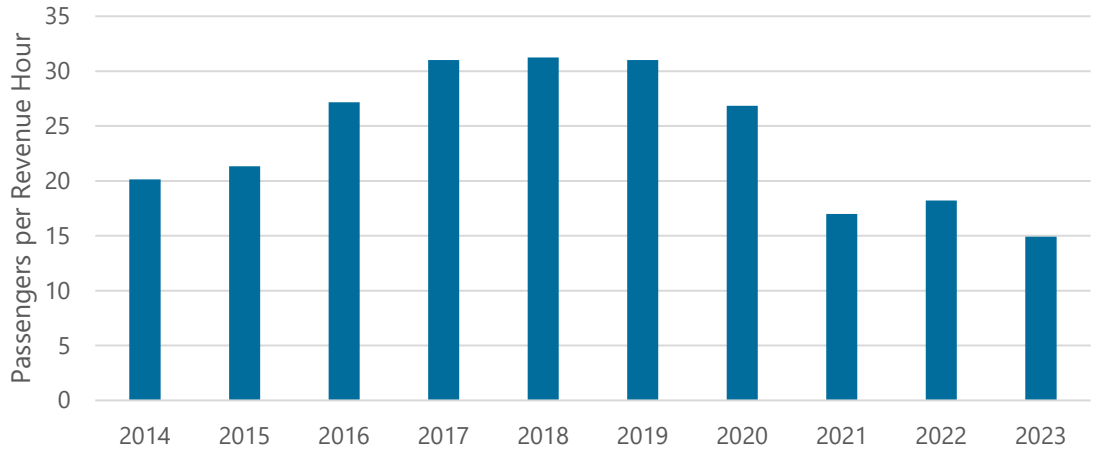
Figure 3-7 Historical Fixed-Route Vehicles Operated in Max Service



Source: MUTD, 2023

The productivity of service is typically measured in terms of passengers per revenue hour. Service productivity (Figure 3-8) peaked in 2017 to 2019 and is currently at a ten year low of about 15 passengers per revenue hour. Low productivity in 2023 is likely due to the large service expansion, particularly into new time periods (Sunday and early morning/late evening service). While this new service no doubt improves mobility within the community, more time is needed for ridership to fully mature.

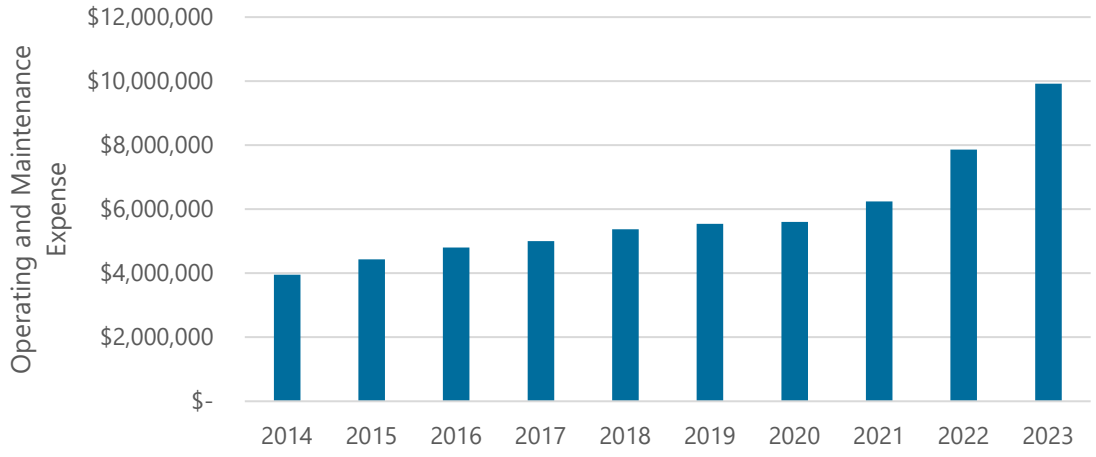
Figure 3-8 Historical Fixed-Route Productivity



Source: MUTD, 2023

Figure 3-9 shows the annual operating and maintenance (O&M) costs for the fixed-route system, not adjusted for inflation. Prior to the pandemic, costs rose an average of 6% per year. Between 2021 and 2023, costs increased by an average of 20% per year.

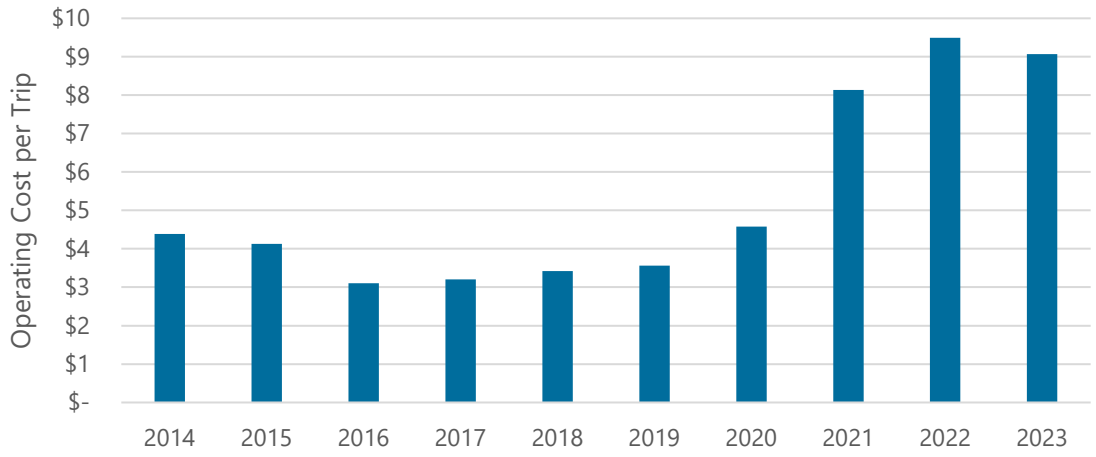
Figure 3-9 Historical Fixed-Route Operating and Maintenance Expense



Source: MUTD, 2023

Figure 3-10 normalizes O&M costs by number of passengers, or trips. It shows that the cost per trip hovered around $3.77 between 2014 and 2020. Due to COVID-19 related ridership declines and higher operating costs, the cost per trip increased to an average of $8.90 between 2021 and 2023, a 136% increase.

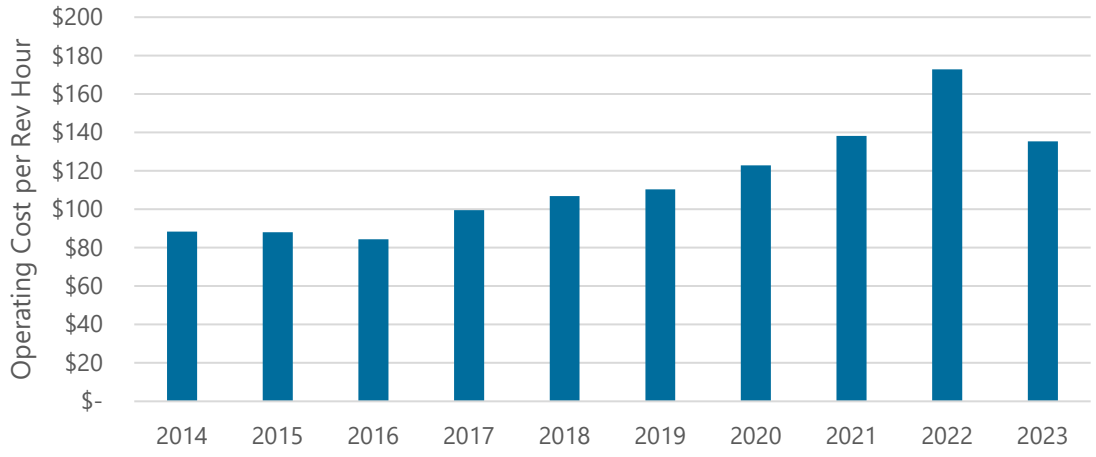
Figure 3-10 Historical Fixed-Route Cost per Trip



Source: MUTD, 2023

Figure 3-11 normalizes O&M costs by revenue hours. Between 2014 and 2023, cost per revenue hour increased by an average of 6% per year. 2022 saw a significant increase of 25% from the previous year.

Figure 3-11 Historical Fixed-Route Cost per Revenue Hour



Source: MUTD, 2023

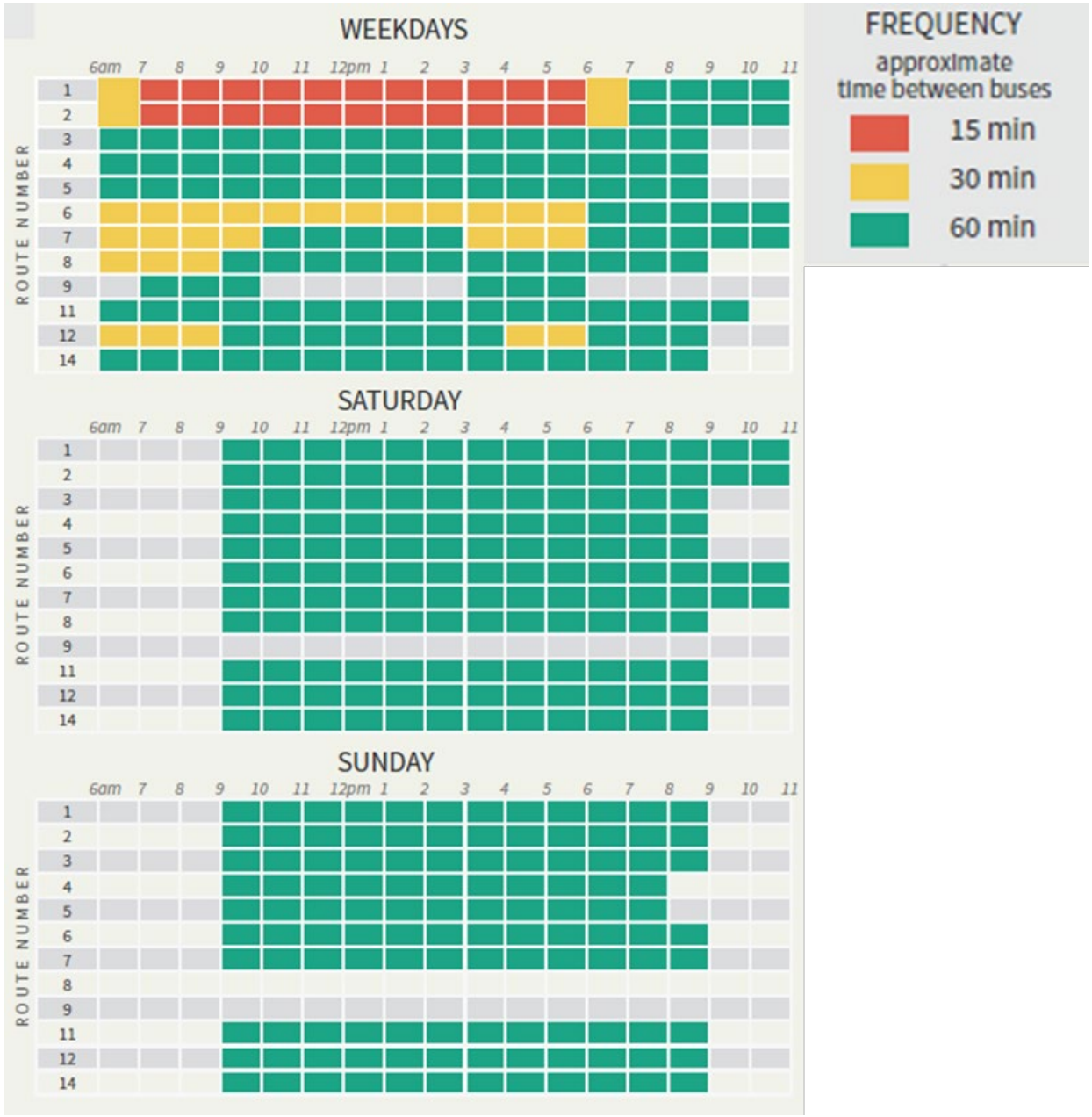
Span of Service and Frequency

Figure 3-12 shows headways and service span for each route, and the subsequent maps (Figure 3-13, Figure 3-14, Figure 3-15, and Figure 3-16) show the spatial distribution of routes by service frequency for weekday daytime (peak), weekday evening (off-peak), Saturdays, and Sundays.

All but two of MUTD's routes operate seven days per week. On weekdays, routes generally operate between 6 a.m. and 9 p.m., except for Routes 1, 2, 6, 7, and 11, which end around 10 or 11 p.m. On weekends, routes generally run from 9 a.m. to 9 p.m., except for Routes 1, 2, 6, and 7, which operate until 11 p.m. on Saturdays.

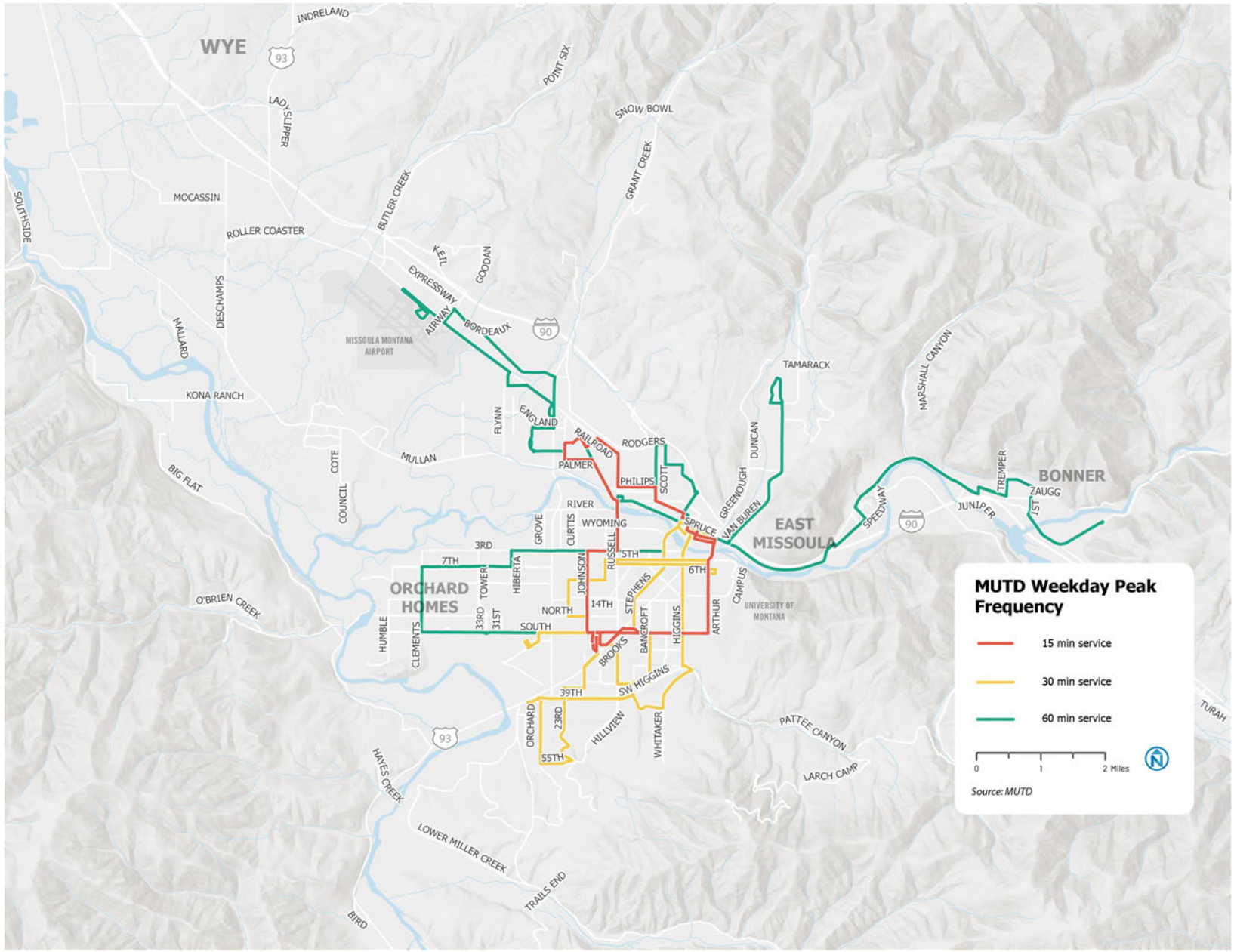
Aside from two routes, most operate with headways of between 30 and 60 minutes on weekdays. Routes 1 and 2 operate a 15-minute weekday service from 7 a.m. to 6 p.m. On weekends, all routes operate with 60-minute service.

Figure 3-12 Fixed-Route Span and Frequency



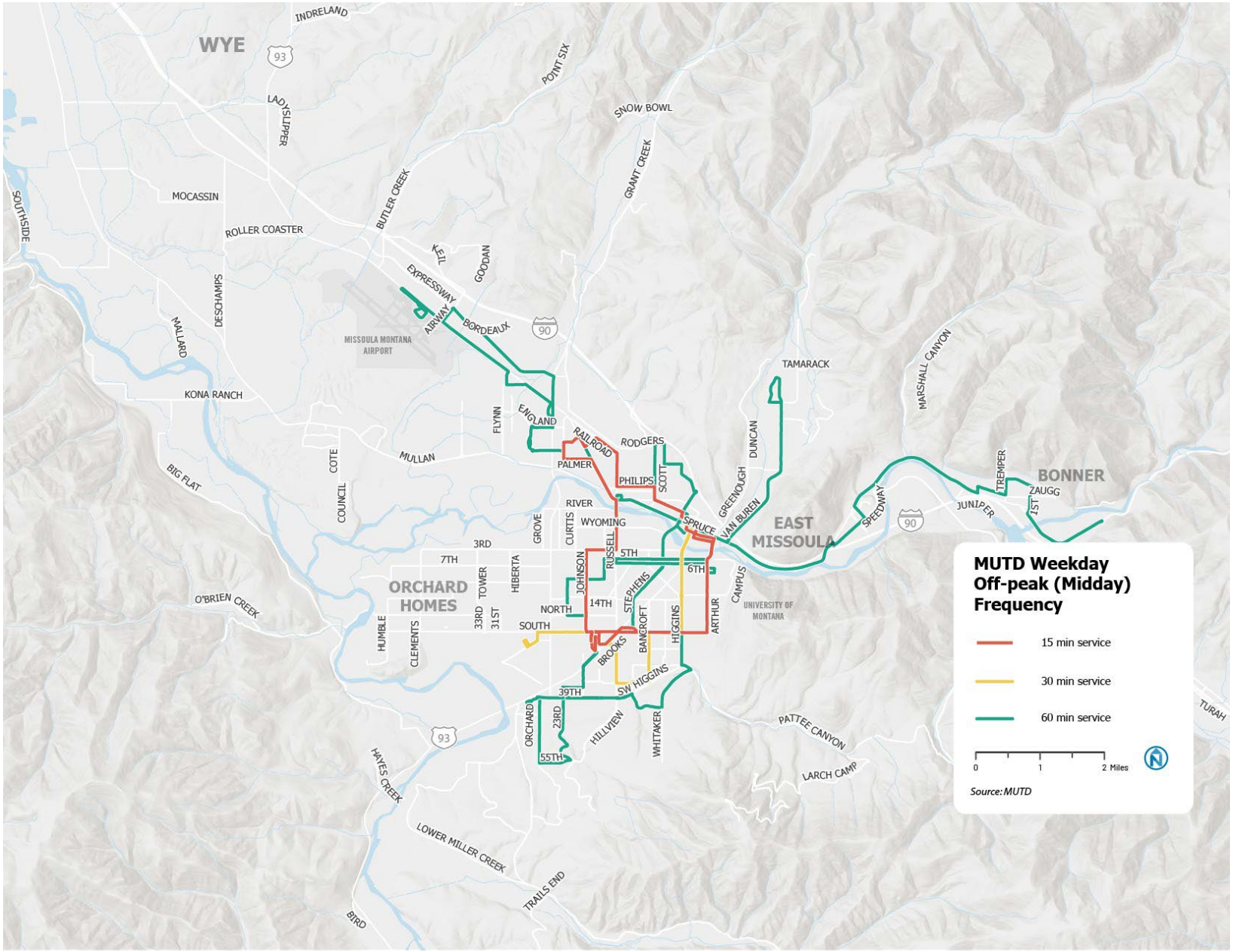
Source: MUTD, Effective July 10, 2022

Figure 3-13 Fixed-Route Weekday Peak Frequency



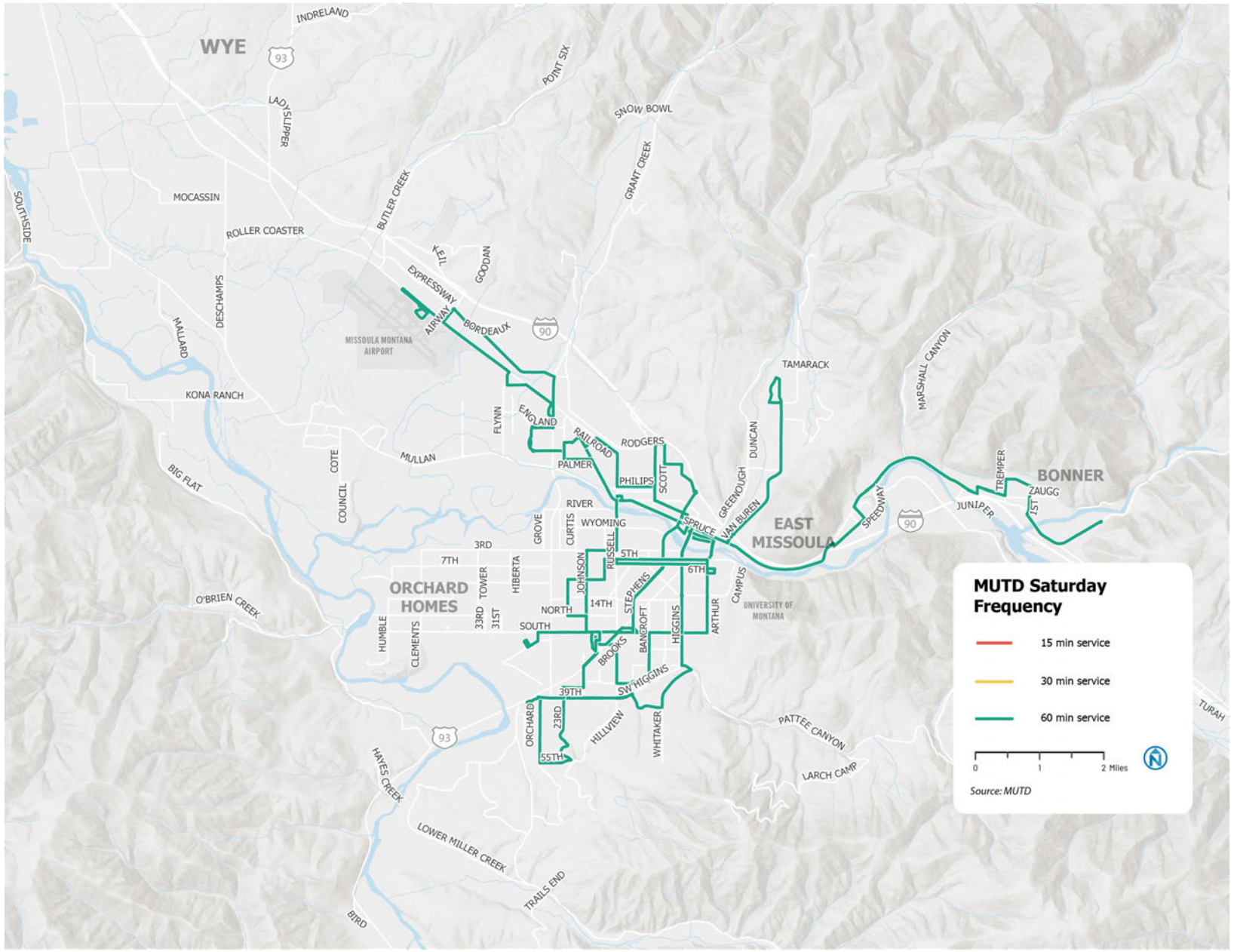
Source: MUTD

Figure 3-14 Fixed-Route Weekday Off-Peak Frequency



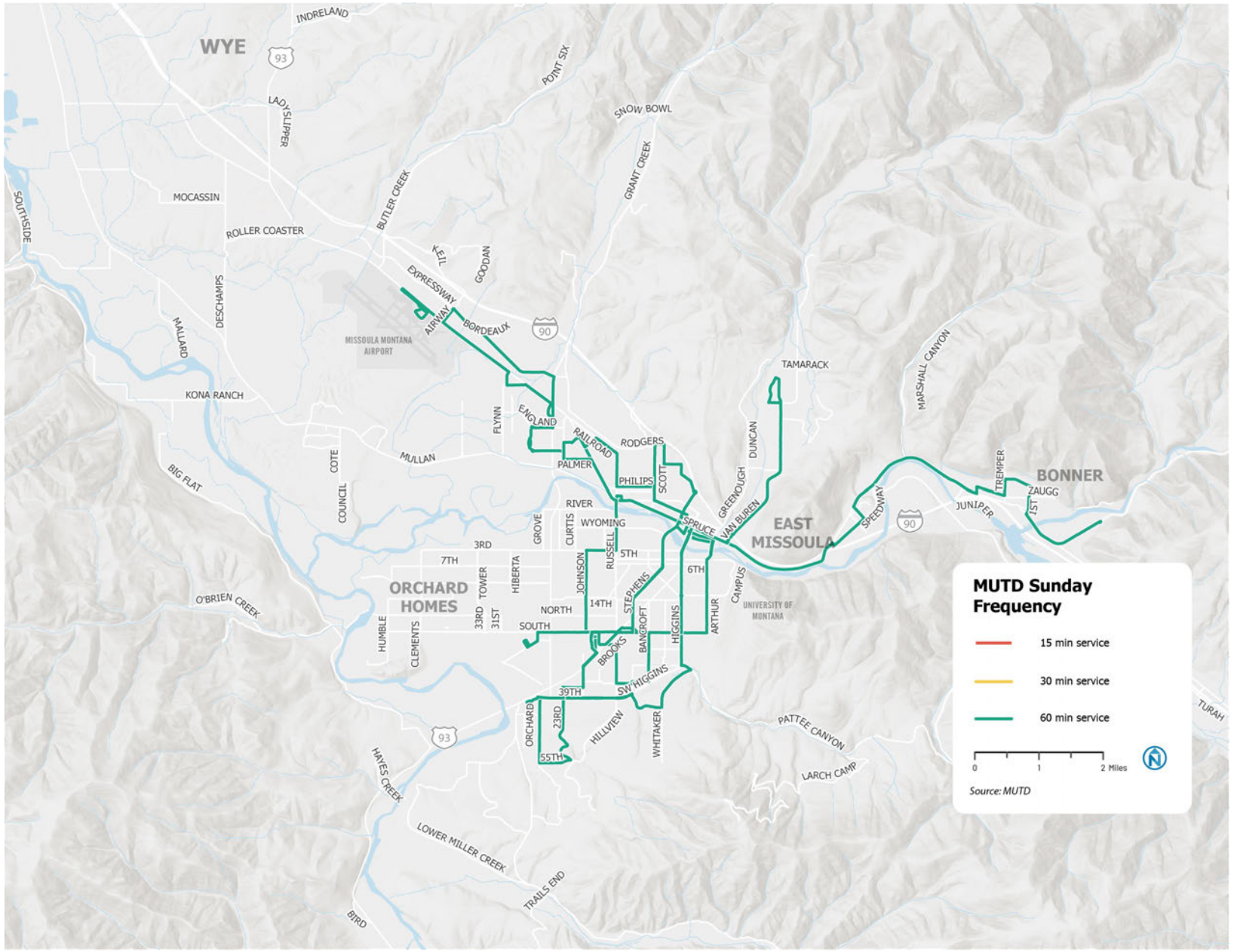
Source: MUTD

Figure 3-15 Fixed-Route Saturday Frequency



Source: MUTD

Figure 3-16 Fixed-Route Sunday Frequency



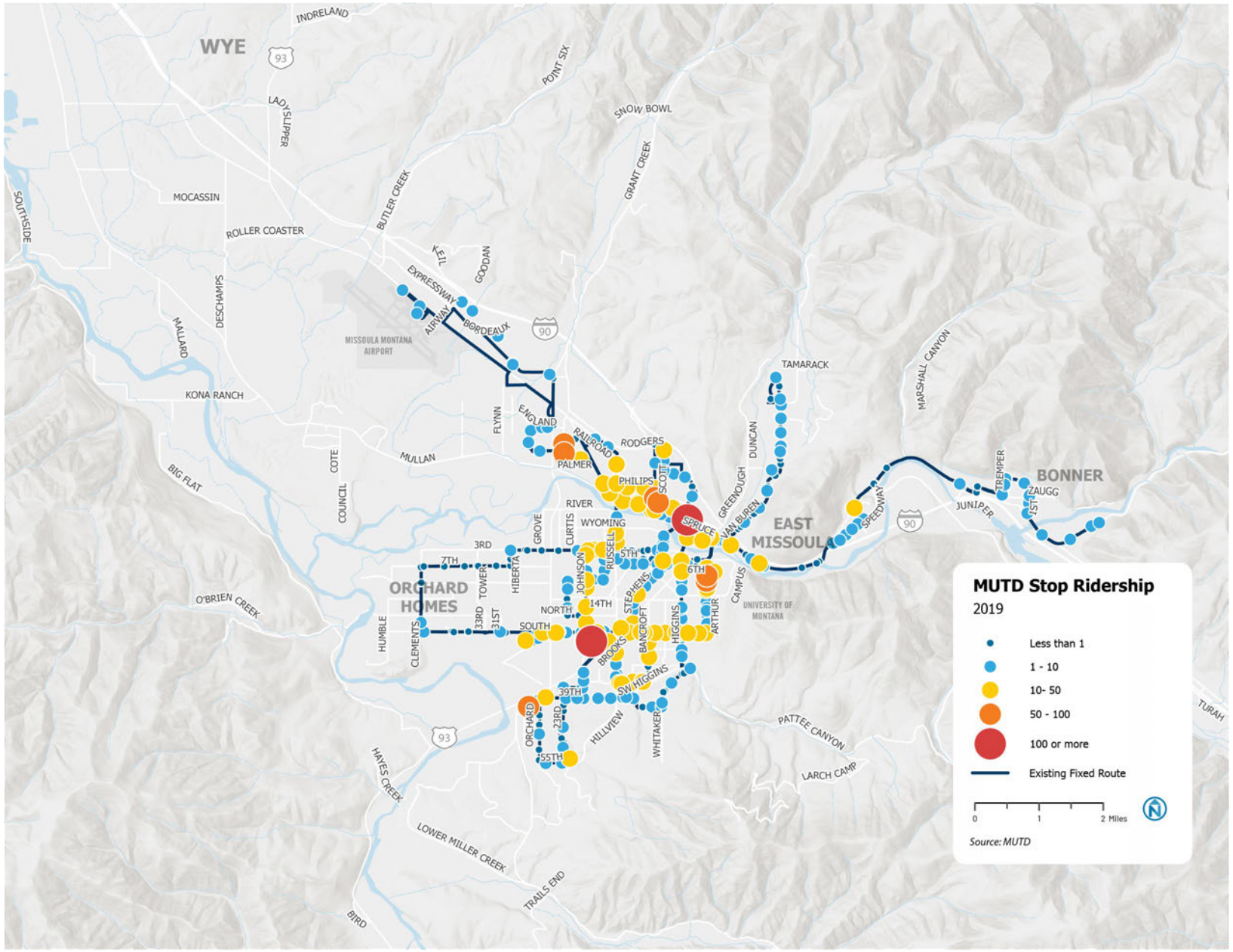
Source: MUTD

System Ridership

In 2019, MUTD's fixed-route network averaged over 5,043 boardings on weekdays. In 2023, the system had an average of 3,892 weekday boardings. Figure 3-17 and Figure 3-18 show the average weekday ridership throughout the system at the stop level in 2019 and 2023, respectively. Some of the high ridership corridors in the system include S Johnston Street, South Avenue, Russell Street, and Broadway Street.

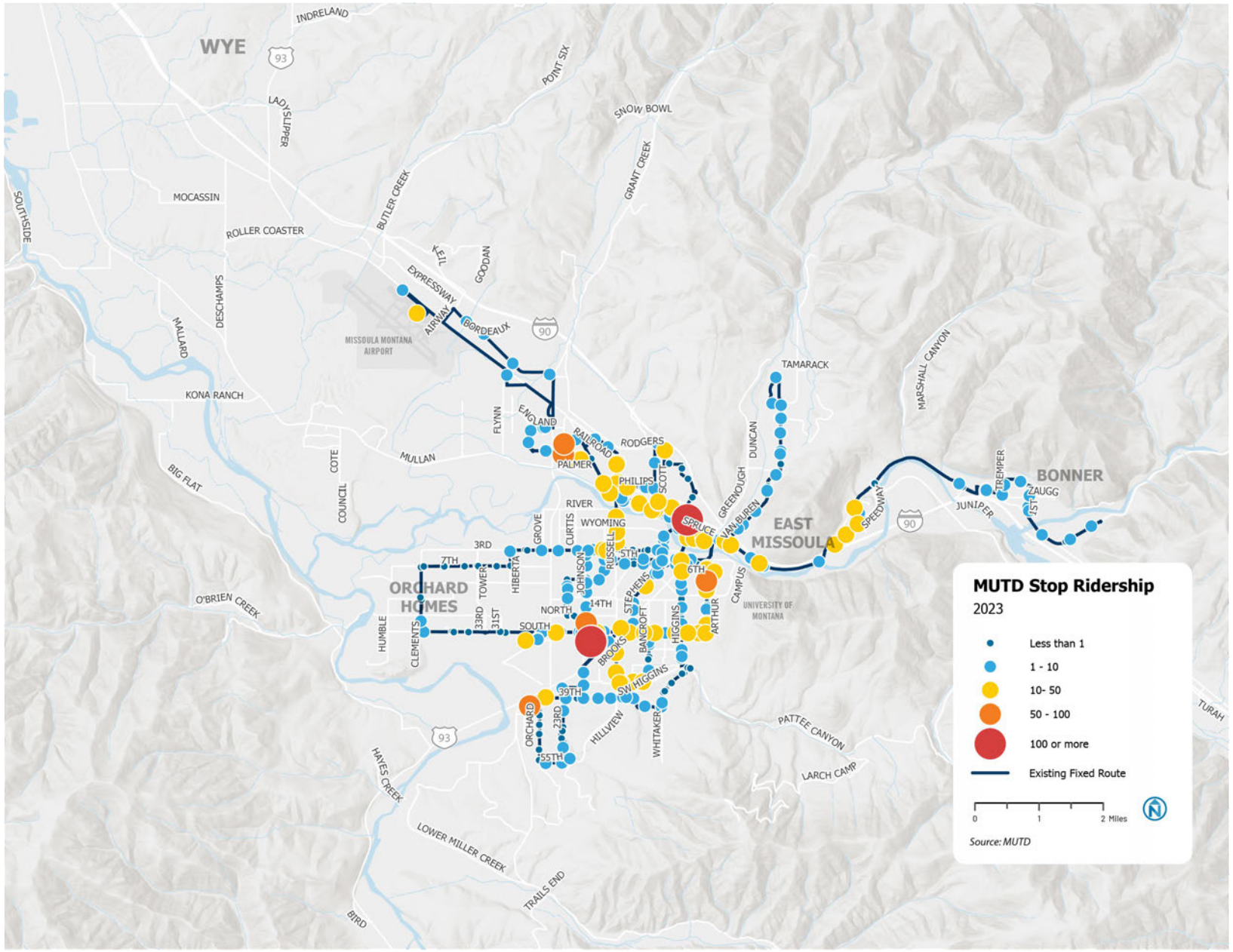
Figure 3-19 shows the change in ridership between 2019 and 2023. Ridership declined around the intersection of S 3rd Street W and S Johnson Street, and around the Westside, Northside, Heart of Missoula, Southgate Triangle, and Lewis and Clark neighborhoods.

Figure 3-17 Average Weekday Stop Ridership 2019



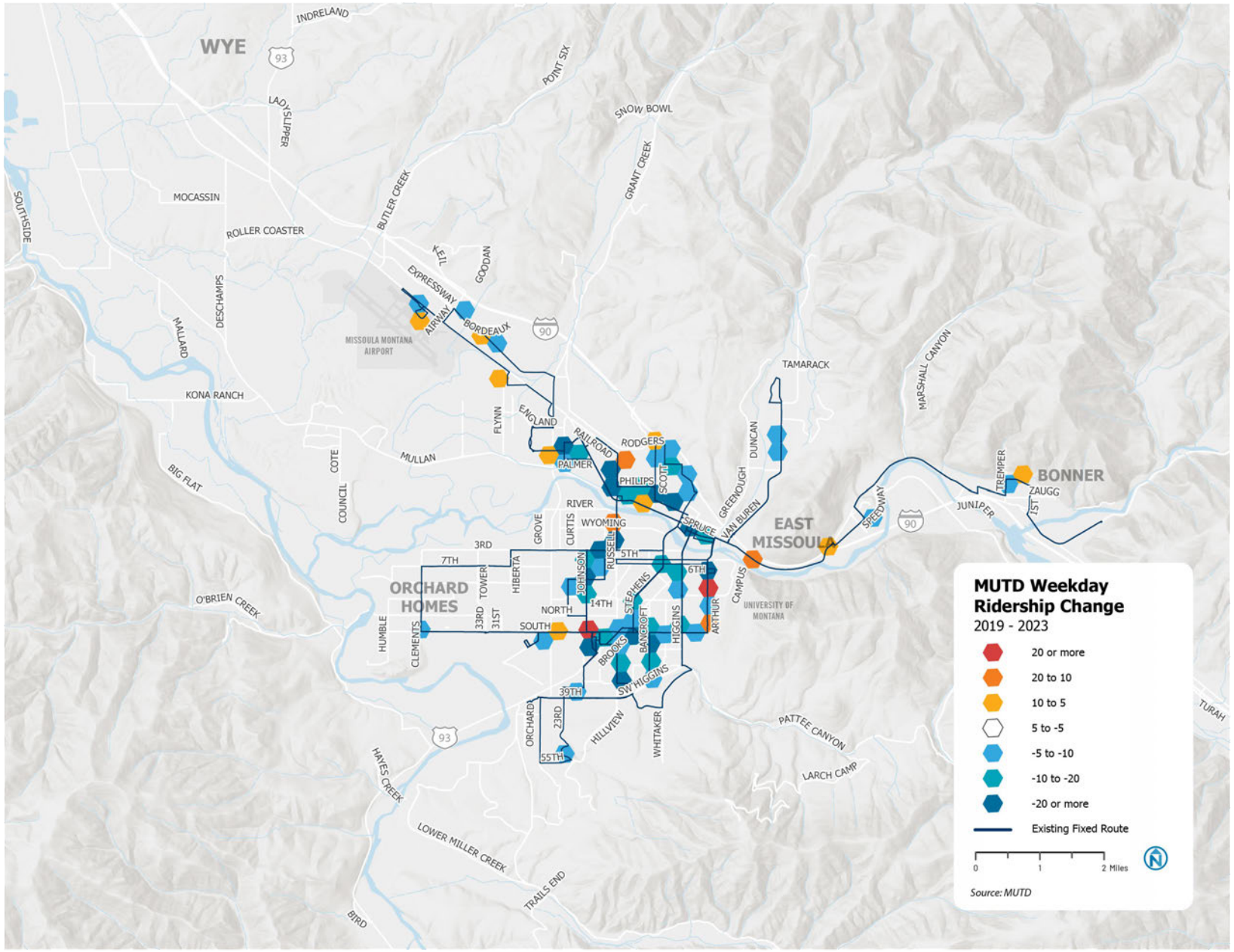
Source: MUTD

Figure 3-18 Average Weekday Stop Ridership 2023



Source: MUTD

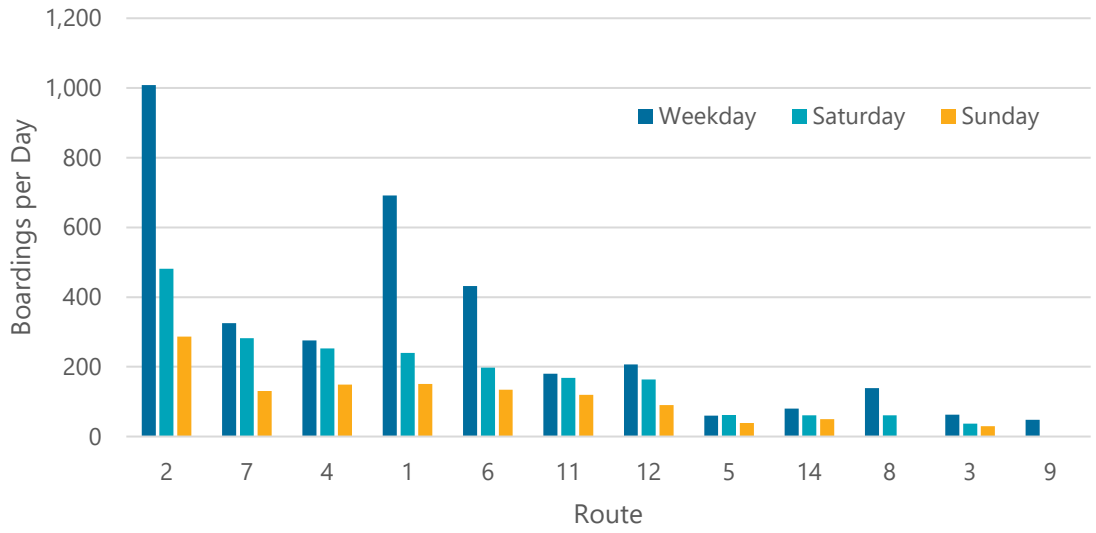
Figure 3-19 Weekday Ridership Change 2019 - 2023



Source: MUTD

Figure 3-20 shows the ridership at the route level in September and October of 2022. On weekdays, the top three routes are: Route 2, Route 1, and Route 6. The boardings of the three routes combined comprise 61% of daily ridership. On Saturdays, the routes with the highest ridership are Route 2, Route 7, and Route 4. On Sundays, the routes with the highest ridership are Route 2, Route 1, and Route 4. On both Saturdays and Sundays, the top three routes total to 50% of daily boardings.

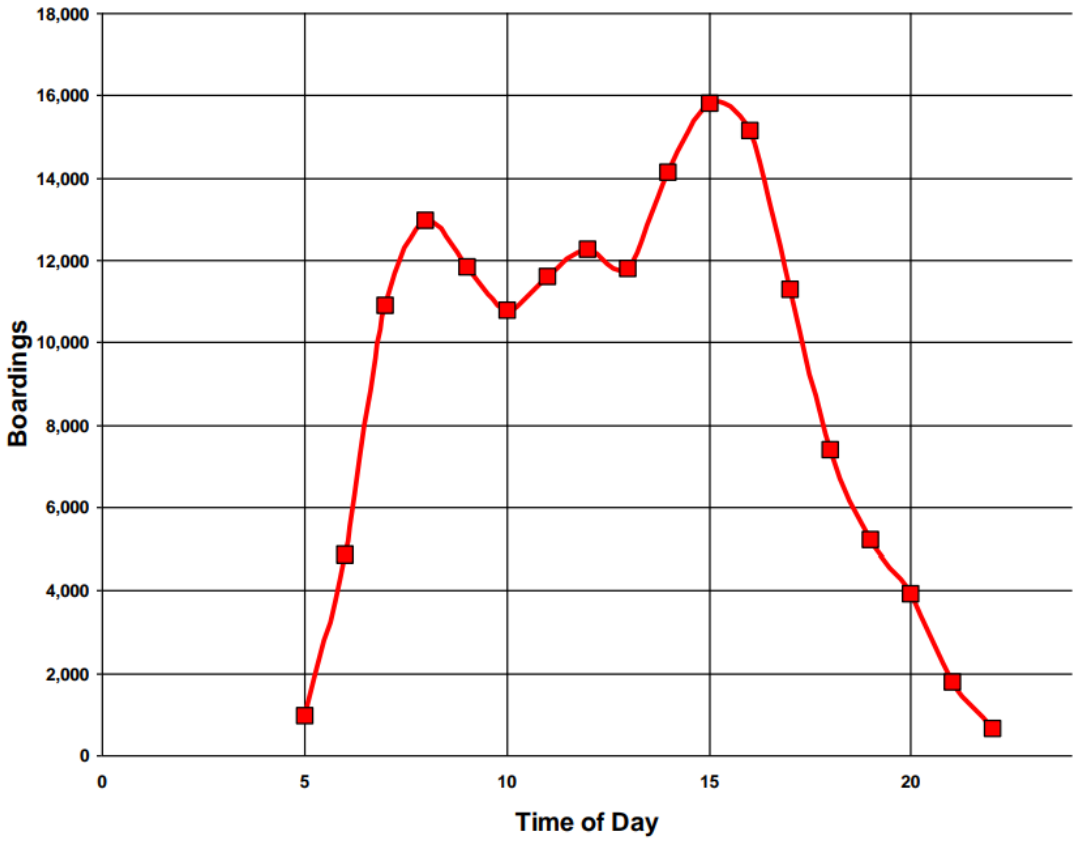
Figure 3-20 Average Weekday Route Ridership 2022



Source: MUTD, September to November 2022

As seen in Figure 3-21, a temporal analysis of ridership was also performed. The results show weekday ridership gradually increases from 5 a.m. before peaking between 7 a.m. and 9 a.m. A second peak occurs between 2 p.m. and 4 p.m. before ridership declines toward the end of service at 10 p.m. Ridership is steady throughout most of the day, aside from the p.m. peak. Periods with the highest ridership coincide with the highest frequencies of service.

Figure 3-21 Weekday Boardings by Time of Day



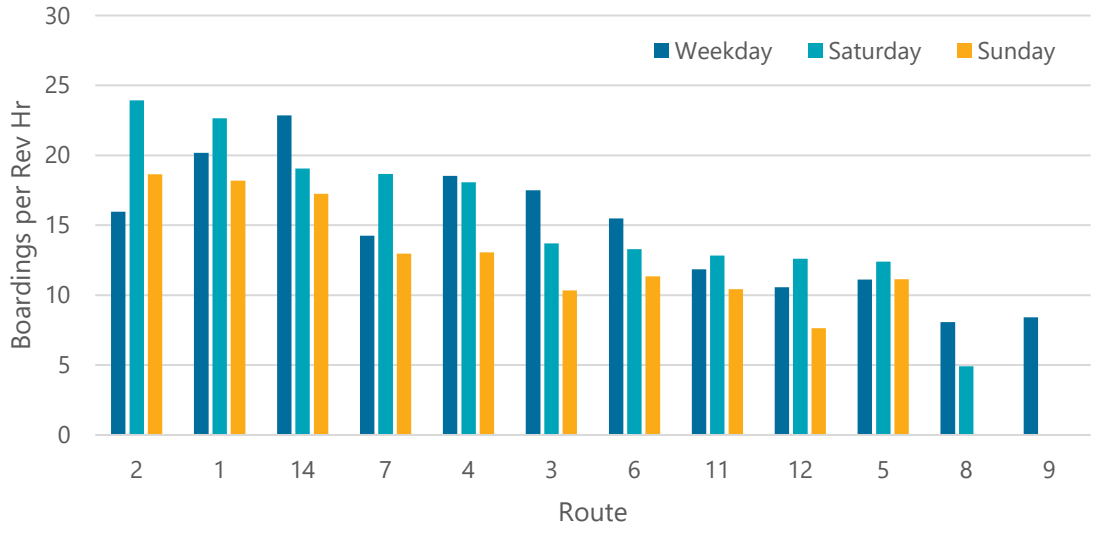
Source: MUTD, September and October 2023

Productivity

Productivity is measured in boardings per vehicle revenue hour. Revenue hours is the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip.

Figure 3-22 shows the weekday boardings per revenue hour for MUTD fixed-route service. On weekdays, the three most productive routes in the MUTD system are Route 14, Route 1, Route 4, all of which have 18 or more boardings per revenue hour. The three least productive routes are Route 12, Route 9, and Route 8, all of which have ten or fewer boardings per revenue hour. On Saturdays and Sundays, Route 2, Route 1, and Route 14 have the highest ridership productivity. Route 8 and Route 12 have the lowest ridership productivity on Saturdays and Sundays, respectively.

Figure 3-22 Route Boardings per Revenue Hour 2022



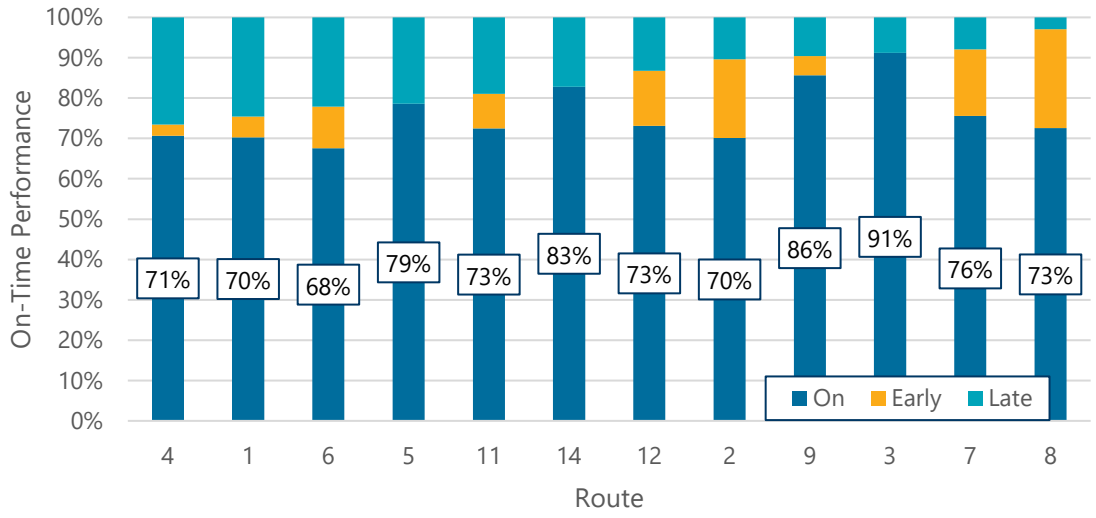
Source: MUTD, 2022

On-Time Performance

MUTD measures on-time performance by comparing the timepoint on the schedule with the actual time the bus arrives. A bus is considered on time if it arrives up to one minute before or five minutes after the scheduled time. Buses that arrive earlier or later than that window are considered early or late. MUTD currently has no on-time performance goal for service. Figure 3-23 illustrates the on-time performance of routes in September and October of 2023. Route 3 saw the highest on-time performance with 91%, while Route 6 saw the worst, with 68%. Routes 3, 5, and 14 had no early arrivals, while Route 8 experienced the largest number

of early arrivals, at 24%. Route 8 also experienced the lowest rate of late arrivals, at 3%, while Route 4 experienced the highest rate of late arrivals, at 27%.

Figure 3-23 On-Time Performance 2023



Source: MUTD, 2023

Bus Stops and Amenities

MUTD currently has 346 stops in its system as of December 2023. 66 (19%) stops have some sort of seating, and 56 additional (16%) stops have shelters. The number and percentage of stops with various amenities are shown in Figure 3-24. There is an opportunity to invest in more bus stop amenities to improve the passenger waiting experience.

Figure 3-24 Bus Stop Amenities

	Number of Stops	Percent
Seating (Bench or Simme-Seat)	66	19%
Shelter	56	16%
Total	346	100%

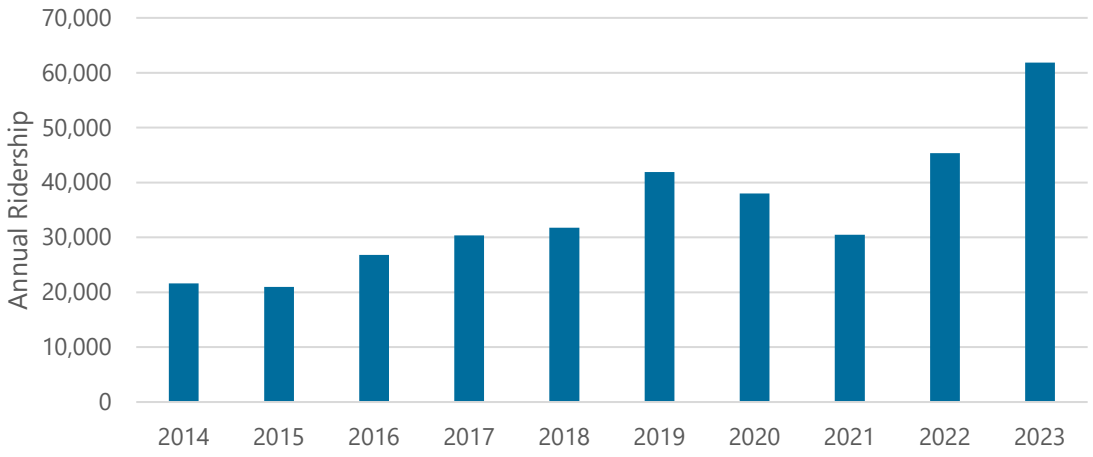
Source: MUTD, December 2023

PARATRANSIT

Historical Trends

Figure 3-25 illustrates historical paratransit ridership. Ridership on MUTD's paratransit service was on an upward growth trend from 2014 to 2019. Between 2014 and 2019, ridership increased by an average of 19% a year. Between 2019 and 2021, MUTD experienced a 27% drop in ridership due to the COVID-19 pandemic. However, between 2021 and 2023, ridership rebounded with a 103% increase in ridership. In 2023, ridership was 61,872, about a 48% increase from pre-pandemic levels.

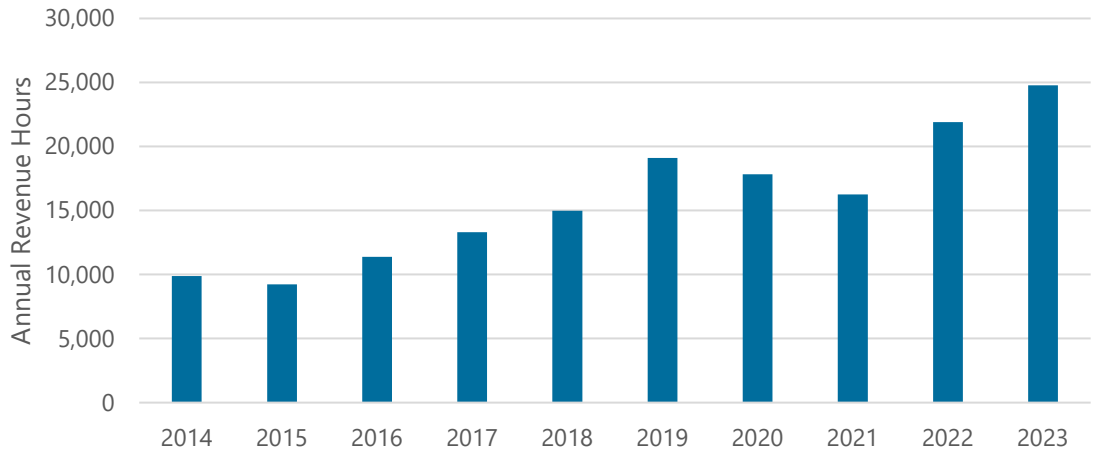
Figure 3-25 Historical Paratransit Ridership



Source: MUTD, 2023

Revenue hours is the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip. Figure 3-26 illustrates historical paratransit vehicle revenue hours. Between 2013 and 2019, revenue hours increased by an average of 15% a year. Between 2019 and 2021, MUTD experienced a 15% drop in ridership due to the COVID-19 pandemic. However, between 2021 and 2023, revenue hours followed ridership and rebounded with a 52% increase. In 2023, MUTD operated 24,785 revenue hours, about a 30% increase from pre-pandemic levels.

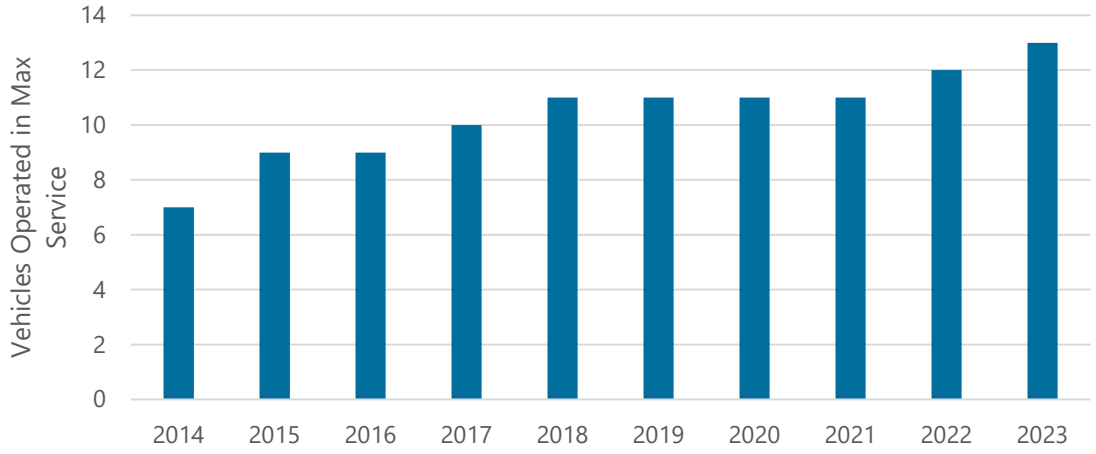
Figure 3-26 Historical Paratransit Vehicle Revenue Hours



Source: MUTD, 2023

Vehicles operated in max service is the maximum number of vehicles needed at a single time to provide peak service. As seen in Figure 3-27, vehicles operated in max service had been increasing between 2013 and 2018 before plateauing for four years. One additional vehicle per year was added to max service in 2022 and 2023.

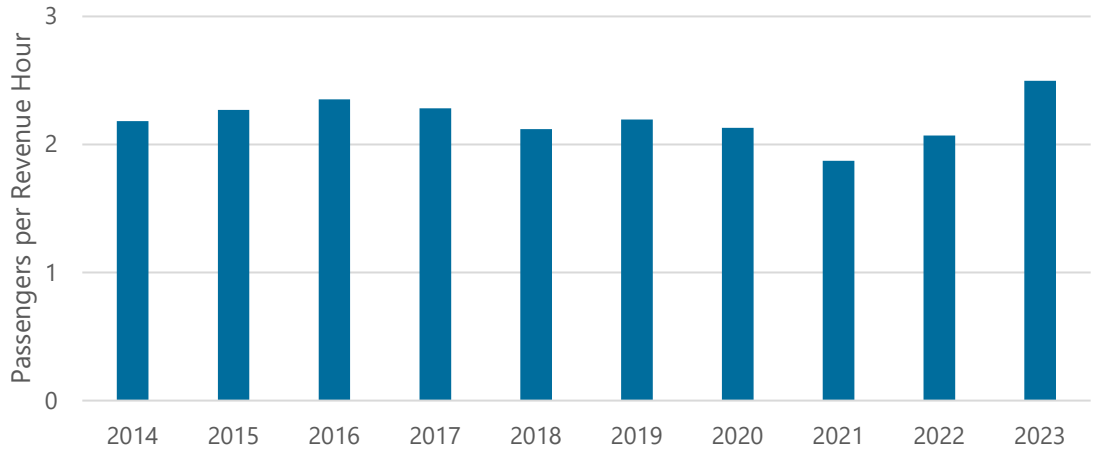
Figure 3-27 Historical Paratransit Vehicles Operated in Max Service



Source: MUTD, 2023

The productivity of service is typically measured in terms of passengers per revenue hour. Service productivity (Figure 3-28) has hovered between 2.1 to 2.3 passengers per revenue hour over the last decade. In 2021, ridership fell slightly below 1.9 passengers per revenue hour. Ridership rebounded to 2.5 passengers per revenue hour in 2023.

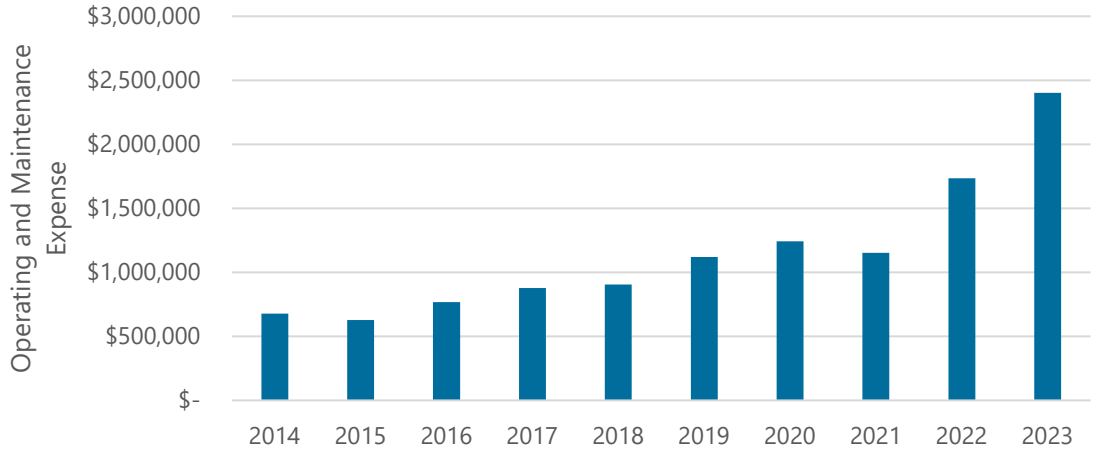
Figure 3-28 Historical Paratransit Productivity



Source: MUTD, 2023

Figure 3-29 shows the annual operating and maintenance (O&M) costs for the paratransit service, not adjusted for inflation. Prior to the pandemic, costs rose an average of 11% per year. 2021, which saw a decline of 7%, was the only year where costs did not increase. In the following two years, expenses increased by an average of 45% per year.

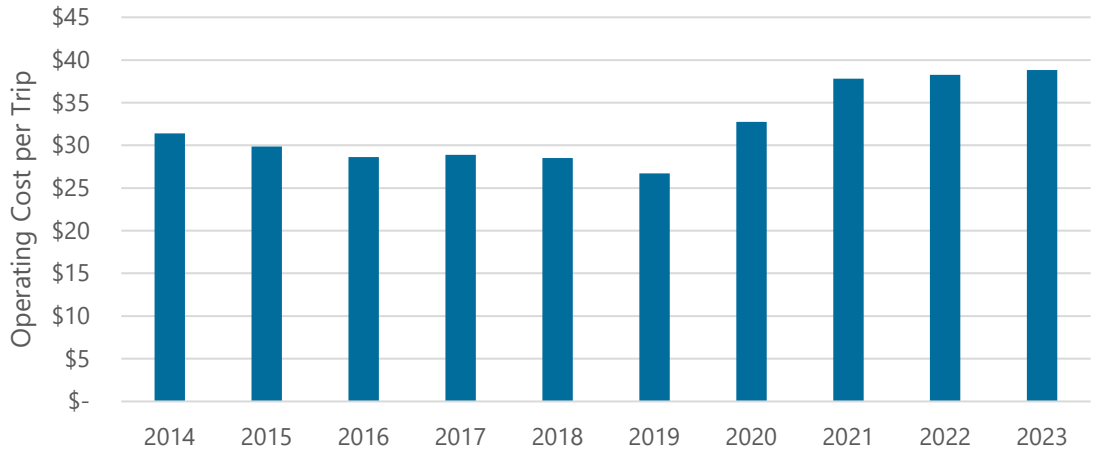
Figure 3-29 Historical Paratransit Operating and Maintenance Expenses



Source: MUTD, 2023

Figure 3-30 normalizes O&M costs by number of passengers, or trips. Between 2013 and 2019, cost per trip decreased by an average of $1, or 3% per year, from $31 to $26. Cost per trip increased significantly during the pandemic from 2019 to 2021 – averaging a $5.50 increase per year. Since 2021, cost per trip has plateaued at about $39, a 44% increase from pre-pandemic levels.

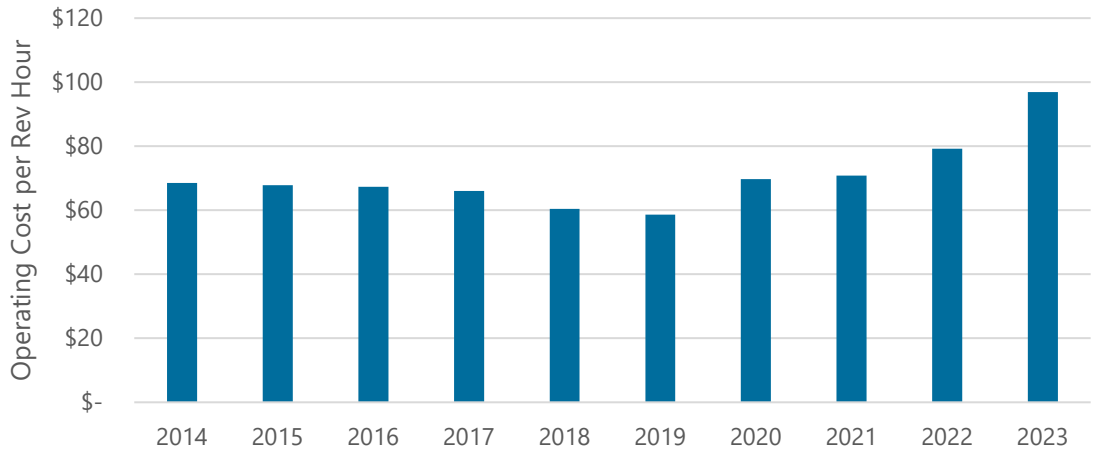
Figure 3-30 Historical Paratransit Cost per Trip



Source: MUTD, 2023

Figure 3-31 normalizes O&M costs by revenue hours. Between 2013 and 2019, cost per revenue hour declined by an average of 2% per year. Cost per revenue hour since pre-pandemic levels in 2019 has increased by 64%, an average of 16% per year.

Figure 3-31 Historical Paratransit Cost per Revenue Hour



Source: MUTD, 2023

FLEET

MUTD has 30 vehicles in its fixed-route fleet, 12 of which are battery electric. The complete fleet roster, along with age and replacement year, are shown in Figure 3-32.

Figure 3-32 Fixed-Route Fleet

Number of Vehicles	Year	Make	Replacement FY	Propulsion Type
1	1996	Chance	2024	Diesel
10	2009	Gillig	2025	Diesel
4	2010	Eldorado	2024/2025	Diesel
3	2014	Gillig	2029	Diesel
6	2019	Proterra	2031	Battery Electric
4	2021	Gillig	2033/2034	Battery Electric
2	2021	New Flyer	2034	Battery Electric

Source: MUTD, 2023

MUTD has 16 vehicles in its paratransit fleet. The complete fleet roster, along with age and replacement year, are shown in Figure 3-33.

Figure 3-33 Paratransit Fleet

Number of Vehicles	Year	Make	Replacement Year	Propulsion Type
2	2014	Chevrolet	2022	Diesel
1	2018	Champion	2025	Diesel
3	2018	Dodge	2025	Diesel
4	2019	Dodge	2027	Diesel
4	2021	Elkhart	2027	Diesel
2	2022	Ford	2030	Diesel

Source: MUTD, 2023

FACILITIES

MUTD has one major transit hub, where riders can transfer between routes: the Mountain Line Transfer Center, located at 200 W Pine St. All routes except Route 8 use the transfer center as an end of line. MUTD also has an administrative and maintenance facility at 1221 Shakespeare St.

KEY FINDINGS

- Historical trend data helps to paint where MUTD has been and the direction they are heading.

  Fixed Route

  - **Ridership on the fixed-route network was steady before COVID** and is slowly recovering back to pre-pandemic levels. MUTD's 2023 ridership was 1.09 million boardings, which is approximately 70% of MUTD's 2019 annual ridership.
  - **2023 saw an increase in revenue hours** due to implementations of various service improvements, including:
    - Earlier and later weekday service
    - All-day weekday service on two new routes
    - Longer Saturday service
    - New Sunday service
  - **Productivity has been declining since COVID** and is now at 15 passengers per revenue hour, less than half of what it used to be in 2019. Some of this decrease in productivity can be attributed to the service expansions implemented in 2023 which added service on Sundays and in the early morning/late evening, which needs time for ridership to mature.
  - **Operations and maintenance costs have been increasing** over the last decade, with the highest increases being during the last three years.

  Paratransit

  - **Ridership on MUTD's paratransit service has exceeded pre-pandemic levels**. Despite a ridership drop in 2020 and 2021, ridership rebounded in the following years, with 2023 seeing a 48% increase from pre-pandemic levels.
  - **Productivity is relatively stable**, with numbers holding steady around two passengers per hour for the last decade, aside from a dip during the COVID-19 pandemic.
  - Without adjusting for inflation, **operating and maintenance expenses have drastically increased**; expenses in 2023 were twice as high as expenses in 2019.
- The **top three ridership routes** in MUTD's system based on 2022 average weekday ridership are: **Route 2**, **Route 1**, and **Route 6**.
- The **weekday systemwide temporal distribution** of ridership shows an **8 a.m. peak and a 3 p.m. peak, with ridership generally steady during the middle of the day.** This ridership pattern supports the daytime service schedule MUTD currently operates.

- The five **most productive routes** in the MUTD system based on average weekday boardings per revenue hour are **Route 14, Route 1, Route 4, Route 3, and Route 2.**
- The **strongest ridership corridors have high-frequency (15 min) service.** Some of the high ridership corridors in the system include S Johnston Street, South Avenue, Russell Street, and Broadway Street.
- **Ridership patterns suggest latent demand for more weekend service:** Routes 1, 2, 7, and 12 have hourly service on weekends but have higher productivity levels than on weekdays when service operates at 30-minute headways or better during peak hours. **Out of the 346 stops in the system, 16% have shelters, and 19% have either Simme-Seats or benches.** There is an investment opportunity to increase the number of stops with shelters and seating.

4 MULTI-MODAL TRANSPORTATION CONDITIONS

While Chapter 3 focused on the transit network, this chapter summarizes the rest of the transportation network in Missoula. Driving, walking, biking, and safety are all included in this chapter. A series of performance metrics are also included at the end of this chapter.

FUNCTIONAL CLASS SYSTEM

Figure 4 -1 Functional Classification Roadway Miles

The Missoula Planning consists of 946 roadway miles. The majority of these are local streets but the remainder are considered to be more significant connections in our system serve and a higher functional class roles in our transportation system.

Interstate	Principal Arterial	Minor Arterial	Collector	Rural Highway	Local Street
19 miles	36 miles	36 miles	122 miles	11 miles	722 miles

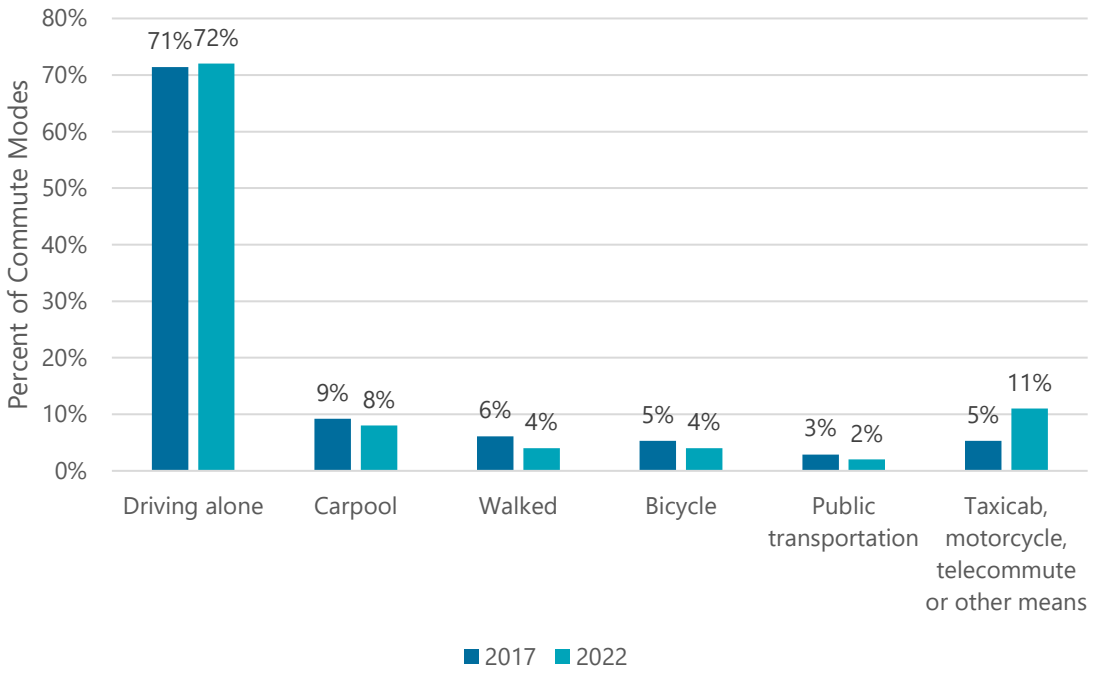
HOW PEOPLE GET AROUND

A reliable transportation system is essential for the livelihood of all residents, connecting them to neighborhoods, commercial and recreational areas, and job centers. Understanding how people travel will help create a better traveling experience for them.

As shown in Figure 4-1, driving alone is the primary transportation mode for 72% of area residents who commute to work, a 1% increase from 2017. A small percentage of residents take public transportation, walk, and bike, a one to two percent decrease for these modes from 2017.

Out of the 11% of people who use taxicabs, motorcycles, or telecommute, approximately 10% of employees work remotely. This no doubt has been due to changes brought on by the COVID-19 pandemic. Commute to work data does not include travel patterns for the more than 7,000 University of Montana students in Missoula.

Figure 4-2 Percent of Commute Modes 2017 vs. 2022



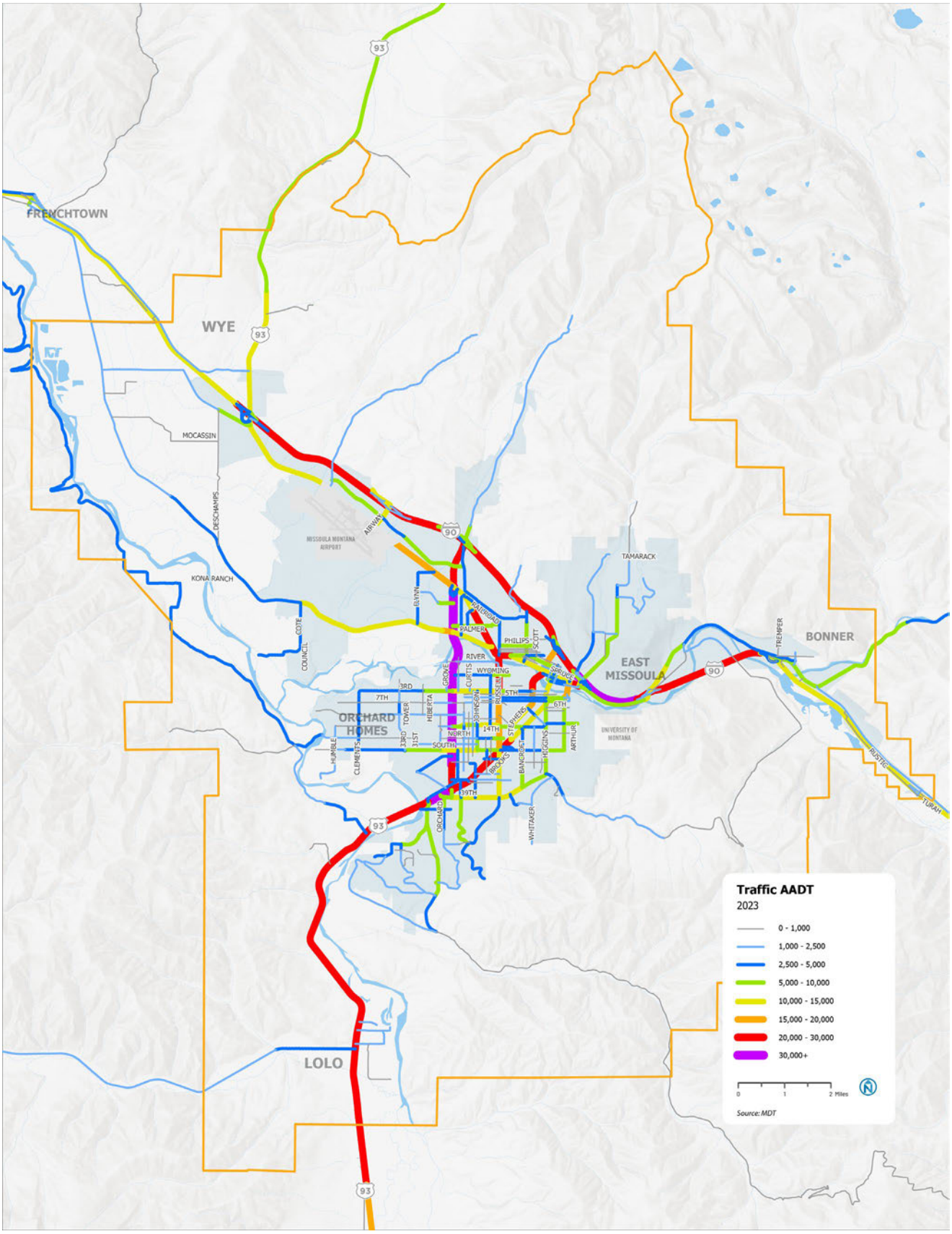
Source: ACS, 2017 and 2022

DRIVING IN MISSOULA

Many residents rely on driving to travel throughout Missoula. The busiest corridors have remained the same since 2017.

As shown in Figure 4-2, the highest concentration of daily auto trips is along the Reserve Street corridor, which carries more than 30,000 vehicles each day. Other roadways with high traffic volumes include Brooks Street in the Southgate Triangle area, the bridges into downtown, and I-90 between downtown and East Missoula. Within the MPO, 59% of lane miles – the neighborhood streets and local connections – are owned by the City of Missoula. The county owns about 24% of roads, and state and federal roads make up about 17%. the busiest streets may fall outside of the City's jurisdiction, but within the MPO's jurisdiction for planning purposes of the LRTP.

Figure 4-3 Annual Average Daily Trips (AADT)



Source: MD

WALKING IN MISSOULA

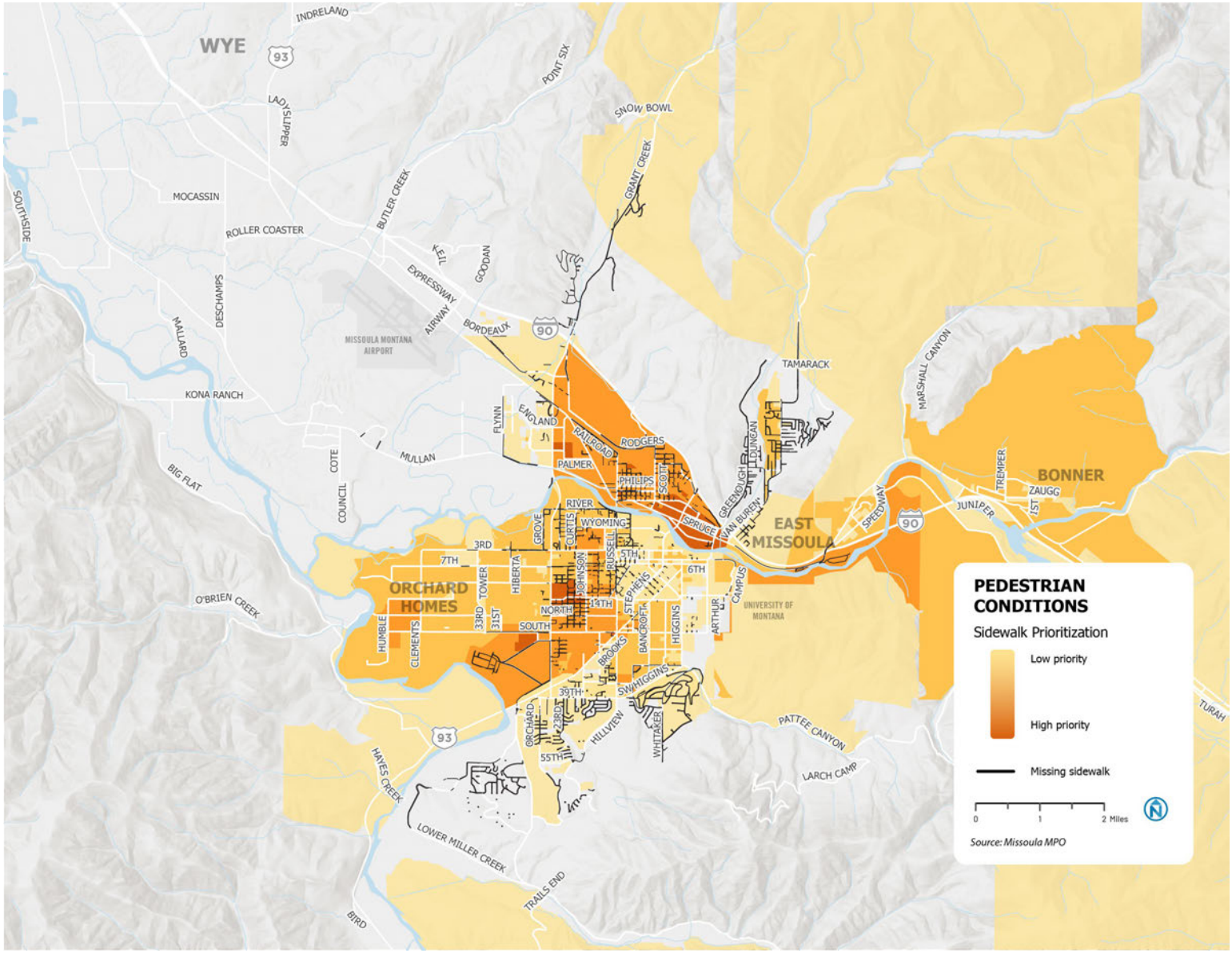
Accessible and maintained sidewalks are essential for people to walk, roll, and use mobility devices comfortably and safely in the Missoula area. While sidewalks on both sides of the street may not be necessary in rural areas, a designated pathway is needed for travel within and between residential neighborhoods and other community destinations. As the region's population continues to grow, a complete pedestrian network will need to be a priority to meet community mobility needs.

The City of Missoula's 2019 Pedestrian Facilities Master Plan identified 199.2 miles of missing sidewalk, shown in black in Figure 4-4. Currently, there are 420 miles of sidewalks within the Missoula Planning area. Most of the sidewalks in Missoula are in older and newer neighborhoods such as Riverfront, Southgate Triangle, and the University District. The Facilities Master Plan helps prioritize where sidewalks should be installed. The prioritization consisted of two major categories: social demographics data and built environment data. The following table breaks down the scoring elements and criteria. Missoula County has their own plan, titled the Missoula County Pathways and Trails Master Plan, which examines the existing paved pathways across the county and prioritizes projects for implementation..

Figure 4-4 Scoring Elements/Criteria for Pedestrian Facilities Master Plan

Element	Criteria
Social Demographic Scoring: Demographics	Low/moderate income households
	Adult obesity
	Zero car households
	Persons with a disability
	Persons aged 65+
Physical Element Scoring: Attractors (within ¼ mile)	Schools
	Transit stops
	Grocery stores
	Parks
	Commuter paths
	Post offices
	Medical clinics
	Independent Living Services
	Emergency/support services
	Religious/civic
Physical Element Scoring: Density (Residential/Employment)	Residential (> 7 households/acre or > 4 households/acre)
	Employment (< 12 jobs/acre)

Figure 4-5 Pedestrian Conditions



Source: Missoula MPO

BIKING IN MISSOULA

Missoula has continued to make investments in its bicycle network to encourage more active transportation and to reduce vehicular trips. Presently, there are approximately 47 miles of bicycle facilities (Figure 4-5). There are plans to add another 100 miles to the network, which would more than double the bicycle facilities currently in the city. In the 2019 Bicycle Facilities Master Plan, the City of Missoula adopted new bicycle facility nomenclature, meaning there is not a one-to-one comparison of facility type between the existing and proposed network. Nearly half of all proposed bicycle facilities will be protected, with 25.5 miles of shared-use off-street paths and 23.1 miles of buffered on-street lanes.

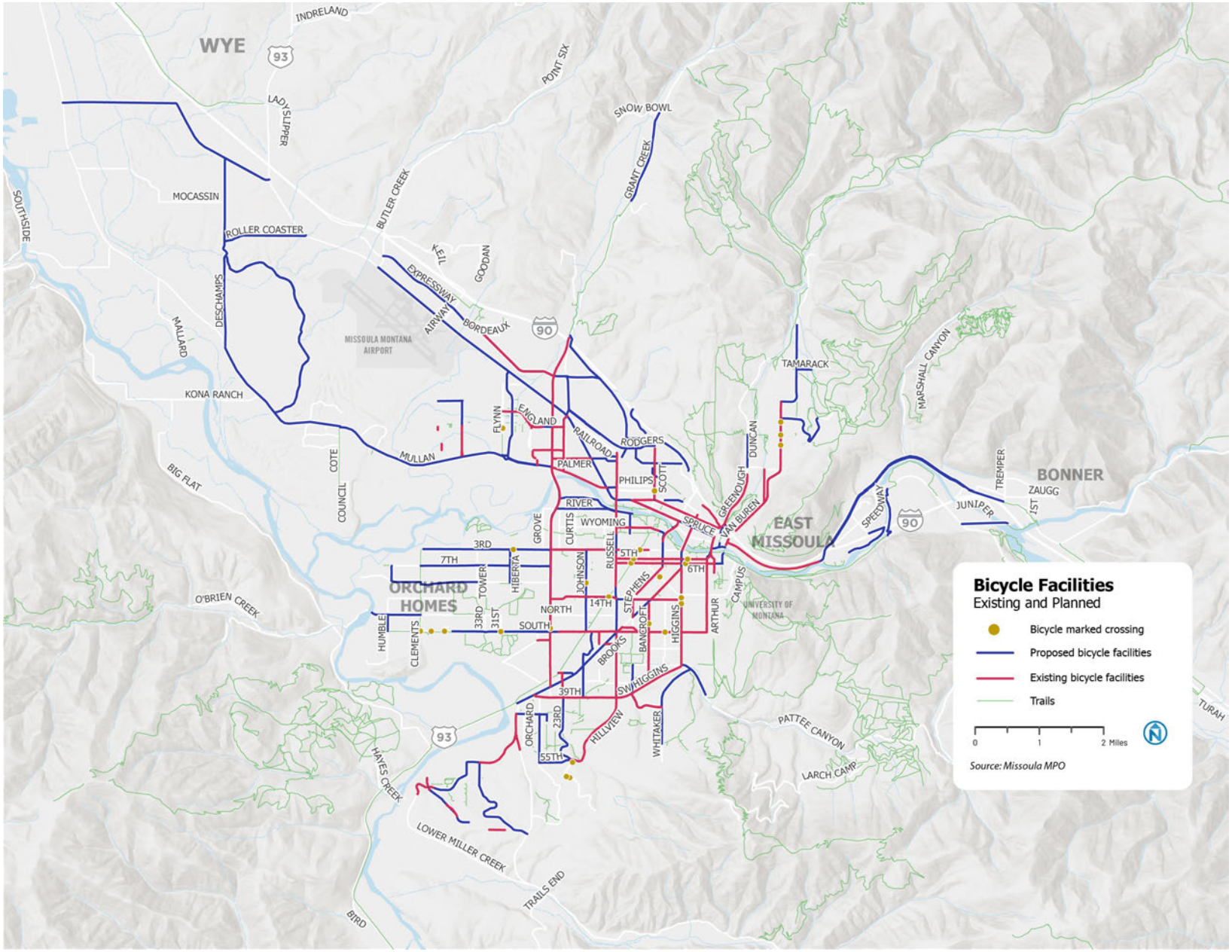
Figure 4-6 Miles of Existing and Proposed Bicycle Facilities

Bicycle Facility	Length (miles)
Existing Facilities	**47 miles**
Cycle Track	0.9 miles
Lanes	46.1 miles
Proposed Facilities	**100 miles**
Advisory Bike Lane	0.5 miles
Bike Lanes	41.4 miles
Buffered Bike Lanes	23.1 miles
Separated Bike Lanes	6.3 miles
Shared Use Paths	25.5 miles
Total Existing + Proposed Facilities	**147 miles**

Source: City of Missoula, Bicycle Facilities Master Plan

The current bicycle network is primarily concentrated in central Missoula (Figure 4-6). There are plans to expand the bicycle network outside the urban core, northwest to Wye and west to the Orchard Homes neighborhood. The Missoula County Pathways and Trails Master Plan has identified proposed projects for new paved trails that fall outside Missoula city limits.

Figure 4-7 Existing and Planned Bicycle Facilities

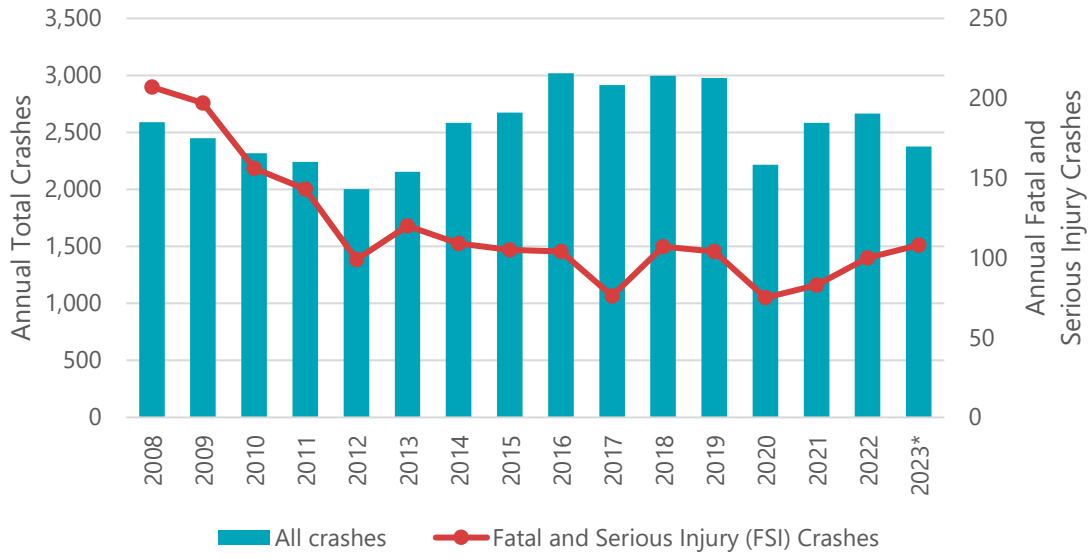


Source: Missoula MPO

TRANSPORTATION SAFETY IN MISSOULA

The Montana Department of Transportation (MDT) maintains records on vehicle crashes. Figure 4-7 shows the historical crash trends in Missoula County since 2008. After being on a downward trend until 2012, total crashes started to go up, peaking between 2016 and 2019 at about 3,000 annual crashes. In 2020, total crashes decreased to 2,200 due to reduced travel from the COVID-19 pandemic. Since then, total crashes have been increasing as travel rebounds. When looking at fatal and serious injury (FSI) crashes only, they decreased from 200 to 100 annual crashes between 2008 and 2012 but have remained relatively constant at around 100 crashes per year since then.

Figure 4-8 Historical Crash Trends

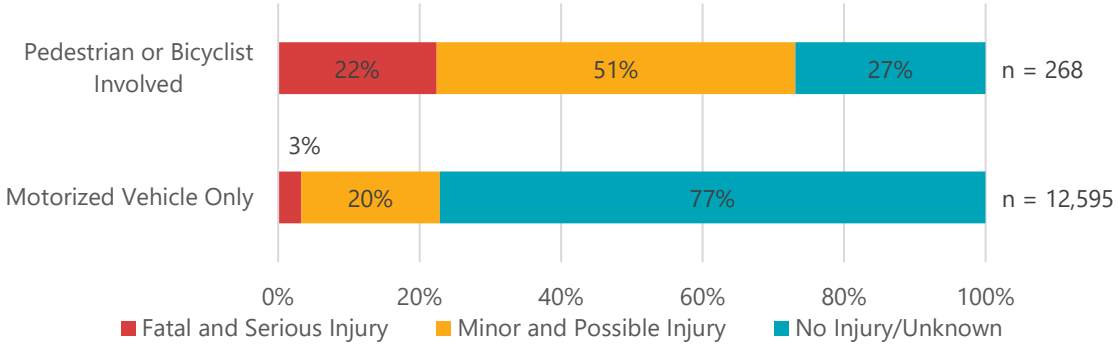


*Note: 2023 data has not yet been verified by MDT

Source: MDT Crash Data

Figure 4-8 compares the injuries and fatalities of motorized with pedestrian and bicyclist crashes. The figure shows that more than 70% of crashes involving people walking or biking resulted in some level of injury or a fatality. This differs greatly with crashes involving only motorized vehicles, where less than a quarter of those crashes resulted in some level of injury or a fatality. Notably, the incidence of pedestrian or bicyclist crashes resulting in a fatality or serious injury is much higher than for motorized vehicle crashes. This highlights the importance of promoting safety improvements that protect people walking, biking, and rolling throughout Missoula.

Figure 4-9 Motorized Vehicle Only Crashes vs pedestrian and bicyclist by injury level, 2019-2023

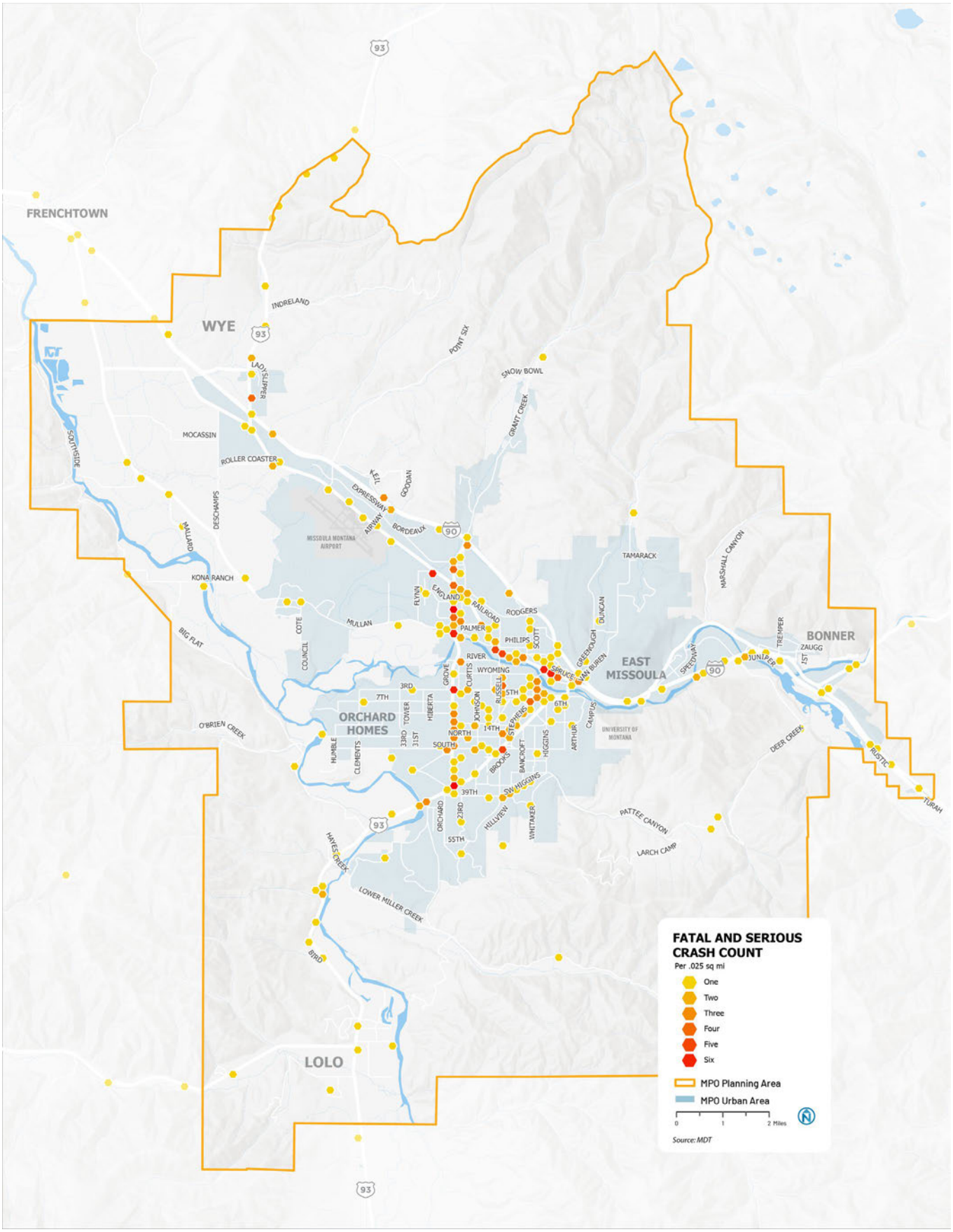


Source: MDT Crash Data

Figure 4-9 illustrates crashes that resulted in a fatality or serious injury between 2019 and 2023. Reserve Street has the highest concentration of fatal and serious injury crashes. Corridors with higher traffic volumes generally have higher crash rates.

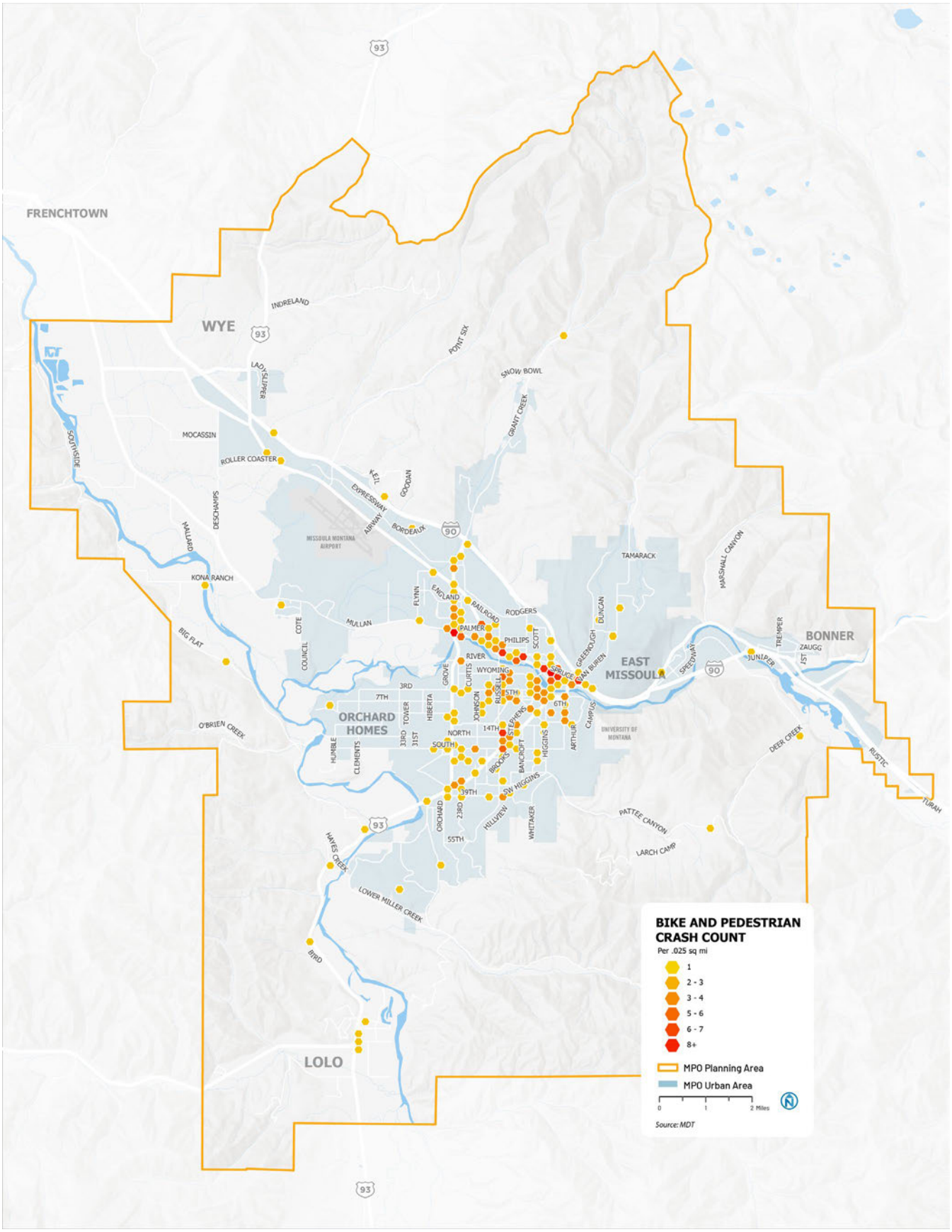
Figure 4-10 illustrates crashes involving pedestrians and bicyclists that resulted in any level of injury between 2019 and 2023. Mullan Road and Broadway Street have the highest concentrations of pedestrian and bicyclist crashes.

Figure 4-10 Fatal and Serious Injury Crash Locations 2019 - 2023



Source: MDT crash data, 2019-2023

Figure 4-11 Pedestrian and Bicyclist Crash Locations 2019 - 2023



Source: MDT crash data, 2019-2023

Most crash reports include information on factors that contributed to the crash. A review of the crash data shows that most crashes are caused by human factors, rather than environmental conditions or vehicle issues. Looking at human factors specifically, the top three causes of crashes are:

- Driving distracted or in a careless/inattentive manner
- Failing to yield right-of-way
- Driving in an erratic, reckless, negligent, or aggressive manner

5 PROJECTED CONDITIONS

Planning for infrastructure investments requires understanding future projected conditions to anticipate needs and demands on our transportation network and evaluate different funding priorities. To get an accurate picture of the Missoula Planning Area's projected conditions through the 2050 planning horizon, a four step transportation demand model was used. This model involved the development of base year network and transportation activity zones for the year of 2022 as well as projected conditions for the future year of 2050. The transportation demand model integrated existing data such as traffic volumes, bike and pedestrian counts and American Community Survey based mode share, transit system trips, socio-economic data such as well as population growth, current and future landuse policies and data.

POPULATION PROJECTIONS

The MPO worked closely with both the City of Missoula and Missoula County to identify a consistent methodology for projecting the rate and location of future population growth as detailed in the Community Profile Appendix of the Our Missoula Land Use Plan[1]. Both City and County plans used this joint growth projection for the County and determined appropriate allocation of future population to the urban area of Missoula versus the rural portions of Missoula County. Population growth in the MPO Planning Area is shown below in the table (Figure 5-1). For adjacent counties captured in our model's transportation activity zones, ACS data was used to determine current and future growth. For further detail on the population projections methodology specific to the model reference Appendix G.

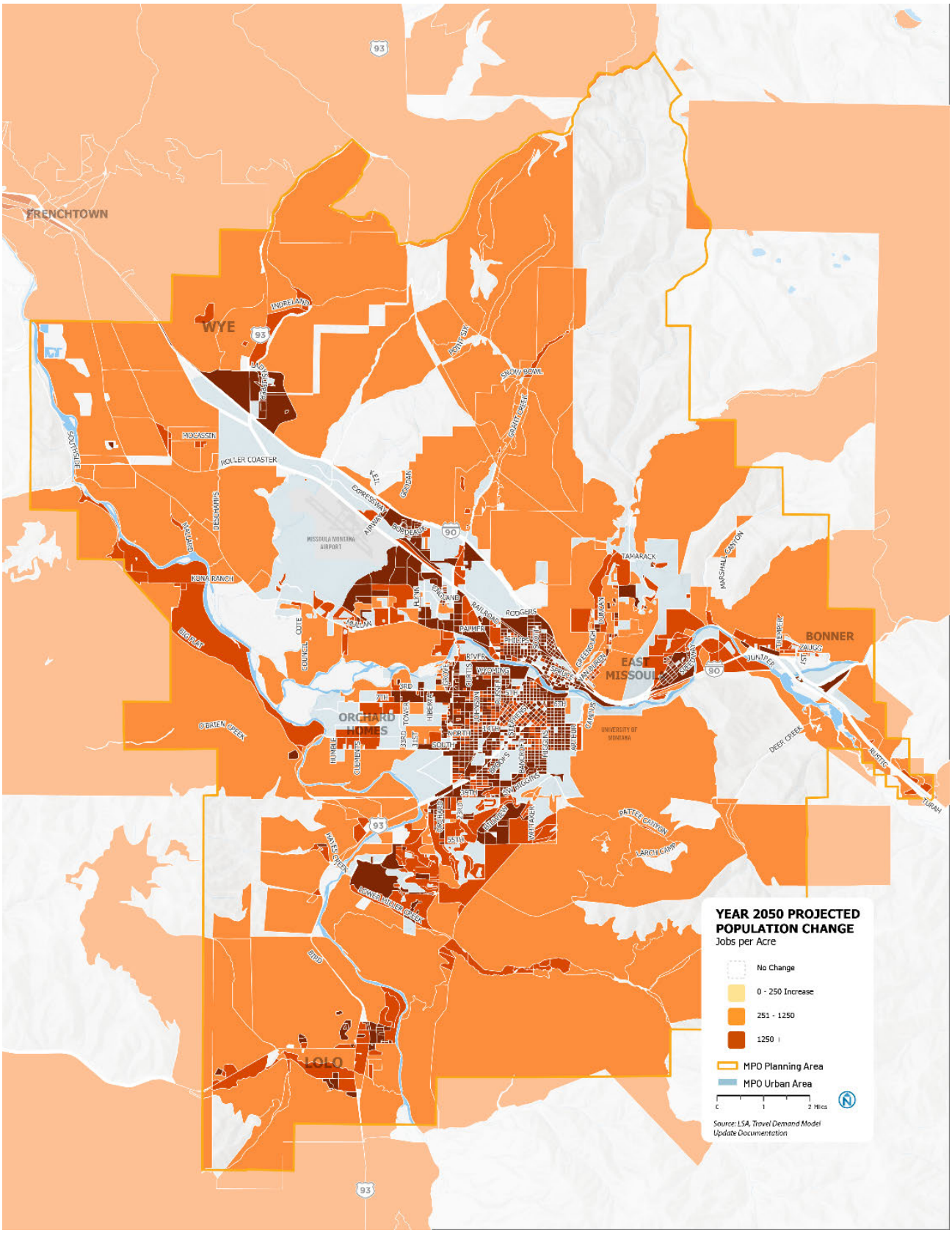
The Missoula Planning Area is poised for substantial population growth over the next 25 years with a leap in population of 55%. This additional population will contribute to significant additional trips on our region's transportation network.

Figure 5-1 Population Projections:

MPO Planning Area	2020 LRTP Estimated Population (2018)	Current Estimated Population (2022)	Projected Population (2050)	Growth (2050 - 2022)
Households	43,009	46,130	70,937	54%
Population	101,187	103,012	159,430	55%

To further understand population growth, we need to understand where it is occurring. Figure 5-1 displays the projected population change per square mile between the base year of 2022 and 2050 using model Transportation Analysis Zones (TAZs). This analysis incorporated existing land use designations, ACS population data and recent development permit data for allocation of current housing and population. Projected 2050 data integrated new land use policies developed in the Our Missoula 2045 Land Use Plan[2] and the Missoula County Land Use Element[3] to represent allowable housing densities distributed across the model TAZs. Allocation of the projected population growth followed the Strategic Growth Scenario adopted on the 2020 Missoula Connect LRTP[4] and carried forward into this LRTP update for consistency and to evaluate progress over the last four years. The Strategic Growth Scenario prioritizes inward focused development in the urban area, and focused development within areas of Missoula County with existing infrastructure, consistent with both the City and County growth plans. Strategic growth targeted specific areas that have services and are close to high-quality bus service, mixed use development, and existing transportation networks or where planned development is occurring such as the North Reserve-Scott Street area, Midtown, and the Sxwtypqen. This scenario assigned growth to areas where more households benefited from transportation infrastructure investments and created greater potential for mode shift.

Figure 5-2 2050 Projected Population Change



EMPLOYMENT PROJECTIONS:

Comprehensive transportation planning requires additional socio-demographic data such as employment locations in order to anticipate future transportation demand on the network as people travel from households to jobs or services destinations. To produce this information the model integrated current employment data which provided location, employee count and industry type. Future employment projections relied on data from the Our Missoula Land Use Plan and Missoula County Land Use Element, development permits, and information from several area plans to distribute future employment numbers accurately across the region. Additional details on employment projection methodology and TAZ allocation can be found in Appendix G (Travel Demand Model Documentation).

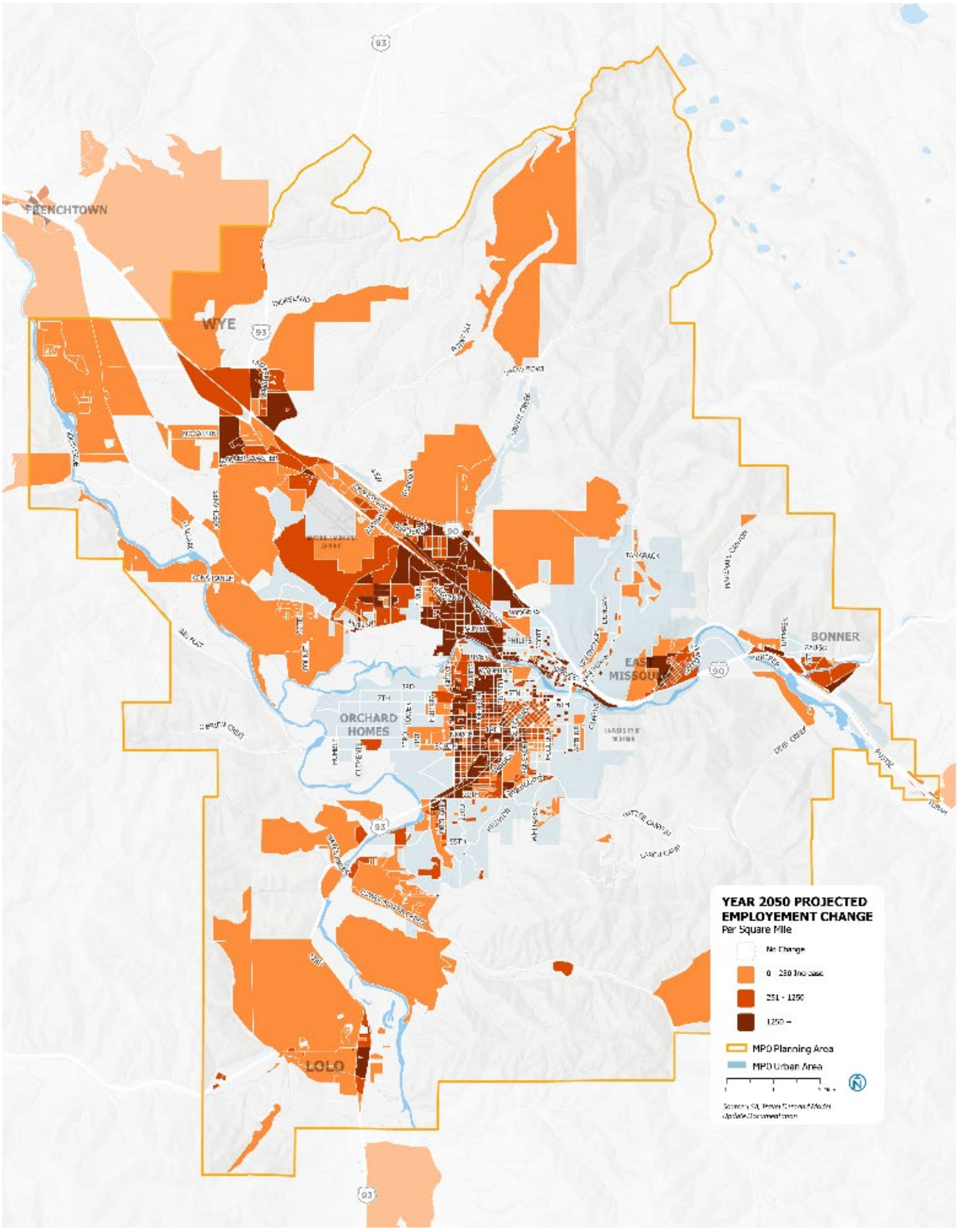
Missoula's economy, although difficult to predict, will undoubtedly experience increased employment numbers across all existing industries as the regional economy grows along with anticipated population increases. Currently the service and healthcare employment are the largest categories and are projected to remain a core component of future economic growth. Retail employment is projected to see the largest increase between now and 2050.

Figure 5-3 Employment Projections

MPO Planning Area	2020 LRTP Estimated Jobs (2018)	Current Estimated Jobs (2022)	Projected Jobs (2050)	Growth (2050 - 2022)
Retail Employment	10,209	9,007	16,252	80%
Service Employment	22,001	26,246	33,384	27%
Basic/Production Employment	11,508	12,352	18,309	48%
Educational Employment	4,882	6,409	6,392	0%
Healthcare Employment	17,113	18,578	27,149	46%
Leisure/Hospitality Employment	9,274	10,223	14,067	38%

Beyond projected growth numbers our model provides insights as to where employment growth is likely to occur. Figure 5-4 displays the projected employment changes per square mile between the base year of 2022 and 2050 future estimates. Projected 2050 data integrated new land use policies developed in the Our Missoula 2045 Landuse Plan. to capture new locations which allow for mixed-use and small-scale commercial within areas that were previously zoned exclusively for residential land uses.

Figure 5-4 2050 Project Employment Change



EXISTING AND PROJECTED NETWORK CONDITIONS:

Using projected population, housing and employment data, the model provides outputs helpful to understand changes to travel patterns within, to and from the Missoula Planning Area.

The existing transportation network or Base Year (2022) Model provides a look into the existing operations of our transportation network using the latest data available. The 2050 network conditions illustrate the impact projected growth will have on our existing transportation system, providing a look into potential needs and transportation demand throughout the region.

The following summarizes modeled 2050 transportation system conditions on the existing transportation network, without project improvements recommended in this plan update:

- Average Annual Vehicle Miles Traveled (VMT), a value reflective of the sum of vehicle trips and their distance daily within our region, increase by 591,103 or 21.9% in the Missoula Planning Area.
- Walking and biking person trips increased by 35,434 or 32% between 2022 and 2050 without any change to the transportation network but still are only shown to make up small percentage of the total mode share regionally.
- The projected conditions show an increase of 41 lane miles with a level of service (LOS) E- F rating, doubling the number of congested streets in the region by 2050.
- The Missoula Planning Area produces 418,783 daily trips with an average trip length of 6.84 miles

Figure 5-5 Existing 2022 Transportation Network Conditions

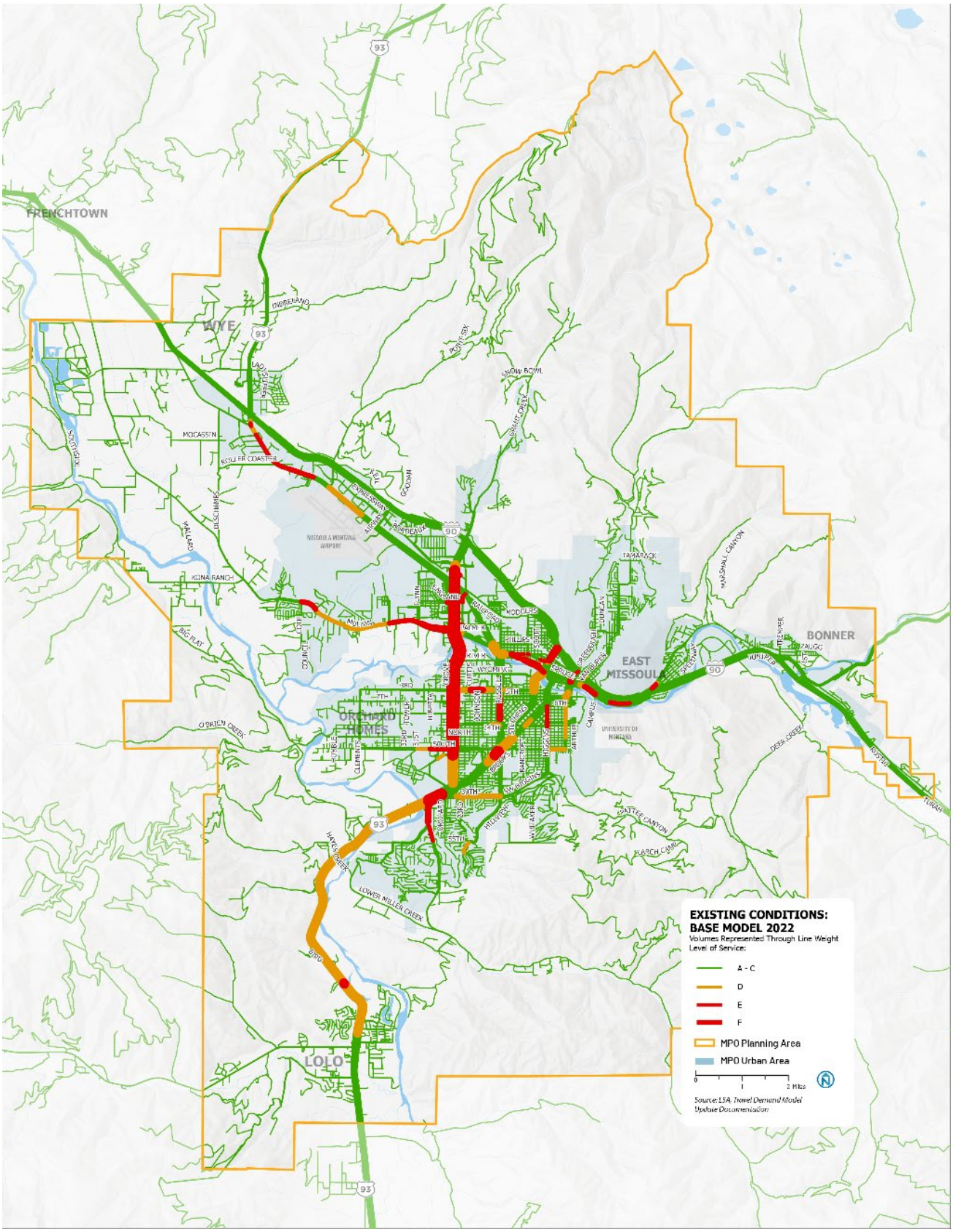
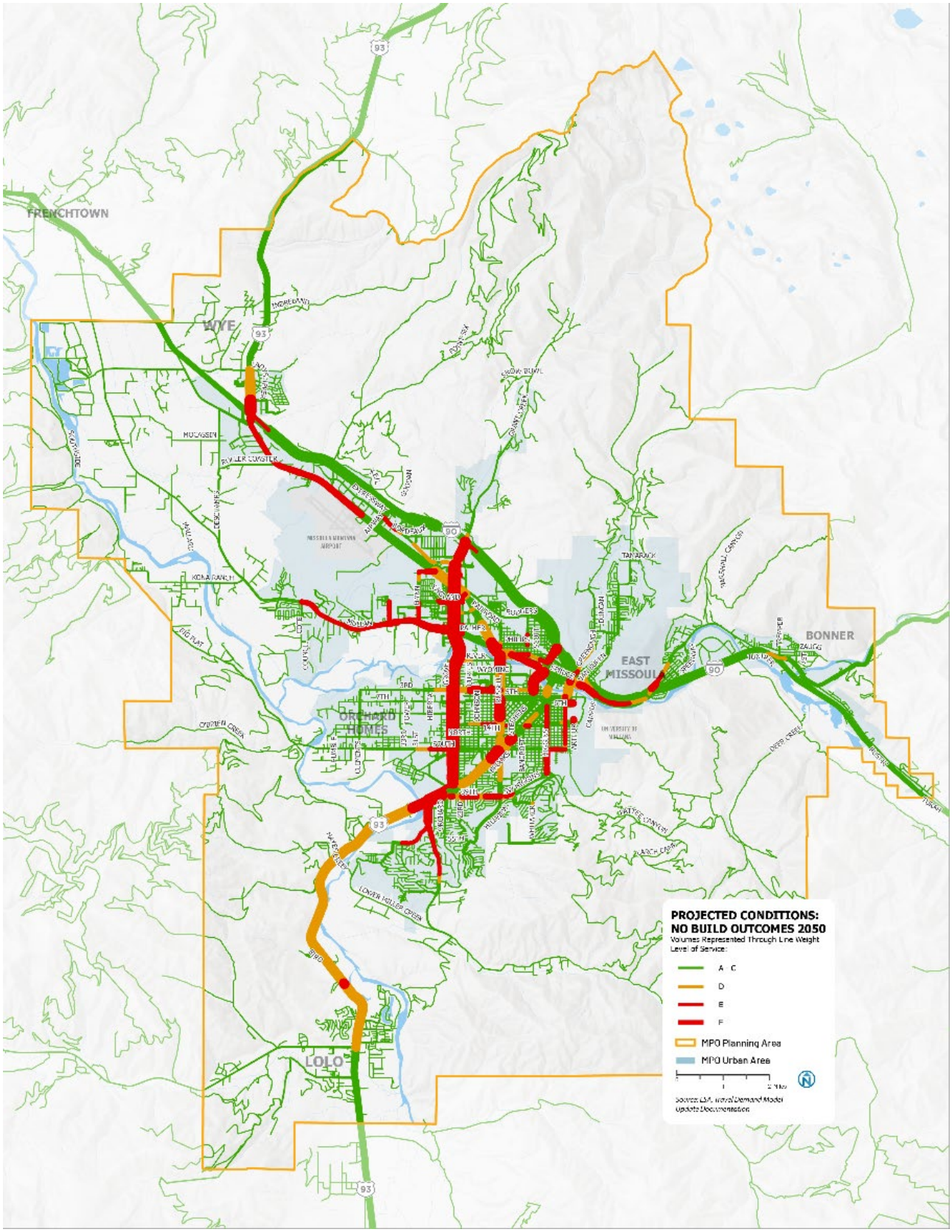


Figure 5-6 Projected 2050 Transportation Network Condition



6 MISSOULA CONNECT PERFORMANCE METRICS ANALYSIS

Missoula Connect produced a series of metrics to evaluate the performance of Missoula's transportation network. The following table is a snapshot of some key metrics included in the plan, along with time periods and targets, if available. Unless otherwise noted, data is measured for Missoula County.

Figure 6-1 Performance Measures Snapshot

Category	Metric	Definition	Period	Performance	Target	Source
Safety and Performance	Rate of serious injury and fatality from collisions per 100 million vehicle miles traveled (VMT)	Suspected serious injury	2023	7.75	No more than 5.9 serious injuries by 2020	MDT, Target from TIP
		Fatality	2023	1.48	No more than 1.28 annual fatalities by 2020	MDT, Target from TIP
	Rate of transit on-time performance	% of trips that arrive up to one minute before or five minutes after the scheduled time.	Sep–Nov, 2023	76%	N/A	MUTD
	Freight corridor travel time	Truck Travel Time Reliability Index (Statewide Data)	2018 - 2021	1.23	1.3	Montana State Freight Plan (2022)
Equity	Household connections to job centers via transit	% Households in Missoula within a 30 min transit travel time of downtown at 8 a.m. on a weekday	2024	33%	N/A	MUTD

Category	Metric	Definition	Period	Performance	Target	Source
	Average household housing and transportation (H&T) costs	% of block groups where a household with the county average median income spends over 45% of income on H&T	2023	74%	N/A	Center for Neighborhood Technology (CNT)
Infrastructure	% of lane miles of pavement in good condition	Interstate System	N/A	65%	54%	MDT, Target from TIP
		Non-Interstate System	N/A	78%	40%	
		Non-NHS Roads	N/A	44%	N/A	
	% of lane miles of pavement in poor condition	Interstate System	N/A	15%	3%	
		Non-Interstate System	N/A	10%	6%	
		Non-NHS Roads	N/A	24%	N/A	
	% of bridges in good structural condition	Structure Condition	N/A	69%	12%	MDT, Target from TIP
	% of bridges in poor structural condition	Structure Condition	N/A	5%	9%	
	% of transit assets in a state of good repair	Fixed-Route	2024	86%	66%	MUTD, Target from TIP
		Paratransit	2024	87%	86%	
Project Progress	Progress of Missoula Connect near-term projects	# of Partially Completed projects	2024	4 of 39	N/A	Missoula Connect
		# of Fully Completed projects	2024	6 of 39	N/A	Missoula Connect

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

KEY FINDINGS

- Mode share in Missoula, except for telecommuting, has not changed since 2017. **Telecommuting increased** to 10%, likely due to the COVID-19 pandemic which allowed more employees to work from home.
- **Driving remains the most common mode of transportation** for many residents and has remained the same since the Missoula Connect LRTP in 2017. A **small percentage take transit, walk, or bike**.
- Missoula is **expanding its active transportation networks** to meet the mobility needs of current and future residents.
  - Sidewalk installation will be prioritized in the following areas:
    - Areas that serve high-need communities (e.g., people without a vehicle, low-income neighborhoods)
    - Serve community destinations along the roadway (e.g., grocery store, parks, medical clinics)
    - Are located in areas with higher levels of population and employment density
  - Bicycle facilities will be added to areas northwest of Wye and west of Orchard Homes. The **bicycle network will more than double,** and nearly half of all proposed bicycle facilities will be protected, with 25.5 miles of shared-use off-street paths and 23.1 miles of buffered on-street lanes being proposed throughout the City and beyond.
- Select metrics from the Missoula Connect study were computed to gain a better understanding of the transportation network in Missoula. Some notable metrics include:
  - The **rate of serious injury and fatalities from collisions** in 2023 is **higher than the Montana DOT goals** from 2020.
  - **Household connections to job centers via transit are strong** – 75% of the households in the county can reach downtown Missoula within 45 minutes at 8 a.m. on a weekday.
  - **Many households in Missoula County struggle to cover housing and transportation costs**. 74% of block groups with the county's average median income spend over 45% of their income on housing and transportation costs.
  - **Some roadways have poor pavement conditions** – Interstate and non-Interstate roadways both have poor pavement conditions that exceeds the target.
  - **Bridges and transit assets are in a state of good repair** – Both exceed the targets set forth by the MPO.

6 CONCLUSION

This report summarizes the state of the current transportation conditions, which will be the foundation for updating the recommendations and improvements in Missoula Connect, the Long-Range Transportation Plan (LRTP), and the Transit Strategic Plan. These plans will help the region to prioritize limited funding for projects that improve mobility in the greater Missoula area. Key findings from our assessment will inform the new plans' recommendations to include a focus on affordability, mode shift, and safety.

Affordable, accessible, and high-quality transportation is essential to maintaining a thriving community. The population of Missoula has increased by 8% in the past decade, and the median home sales price has nearly doubled. Many households in the Missoula area spend over 45% of their income on housing and transportation costs, causing people to move farther out from the city to have affordable housing options. The tradeoff with moving farther away is increased transportation costs. Transportation investments can help relieve some of the financial burdens by increasing access to jobs, schools, and opportunities for everyone.

MUTD ridership on fixed-route service is slowly recovering from the pandemic. The region continues to make investments to improve service, with the most recent improvement being operating on Sundays. The strongest ridership corridors have high-frequency service with buses coming every 15 minutes. At the same time, commute mode share in Missoula, except for telecommuting, has not changed since 2017. Driving alone remains the most common mode of transportation for commuting to work for many residents and has remained the same since the 2017 Missoula Connect plan. Continued investment in transit service will be important to reduce the drive alone mode share and mitigate the impacts of additional growth.

Safety on streets is among the highest priorities to address with the LRTP. After an overall decline in crash activity during 2020, total crash numbers and Fatal and Serious Injury crashes are increasing. The rate of serious injury and fatalities from collisions in Missoula in 2023 was higher than the target Montana DOT set in 2020, and it is vital to take steps to address this. Increased transportation safety will have far-reaching benefits across our entire transportation landscape.

There is much work to be done to achieve the Missoula region's transportation vision, but there is a strong foundation on which to start for Missoula Connect and the Transit Strategic Plan.

Appendix D

Project Evaluation

PROJECT EVALUATION

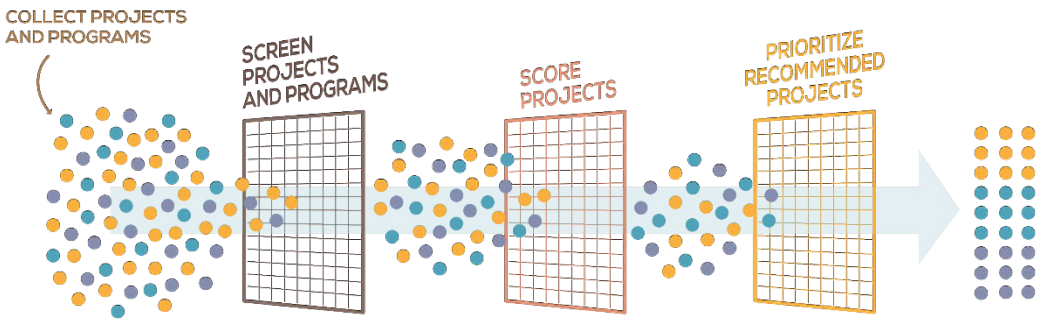
Missoula LRTP Update

UPDATED EVALUATION FRAMEWORK

This document describes how the Missoula Connect Recommended Evaluation Approach (2020) has been updated to help screen, score, and prioritize projects for funding and implementation for the MPO's update of the Long-Range Transportation Plan (LRTP) through the horizon year 2050. The purpose and process associated with this revised 4-process is as follows:

1. **Collection –** Gather proposed and potential capital transportation projects eligible for federal funding through updating the existing progress of the Missoula Connect Recommended and Illustrative project lists and input from partner agencies.
2. **Screening –** Review and filter updated project list and submitted concepts to revise project extents and map inputs, confirm project descriptions, and combine or remove duplicative, completed, or ineligible projects.
3. **Scoring –** Identify top performing projects based on location and general design features when scored against 20 quantitative metrics geared towards advancing the objectives of the five Missoula LRTP Goals.
4. **Prioritization –** Identify recommended projects to be implemented and funded by phase based on input gathered through the LRTP update community survey, in-person engagement opportunities throughout Fall 2024, MPO Advisory Committee and partner agency meetings, and an updated matrix of project prioritization questions.

Figure D-1 Missoula LRTP Update Project Evaluation Process



Step 1: Collect Projects & Programs

The project team worked with MPO staff to review the existing LRTP project list to identify which projects have been built, are in progress, or identified as no longer relevant since the adoption of the last plan in 2020. This includes all projects contained within the fiscally constrained recommended projects as well as those on the illustrative list of projects that were identified,

scored, and evaluated as part of the last plan but were not allocated funding based the prioritization evaluation process.

In order to best reflect the priorities of the entire region an agency call for projects was held from for MPO partners to submit their relevant project concepts of regional planning significant that should considered for inclusion in the LRTP.

Step 2: Screen Proposed Projects

Altogether almost 200 potential projects were collected for evaluation, which were then screened and filtered to prepare for analysis. For a project to be eligible it must be located on a County or State Road unless it is identified as regionally significant and exists within the boundaries of the Missoula MPO area. At this stage proposals which are not specifically a transportation facility capital project but more closely classified as a program, policy, study, or an initiative when have the potential to expand or enhance the provision mobility options in the Missoula area are set aside for consideration in the implementation plans once funding for recommended projects has been allocated. Eligible projects were then filtered into one of four categories:

- **Active Transportation** are projects aimed at providing dedicated space for people to walk, bike, or roll. This includes bicycle and shared facility extensions and construction, bicycle safety countermeasures, neighborhood greenways, and enhancements to the pedestrian and trail network.
- **Safety** are projects aimed at reducing conflicts and efficiently moving people through intersections and corridors. This includes intersection enhancements, roundabouts and traffic circles, and countermeasures at crossings.
- **Complete Streets** are projects designed to enable safe and comfortable mobility for travelers of all ages and abilities. This includes integration of transit priority measures, multimodal improvements, and on-street facility reconfiguration.
- **Roadways & Bridges** are projects aimed at gap closures and preservation of the roadway system which includes creation, reconfiguration, and resurfacing of streets and bridges for all modes.

Step 3: Score Projects

To identify top-ranking projects in Missoula, the project team developed a project scoring criteria using 20 quantitative metrics based on project goals outlined by the MPO. The projects were then assessed across 60 spatial variables for potential to improve network access and performance based on project location and features. Projects were tiered based on an aggregate score out of 29 available points.

Metric 1	▪				
Improve safety and promote health to enhance quality of life	• Eliminate traffic related fatalities and serious injuries Improve safety for people walking and biking • Enhance active transportation and transit linkages to lower income neighborhoods • Increase physical activity and human connections by making walking and biking convenient modes of travel • Improve access to recreational facilities and trails to support healthy lifestyles	Metric 1a	Crash Reduction	Crash analysis of fatal and serious injury crashes	1 point – Project is located within 500ft of a corridor or intersection with 2 or more crashes on average per year resulting in serious or fatal injury of any mode
		Metric 1b	Bicycle/Pedestrian Safety	Crash analysis of all bicycle and pedestrian fatal and serious injuries	1 point – Project will improve bicycle/pedestrian safety within 500ft of a corridor or intersection with 2 or more crashes on average per year involving a pedestrian or cyclist/high level of stress corridor or intersection
				Bicycle Level of Stress	
		Metric 1c	Economic Equity	Equity zone	1 point – Project is located in an Invest Health neighborhood or an Equity Zone (an area in the equity index within the top three quintiles)
				Invest in Health neighborhood	
		Metric 1d	Access to Recreational and Active Facilities	Parks	1 point – Project provides multimodal access within ½ mile of a public recreation facility, park, playground, or trail 2 points – Project directly connects to or expands multimodal access to a public recreation facility, park, playground, or trail

Metric 2					
Advance sustainability and community resilience to protect natural resources and address climate change	• Improve climate resilience and advance toward carbon neutrality Reduce transportation related air emissions • Minimize sediment, nutrients, and litter entering surface water • Expand the urban canopy and green stormwater infrastructure • Protect and enhance natural, cultural, historic resources, including agricultural lands • Create adaptable and resilient infrastructure to respond to changing needs	Metric 2a	Climate Change	Mode Shift (manual scoring)	1 point – Project will reduce VMT, SOV trips, or carbon emissions (requires manual scoring)
		Metric 2b	Natural Preservation	Critical habitat	1 point – Project is outside a floodplain, protected wetland, or critical species habitat area
				Floodplain	
				Open space	
		Metric 2c	Historic and Cultural Resources	Historic preservation sites	1 point – Project enhances multimodal access to a site(s) listed on the National Register of Historic Places
		Metric 2d	Agricultural Preservation	Agriculture preservation	1 point – Project is outside land designated for agricultural preservation
		Metric 2e	Emergency Response	One-way emergency access	1 point – Project is located on an evacuation corridor or provides a second route for areas with 1-way emergency access

Metric 3					
Expand mobility choices to improve efficiency and accessibility for people and goods	• Build complete streets and increase access to multimodal options • Increase street, trail/greenway, and sidewalk network connectivity for all ages and abilities • Optimize the efficiency and accessibility of the transportation system • Reduce person hours of delay for people driving and improve freight movement • Improve access to high quality and high frequency transit stops and routes to advance local plans	Metric 3a	Modal Density	Modal density (not yet completed)	1 point – Project increases network density for one out of three non-auto modes (sidewalk, bike/trail, transit network) 2 points – Project increases network density for two or more non-auto modes (sidewalk, bike/trail, transit network)
		Metric 3b	Network Connectivity	Bike facilities	1 point – Project contributes to one of the main multimodal networks
				Trails	
				Greenways	
				Sidewalks	
		Metric 3c	Freight	Industrial centers	1 point – Project is located on a designated truck route or is located within ½ mile of an industrial or manufacturing center
				Truck routes	
		Metric 3d	Transit Access	Transit access	1 point – Project closes a gap, removes a barrier, or improves transit operations within ½ mile of a Mountain Line or UDASH stop 2 points – Project closes a gap, removes a barrier, or improves transit operations within ½ mile of an existing Bolt! stop
				Frequent transit access	

Metric 4					
Connect and strengthen communities to create a more equitable region	• Increase affordability and reduce overall household transportation costs • Develop an integrated mobility system that connects destinations with sustainable travel options to create complete neighborhoods • Integrate land use and transportation planning to support infill development and responsible growth, and to create complete neighborhoods • Improve access to schools, jobs, parks, essential services, affordable and senior housing, and basic life needs • Engage with and invest in historically disadvantaged areas and in neighborhoods that have been adversely impacted by transportation decisions	Metric 4a	Equity	Equity zone	1 point – Project improves multimodal access in an Equity Zone
		Metric 4b	Access to Essential Services	Childcare centers Medical centers Day care centers Grocery stores Social services Schools Post offices	1 point – Project improves multimodal access within ½ mile of an essential service (drop in daycare), school, childcare facility, hospital, or health/social service provider, post office, grocery store 2 points – Project directly connects to or expands multimodal access to an essential service (drop in daycare), school, childcare facility, hospital, or health/social service provider, post office, grocery store
		Metric 4c	Sustainable Growth	Suitability hexagons	1 point – Project is located within one or more Tier 3 Composite Suitability hexagons in Our Missoula Development Guide 2 points – Project is located within one or more Tier 4 Composite Suitability hexagons in Our Missoula Development Guide
		Metric 4d	Access to Affordable or Senior Housing:	Affordable housing Nursing homes Mobile home courts Senior housing	1 point – Project is within ½ mile of existing or planned affordable or senior housing units 2 points– Project provides direct access to existing or planned affordable or senior housing units

Metric 5					
Maintain assets and invest strategically to boost economic vitality	• Bring existing infrastructure and transit assets into a state of good repair to support the regional economy, local industry, and goods movement • Balance cost effective, implementable projects with high impact projects • Plan for a transportation system that makes the best use of public financial resources • Provide a network that targets growth inward to support existing centers and mixed use development • Support access to businesses and commercial and industrial centers to enhance economic recovery and growth • Explore more equitable and sustainable funding sources for transportation projects and programs	Metric 5a	Facility Preservation	State of good repair for roads (PIC)	1 point – Project improves pavement, bridge, or transit facility with fair condition rating 2 points – Project improves pavement, bridge, or transit facility with poor condition rating
		Metric 5b	Revitalization	Urban renewal districts	1 point – Project is located within an Urban Renewal District.
		Metric 5c	Access to Employment	Levels of high employment	1 point – Improves access to key commercial and industrial employment centers for one mode 2 points – Improves access to key commercial and industrial employment centers for two or more modes

Step 4: Prioritize Projects

With a scored list of projects, the project team conducted engagement throughout the Fall of 2024 to confirm the trends identified in the scoring and learn from the community and key partners which projects outside Tier 1 should be considered for factors that may not be elevated within the spatially focused scoring process. This engagement included questions about project preferences and tiers within the community survey, open house and tabling activities to gather input on specific projects, and group listening sessions.

Prioritization work sessions were also held with MPO staff and agency partners to determine tradeoffs and feasibility constraints with projects to develop a constrained list with the greatest potential return on investment based on LRTP goals. The prioritization questions and goals are listed below.

Goal 1: Improve safety and promote health to enhance quality of life

Goal 2: Maintain assets and invest strategically to boost economic vitality

Goal 3: Expand mobility choices to improve efficiency and accessibility for people and goods

Goals 4: Connect and strengthen communities to create a more equitable region

Goals 5: Advance sustainability and community resilience to protect natural resources and address climate change

Prioritization Questions	Goals Alignment
Does the project fill a persistent multimodal network gap or deficiency in Americans with Disabilities Act (ADA) access or facilities?	Goals 1, 3, 4
Does the project support the stated needs of a local schools, social services, or economic development organizations.	Goals 1, 3, 4, 5
Does the project have stated support or previous engagement with historically disadvantaged areas that have been adversely impacted by transportation decisions?	Goal 4
Does this project support the 2020 Preferred Scenario of Enhanced Connections and Regional Equity?	Goals 1, 2, 3, 4, 5
Does the project support infill development or affordable housing for areas identified as priority for regional growth?	Goals 4, 5
Does the project improve multimodal access in an outlying area identified by Missoula County with a need for more regional connectivity to support current needs or targeted future development?	Goals 4, 5
Does the project support efforts for revitalization of an area for local business or mixed-use development (e.g., consistent with Downtown Master Plan, Midtown Master Plan, or supports community cores outside of Downtown Missoula)?	Goal 3, 5
Does the project strengthen the transportation system to provide safe travel or secondary evacuation routes during a natural disaster?	Goal 2

Does the project exceed the cost threshold (approximately $20m) for which the MPO would need receive Federally awarded grants to reasonably fund?	Goal 5
Does the project have an identified public funding source or potential for a public-private partnership?	Goal 5
Does the project address or elevate a long-standing deferred maintenance issue or structural deficiency?	Goal 5
Is the project in an advanced state of readiness (e.g., shovel ready, preliminary design)?	Goal 5
Will the project significantly increase future roadway preservation and maintenance costs?	Goal 5
Does the project support the transportation needs of local businesses and industry to move goods?	Goal 5

Appendix E

MPO Projected Revenue

Funding Sources

Program		Description
Federal		
Discretionary Programs	• BRIDGE • SS4A • INFRA • RAISE • MEGA • RURAL	Funding opportunities for roadways, bridges, and other major projects authorized under IIJA. Eligibility, allocations, and matching requirements vary by program. The continuation of these programs is unknown and will be determined as part of the next Surface Transportation Reauthorization bill. • Bridge Investment Program • Safe Streets and Roads for All (SS4A) • Rural and Tribal Assistance Pilot Program • Nationally Significant Multimodal Freight and Highway Projects Program (INFRA) • Rebuilding American Infrastructure Sustainability and Equitably (RAISE) Grants • National Infrastructure Project Assistance (MEGA) • Rural Surface Transportation Grant Program (RURAL)
Carbon Reduction Program (CRP)	CRP	Formula funding to reduce transportation emissions.
Bridge Formula Program (BR)	BR	Formula funding to replace, rehabilitate, preserve, protect, and construct bridges on public roads
National Highway Performance Program	• IM • NH • NHPB	Provides funding for the NHS, including the Interstate System and NHS roads and bridges. • Interstate Maintenance (IM) • National Highway (NH) • NHPP Bridge (NHPB)
National Highway Freight Program (NHFP)	NHFP	Funding to improve the efficient movement of freight on the National Highway Freight Network.

Highway Safety Improvement Program (HSIP)	• HSIP • RRS	Funds are apportioned for safety improvement projects included in the State Strategic Highway Safety Plan. Projects must correct or improve hazardous road location or feature or address a highway safety problem. • Railroad Crossing Improvements (RRS)
Surface Transportation Block Grant Program (STBG)	•STBG •STPP •STPS •STPU •STP •STPX •UP •TA •RTP	Funds available for projects to preserve or improve conditions and performance on state-designated Primary, Secondary, and Urban Highway Systems and some Off-System routes. • Primary (STPP) • Secondary (STPS) • Urban (STPU) • Bridge (STPB) • Off-System Routes (STPX) • Urban Pavement Preservation Program (UPP) • Transportation Alternatives (TA) Program / Recreational Trails Program (RTP)
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	• CMAQ • MACI	Federal funds available under the Congestion Mitigation & Air Quality (CMAQ) program are used to finance transportation projects and programs to help improve air quality and meet the requirements of the Clean Air Act. • CMAQ (formula) • Montana Air & Congestion Initiative (MACI)- Guaranteed & Discretionary Programs
Transit Capital and Operating Assistance Funding	FTA	The MDT Transit Section provides funding to eligible recipients through federal and state programs. • Urbanized Area Formula Grants (Section 5307) • Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310) • Formula Grants for Rural Areas (Section 5311)

		• Bus and Bus Facilities (Section 5339)
State		
State Funded Construction (SFC)	SFC	Provides funding for projects that preserve the condition and/or extend the service life of state highways
TransADE		Grant program offering operating assistance to eligible organizations providing transportation to the elderly and persons with disabilities.
State Funds for Transit Subsidies		Provides funds to offset expenditures of a municipality or urban transportation district for public transportation.
State Fuel Tax		State taxes assessed on each gallon of gasoline and clear diesel fuel sold in the state are allocated to cities and counties for the construction, reconstruction, maintenance, and repair of roads. • City and County Fuel Tax Formula Distributions
Local		
City of Missoula		Accounts for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes. • Road District (local property tax levy) • Gas Tax Apportionment • Transportation Impact Fees • Tax Increment Financing (TIF)
Missoula County		Accounts for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes. Not all of these funding sources are included in this Transportation Plan. • Road & Bridge Fund • Motor Vehicle License Fee • Gas Tax Apportionment • Rural Special Improvement District (RSID) Revolving Fund

		• Tax Increment Financing (TIF)
Missoula Urban Transportation District		The Urban Transportation District (MUTD) is a transit specific tax levy authorized by the State of Montana to help fund local transit operations. The funding level is determined by the number of mills authorized by voters within the district.
Other Potential Funding Sources		Various other sources of funding may be available in the future, pending legislation and other political decisions made by governing entities. • Grants • Special Improvement Districts (SIDs) • Property Taxes • Bonds • Parking Fees • Hotel and Visitor Tax • Public-Private Partnerships

MPO Projected Revenues	Near-term FY25-FY29 (5 years)	Medium-term: FY30-FY39 (10 years)	Long-term: FY40-FY50 (11 years)
IM*	$1,835,225	$11,244,864	$13,169,155
NH*	$29,732,885	$72,869,121	$85,338,938
MACI*	$492,654	$2,755,005	$3,226,459
STPS/SFPX/SFCN	$21,676,458	$31,465,407	$36,849,963
HSIP*	$1,157,996	$4,027,156	$4,716,308
UPP*	$257,660	$2,630,943	$3,081,166
NHFP	$5,030,000	$10,517,227	$12,317,000
Bridge*	$36,365,461	$59,062,080	$69,169,150
Federal/State Misc.	**$96,548,339**	**$194,571,803**	**$227,868,139**
CMAQ Carryover	$2,612,500		
CMAQ Programs	$1,744,940	$3,648,495	$4,263,491
CMAQ Maintenance	$1,952,379	$5,609,994	$7,415,231
CMAQ Transit	$1,915,895	$5,306,635	$4,363,954
CMAQ Total Revenue	**$10,362,922**	**$16,117,383**	**$18,875,490**
CMAQ Discretionary Funds (assuming programs & bus purchases thro	$4,749,708	$1,552,259	$2,832,815
CRP	$4,337,632	$7,565,483	$8,860,136
TA*	$6,581,045	$5,945,778	$6,963,256
STP	$19,596,403	$16,899,259	$22,135,546
Discretionary Funding	**$30,515,080**	**$30,410,519**	**$37,958,938**
Total Federal & State Discretionary $	**$40,878,002**	**$46,527,902**	**$56,834,428**
FTA Carryover (5339+5307)	$628,500		
FTA	$26,323,013		
FTA Total	**$26,951,513**	**$53,650,245**	**$86,663,270**
Transit Capital (5339 + 5310 + 30% 5311)	$6,900,985	$12,086,900	$19,524,427
Transit Operations (5307 + 70% 5311 + Transade)	$20,050,528	$41,563,345	$67,138,844
TIF (includes URDs)	**$1,577,549**	**$3,298,497**	**$3,862,956**
MUTD - Mill	$67,517,000	$146,189,455	$171,206,303
MUTD - Other	$1,435,095	$3,421,624	$4,007,154
MUTD - Total	**$68,952,095**	**$149,611,079**	**$175,213,456**
City Gas Tax - CIP	$7,821,650	$16,354,288	$19,152,935
City Road District - CIP	$2,338,950	$4,890,511	$5,727,405
City CIP Total	**$10,160,600**	**$21,244,799**	**$24,880,340**
City Gas Tax - Maintenance	$8,651,600	$18,089,630	$21,185,240
City Road District - maintenance	$21,629,000	$45,224,076	$52,963,101
City Maintenance Total	**$30,280,600**	**$63,313,707**	**$74,148,341**
City Impact Fee[%]	**$7,042,000**	**$14,724,118**	**$17,243,800**
County Gas Tax	$2,468,811	$5,162,006	$8,338,384
County Gas Tax - CIP	**$1,234,405**	**$1,290,502**	**$2,084,596**
County Gas Tax - Maintenance	$1,234,405	$3,871,505	$6,253,788
Total Local Discretionary $ (CIP)	**$20,014,554**	**$40,557,915**	**$48,071,693**
Total Discretionary $	**$60,892,556**	**$87,085,817**	**$104,906,121**
Total Federal Capital $	$67,748,996	$138,713,363	$162,450,855
Total Local Maintenance $	$31,515,005	$67,185,211	$80,402,129
State/Federal Maintenance $ (non-MPO)	$28,799,343	$55,858,440	$65,417,284
Federal Maintenance (MPO - CMAQ)	$1,952,379	$5,609,994	$7,415,231
Federal Transit $ (FTA & CMAQ)	$28,867,408	$58,956,880	$91,027,224
Local Transit $	$68,952,095	$149,611,079	$175,213,456
Federal Program $ (CMAQ)	$1,744,940	$3,648,495	$4,263,491
Total Projected Revenues	**$284,859,509**	**$552,104,156**	**$675,053,115**

Green rows indicate discretionary sources eligible to fund MPO recommended LRTP capital projects

MPO Projected Revenue

		Recipient	Federal	Non-Federal	FY25 Carryover	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	TOTALS
OTHER	(Federal and State)																															
	IM*	MDT	91.24%	8.76%		734.0	0.0	0.0	0.0	1,101.3	1,101.3	1,101.3	1,101.3	1,101.3	1,134.3	1,134.3	1,134.3	1,134.3	1,134.3	1,168.3	1,168.3	1,168.3	1,168.3	1,168.3	1,203.4	1,203.4	1,203.4	1,203.4	1,203.4	1,239.5	1,239.5	26,249.2
	NH*	MDT	91.24%	8.76%		2,653.0	466.9	19,476.6	0.0	7,136.4	7,136.4	7,136.4	7,136.4	7,136.4	7,350.5	7,350.5	7,350.5	7,350.5	7,350.5	7,571.0	7,571.0	7,571.0	7,571.0	7,571.0	7,798.1	7,798.1	7,798.1	7,798.1	7,798.1	8,032.1	8,032.1	187,940.9
	MACI**	MDT	86.58%	13.42%		0.0	222.8	0.0	0.0	269.8	269.8	269.8	269.8	269.8	277.9	277.9	277.9	277.9	277.9	286.2	286.2	286.2	286.2	286.2	294.8	294.8	294.8	294.8	294.8	303.7	303.7	6,474.1
	STPS/SFPX/SFCN	MDT	86.58%	13.42%		624.2	17,970.7	0.0	0.0	3,081.6	3,081.6	3,081.6	3,081.6	3,081.6	3,174.0	3,174.0	3,174.0	3,174.0	3,174.0	3,269.2	3,269.2	3,269.2	3,269.2	3,269.2	3,367.3	3,367.3	3,367.3	3,367.3	3,367.3	3,468.3	3,468.3	89,991.8
	HSIP**	MDT	90.00%	10.00%		241.6	522.0	0.0	0.0	394.4	394.4	394.4	394.4	394.4	406.2	406.2	406.2	406.2	406.2	418.4	418.4	418.4	418.4	418.4	431.0	431.0	431.0	431.0	431.0	443.9	443.9	9,901.5
	UPP**	MDT	86.58%	13.42%		0.0	0.0	0.0	0.0	257.7	257.7	257.7	257.7	257.7	265.4	265.4	265.4	265.4	265.4	273.4	273.4	273.4	273.4	273.4	281.6	281.6	281.6	281.6	281.6	290.0	290.0	5,969.8
	NHFP	MDT	86.58%	13.42%		1,000.0	1,000.0	1,000.0	1,000.0	1,030.0	1,030.0	1,030.0	1,030.0	1,030.0	1,060.9	1,060.9	1,060.9	1,060.9	1,060.9	1,092.7	1,092.7	1,092.7	1,092.7	1,092.7	1,125.5	1,125.5	1,125.5	1,125.5	1,125.5	1,159.3	1,159.3	27,864.2
	Bridge**	MDT	86.58%	13.42%		312.0	19,002.6	11,266.7	0.0	5,784.2	5,784.2	5,784.2	5,784.2	5,784.2	5,957.7	5,957.7	5,957.7	5,957.7	5,957.7	6,136.5	6,136.5	6,136.5	6,136.5	6,136.5	6,320.6	6,320.6	6,320.6	6,320.6	6,320.6	6,510.2	6,510.2	164,596.7
	Reconstruction/Maintenance	MDT	0.00%	100.00%		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Subtotal					5,564.8	39,185.0	31,743.3	1,000.0	19,055.3	19,055.3	19,055.3	19,055.3	19,055.3	19,627.0	19,627.0	19,627.0	19,627.0	19,627.0	20,215.8	20,215.8	20,215.8	20,215.8	20,215.8	20,822.2	20,822.2	20,822.2	20,822.2	20,822.2	21,446.9	21,446.9	518,988.3
CMAQ																																
	CMAQ	MPO	86.58%	13.42%	2,612.5	1,520.2	1,550.6	1,550.6	1,550.6	1,578.4	1,578.4	1,578.4	1,578.4	1,578.4	1,625.8	1,625.8	1,625.8	1,625.8	1,625.8	1,674.6	1,674.6	1,674.6	1,674.6	1,674.6	1,724.8	1,724.8	1,724.8	1,724.8	1,724.8	1,776.6	1,776.6	52,984.4
	Subtotal					1,520.2	1,550.6	1,550.6	1,550.6	1,578.4	1,578.4	1,578.4	1,578.4	1,578.4	1,625.8	1,625.8	1,625.8	1,625.8	1,625.8	1,674.6	1,674.6	1,674.6	1,674.6	1,674.6	1,724.8	1,724.8	1,724.8	1,724.8	1,724.8	1,776.6	1,776.6	52,984.4
CRP																																
	CRP (Carbon Reduction Program)				719.3	719.3	719.3	719.3	719.3	740.9	740.9	740.9	740.9	740.9	763.1	763.1	763.1	763.1	763.1	786.0	786.0	786.0	786.0	786.0	809.6	809.6	809.6	809.6	809.6	833.9	833.9	23,404.6
	Subtotal					719.3	719.3	719.3	719.3	740.9	740.9	740.9	740.9	740.9	763.1	763.1	763.1	763.1	763.1	786.0	786.0	786.0	786.0	786.0	809.6	809.6	809.6	809.6	809.6	833.9	833.9	23,404.6
STP	(Annually Allocated)																															
	TA**	MPO/Various	86.58%	13.42%	3,737.4	565.3	565.3	565.3	565.3	582.3	582.3	582.3	582.3	582.3	599.8	599.8	599.8	599.8	599.8	617.8	617.8	617.8	617.8	617.8	636.3	636.3	636.3	636.3	636.3	655.4	655.4	15,752.7
	STPU	MPO	86.58%	13.42%	8,554.9	1,797.2	1,797.2	1,797.2	1,797.2	1,851.1	1,851.1	1,851.1	1,851.1	1,851.1	1,906.6	1,906.6	1,906.6	1,906.6	1,906.6	1,963.8	1,963.8	1,963.8	1,963.8	1,963.8	2,022.7	2,022.7	2,022.7	2,022.7	2,022.7	2,083.4	2,083.4	58,472.4
	Subtotal					1,797.2	1,797.2	1,797.2	1,797.2	1,851.1	1,851.1	1,851.1	1,851.1	1,851.1	1,906.6	1,906.6	1,906.6	1,906.6	1,906.6	1,963.8	1,963.8	1,963.8	1,963.8	1,963.8	2,022.7	2,022.7	2,022.7	2,022.7	2,022.7	2,083.4	2,083.4	58,472.4
																																111,456.8
FTA																																
	5307 Operating & Capital†	MUTD	50.00%	50.00%	0.0	3,348.7	3,348.7	3,348.7	3,348.7	3,449.2	3,449.2	3,449.2	3,449.2	3,449.2	3,552.6	3,552.6	3,552.6	3,552.6	3,552.6	3,659.2	3,659.2	3,659.2	3,659.2	3,659.2	3,769.0	3,769.0	3,769.0	3,769.0	3,769.0	3,882.1	3,882.1	109,872.4
	5339 Capital†	MUTD	80.00%	20.00%	628.5	860.7	860.7	860.7	860.7	886.5	886.5	886.5	886.5	886.5	913.1	913.1	913.1	913.1	913.1	940.5	940.5	940.5	940.5	940.5	968.7	968.7	968.7	968.7	968.7	997.8	997.8	34,425.0
	5310 Capital†	VARIOUS	86.58%	13.42%		340.0	340.0	340.0	340.0	223.6	223.6	223.6	223.6	223.6	230.3	230.3	230.3	230.3	230.3	237.2	237.2	237.2	237.2	237.2	244.3	244.3	244.3	244.3	244.3	251.6	251.6	7,554.0
	TRANSADE	MUTD	0.00%	100.00%		479.5	479.5	479.5	479.5	449.5	449.5	449.5	449.5	449.5	463.0	463.0	463.0	463.0	463.0	476.9	476.9	476.9	476.9	476.9	491.2	491.2	491.2	491.2	491.2	505.9	505.9	14,371.7
	5311 (all expenditures)	MRTMA	86.58%	13.42%		238.3	238.3	238.3	238.3	245.4	245.4	245.4	245.4	245.4	252.8	252.8	252.8	252.8	252.8	260.4	260.4	260.4	260.4	260.4	268.2	268.2	268.2	268.2	268.2	276.3	276.3	7,753.4
	Subtotal					5,267.2	5,267.2	5,267.2	5,267.2	5,254.2	5,254.2	5,254.2	5,254.2	5,254.2	5,411.8	5,411.8	5,411.8	5,411.8	5,411.8	5,574.2	5,574.2	5,574.2	5,574.2	5,574.2	5,741.4	5,741.4	5,741.4	5,741.4	5,741.4	5,913.7	5,913.7	173,976.5
LOCAL																																
	City Gas Tax - CIP	CITY		100.00%		1,555.0	1,555.0	1,555.0	1,555.0	1,601.7	1,601.7	1,601.7	1,601.7	1,601.7	1,649.7	1,649.7	1,649.7	1,649.7	1,649.7	1,699.2	1,699.2	1,699.2	1,699.2	1,699.2	1,750.2	1,750.2	1,750.2	1,750.2	1,750.2	1,802.7	1,802.7	50,593.6
	City Gas Tax - Maintenance	CITY		100.00%		1,720.0	1,720.0	1,720.0	1,720.0	1,771.6	1,771.6	1,771.6	1,771.6	1,771.6	1,824.7	1,824.7	1,824.7	1,824.7	1,824.7	1,879.5	1,879.5	1,879.5	1,879.5	1,879.5	1,935.9	1,935.9	1,935.9	1,935.9	1,935.9	1,994.0	1,994.0	55,962.1
	City Impact Fee%	CITY		100.00%		1,400.0	1,400.0	1,400.0	1,400.0	1,442.0	1,442.0	1,442.0	1,442.0	1,442.0	1,485.3	1,485.3	1,485.3	1,485.3	1,485.3	1,529.8	1,529.8	1,529.8	1,529.8	1,529.8	1,575.7	1,575.7	1,575.7	1,575.7	1,575.7	1,623.0	1,623.0	45,550.5
	City Road District - CIP	CITY		100.00%		465.0	465.0	465.0	465.0	479.0	479.0	479.0	479.0	479.0	493.3	493.3	493.3	493.3	493.3	508.1	508.1	508.1	508.1	508.1	523.4	523.4	523.4	523.4	523.4	539.1	539.1	15,129.3
	City Road District - maintenance	CITY		100.00%		4,300.0	4,300.0	4,300.0	4,300.0	4,429.0	4,429.0	4,429.0	4,429.0	4,429.0	4,561.9	4,561.9	4,561.9	4,561.9	4,561.9	4,698.7	4,698.7	4,698.7	4,698.7	4,698.7	4,839.7	4,839.7	4,839.7	4,839.7	4,839.7	4,984.9	4,984.9	139,905.2
	County Gas Tax***	COUNTY		100.00%		490.8	490.8	490.8	490.8	505.5	505.5	505.5	505.5	505.5	520.7	520.7	520.7	520.7	520.7	536.3	536.3	536.3	536.3	536.3	552.4	552.4	552.4	552.4	552.4	569.0	569.0	15,969.2
	Tax Increment Financing/Urban Renewal$	MRA		100.00%		313.6	313.6	313.6	313.6	323.0	323.0	323.0	323.0	323.0	332.7	332.7	332.7	332.7	332.7	342.7	342.7	342.7	342.7	342.7	353.0	353.0	353.0	353.0	353.0	363.6	363.6	10,204.2
	MUTD Mill Levy	MUTD		100.00%		12,700.0	13,100.0	13,500.0	13,900.0	14,317.0	14,317.0	14,317.0	14,317.0	14,317.0	14,746.5	14,746.5	14,746.5	14,746.5	14,746.5	15,188.9	15,188.9	15,188.9	15,188.9	15,188.9	15,644.6	15,644.6	15,644.6	15,644.6	15,644.6	16,113.9	16,113.9	449,851.8
	MUTD Other Revenue#	MUTD		100.00%		275.0	275.0	275.0	275.0	335.1	335.1	335.1	335.1	335.1	345.1	345.1	345.1	345.1	345.1	355.5	355.5	355.5	355.5	355.5	366.2	366.2	366.2	366.2	366.2	377.2	377.2	10,383.8
	Subtotal					23,219.4	23,619.4	24,019.4	24,419.4	25,203.9	25,203.9	25,203.9	25,203.9	25,203.9	25,960.0	25,960.0	25,960.0	25,960.0	25,960.0	26,738.8	26,738.8	26,738.8	26,738.8	26,738.8	27,541.0	27,541.0	27,541.0	27,541.0	27,541.0	28,367.2	28,367.2	793,549.8
GRAND TOTAL					**15,533.3**	**37,368.8**	**71,419.4**	**64,377.7**	**34,034.4**	**52,942.9**	**52,942.9**	**52,942.9**	**52,942.9**	**52,942.9**	**54,531.2**	**54,531.2**	**54,531.2**	**54,531.2**	**54,531.2**	**56,167.1**	**56,167.1**	**56,167.1**	**56,167.1**	**56,167.1**	**57,852.1**	**57,852.1**	**57,852.1**	**57,852.1**	**57,852.1**	**59,587.7**	**59,587.7**	**1,597,971.5**

* There is no annual allocation for IM and NH funding sources. Revenue for 2024-2028 is based on current TIP figures, and revenue for 2029-2050 is based on a 20-year average provided by MDT, and inflated 3% every 5 years.

** There is no annual allocation for these funding sources. Revenue for 2024-2028 is based on current TIP figures, and revenue for 2029-2050 is based on average annual obligation from 2016-2024 and inflated 3% per year.

% Average of FY 2021 to 2025 Road Impact Fee estimates (note: does not include Mullan Area special impact fees)

$ Missoula Redevelopment Agency Urban Renewal District Tax Increment Funds avearge of FY 2021 to 2025 CIP transportation related infrastructure expenditures, including sidewalks, trails, roads, etc.

† 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

MUTD Other revenue includes zero-fare partnership, sponsorships, advertising, etc.

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

*** Assumption: only 50% of County gas tax revenue is available within urbanized area

Appendix F

Travel Demand Model Documentation

2025

missoula

metropolitan planning organization

travel demand model update documentation

Missoula County ~ City of Missoula
MPO
METROPOLITAN PLANNING ORGANIZATION

May 2025

LSA

TABLE OF CONTENTS

INTRODUCTION

The Missoula MPO recently conducted a targeted update to its 2021's 2050 Missoula Connect Long Range Transportation Plan (LRTP). The MPO travel model was updated to assist with the update of its 2050 LRTP development. The trip-based travel model was initially developed in 2010 using Caliper's TransCAD 5.0 and was calibrated and validated to 2010 base year. The MPO travel model includes both Missoula and Ravalli Counties as the modeling area. During this model update, the model was upgraded to TransCAD 9.0 (Build 32960) and was validated to a base year of 2022. The Missoula MPO provided input data, such as household and employment data, and validation data, such as traffic counts and transit boardings, which reflected 2022 ground conditions. The model update effort also included update to 2050 socioeconomic data to reflect most recent data available from region's forecast efforts. Neither the structure of the travel model nor the model components have been modified for this update. The model refresh included modification of inputs and calibration of model parameters for validation. This technical memorandum provides brief model documentation along with the changes conducted as part of the 2022 update. However, the additional model structure and component details can be obtained from the original 2010 model documentation. It should be noted that the model parameters have not been updated particularly to reflect post pandemic travel patterns e.g., work from home. An update to the travel model to appropriately reflect post pandemic travel would require more post pandemic data such as post pandemic census data, household travel surveys etc. The model has been revalidated to the traffic counts and transit ridership while retaining most of the pre-pandemic model parameters.

ROADWAY NETWORK

The roadway network contains basic input information for use in the travel demand model and represents real-world conditions for the 2022 base year. The roadway networks are used in the model to distribute trips and route automobile trips. The networks in the GIS environment used by the model are databases in which all kinds of information can be stored and managed. In addition, the networks provide a foundation for system performance analysis including vehicle miles of travel, congestion delay, level of service, and other performance criteria.

The roadway network is a GIS-based representation of the street and highway system in the City of Missoula and, at a reduced level of detail in Missoula and Ravalli Counties. It operates both as an input database containing roadway characteristics (such as facility type, number of lanes, and area type) and as a data repository that can be used to store and view travel model results. The roadway network is one of the foundational components of the travel model as it serves to represent the supply side of the travel demand/transportation system relationship. As such, the establishment and review of detailed network attribute data were very important to the model's development.

The roadway network is structured to contain data for multiple timeframes or a legacy network format. The roadway network prepared for the Missoula MPO Model contains the base year network and can also store forecast year improvements or alternatives. The 2022 network was developed using the existing and committed network from the 2018 model. The existing and committed improvements from the 2018 network were reviewed by the MPO and appropriate

changes were incorporated to develop the base year network. It should be noted that the improvements only constitute changes that would affect the model, such as roadway widening, construction of new a road, or closure of a road.

Network Attribute List

The roadway network contains the input attributes listed in Table 1. Additional fields can be added to the network by MPO staff or other users as desired using the standard tools available in the TransCAD software. Such fields will not be referenced by the travel model, but can be used to aid in analysis of results.

Table 1: Input Network Link Fields

Field Name	Description	Comments
ID	TransCAD Unique ID	Maintained automatically by TransCAD
Length	Link Length in miles	Maintained automatically by TransCAD
Dir	Link Direction of Flow	Direction of Flow
Name	Street Name	
Dir_yyyy	Scenario-Specific Direction Field	yyyy represents a two through four-digit year code (e.g., 09, 12, 35, 35AA) or the string "AL"
FT_yyyy	Scenario-specific facility type	
AT_yyyy	Scenario-specific area type	
AB_LN_yyyy BA_LN_yyyy	Scenario-specific directional number of through lanes	
CTLMED_yyyy	Scenario-specific presence of a center turn lane or median (1 indicates the presence of a center turn lane)	
SPLM_yyyy	Scenario-specific posted speed limit	
TIMEPEN_yyyy	Link time penalty (minutes)	This field should be used with extreme caution. It is intended for use at external stations and occasionally centroid connectors.
BIKE_yyyy PED_yyyy	Bicycle and pedestrian facility values	These fields are described in the Transit and Non-Motorized Networks section.
AB_FBAM_yyyy AB_FBAM_yyyy BA_FBOP_yyyy BA_FBOP_yyyy	Scenario-specific fields used to hold speed feedback results. These fields are optional and usually managed by the travel model interface.	Fields ending in "AL" are not present for these fields.
ALT	Primary Alternative Number	
ALT2	Secondary Alternative Number	
SUB_REGION	Link sub-region: 1 = Within the MPO 2 = Missoula County outside the MPO 3 = Ravalli County	
CountYY	Traffic count volume	

Field Name	Description	Comments
SourceYY	Traffic count source: MDT: Montana Department of Transportation CITY: Provided by the City containing the link COUNTY: Provided by the County containing the link	YY represents a two-digit year.
Count22_SITEID	MDT count station ID	
FIN_CNT	Traffic count selected for model validation	
FIN_CNTYR	Year that the validation count was collected	
EST_CNT	Estimated traffic count for use in NCHRP-255 adjustments	
BASEVOL	Calibrated base year raw model results for use in NCHRP-255 adjustments	
DO_NCHRP	NCHRP adjustments will be performed for links with a "1" in this field	
Screenlines	Identifies screenline links by screenline number	
BIKE_CNT	Bicycle count	
PED_CNT	Pedestrian count	
OTHER_CNT	Other non-motorized count	
CITY	City name	
Additional Fields	These fields are not required by the travel model and have not been fully reviewed.	
ZIP	ZIP code	
URBAN	Identifies the Missoula Urbanized Area	
CBD	Identifies the Missoula CBD	
CO	County name	
GRID	Air Quality model grid ID	
PM10	Identifies links to be included in particulate modeling	
DEICER	Identifies roadways treated with deicer	
WASH_SAND	Identifies roadways treated with sand	Added to support air quality model
MPO	Identifies links within the MPO boundary	

In addition to link attributes, several attributes are required on the node layer of the roadway network file. Centroid nodes are identified by the ZONE attribute on the node layer. Node attributes are listed in Table 2. The PNR and PULSE fields on the node layer are included to support the transit networks.

Table 2: Input Network Node Fields

Field Name	Description	Comments
ID	TransCAD Unique ID	Maintained automatically by TransCAD
ZONE	Traffic Analysis Zone Number	Populated only for centroid nodes (including external station nodes). Null for all non-centroid nodes.
SUB_REGION	Zone sub-region	This field must be consistent with the sub-region definition in the model database. Populated for centroid nodes only.
PNR_yyyy	Identifies park and ride nodes	Set to 1 for nodes where drive access to transit is permitted
PULSE_yyyy	Identifies nodes with pulsed transfers	Transfer time in minutes. Overrides the standard transfer time at nodes where this field is populated.
INT_ID	Intersection ID (Optional)	Raw modeled turn movements will be saved for nodes on which a value is present. This ID may be synchronized with a Synchro network or other traffic database.

Functional Classification

The functional classification of each roadway link reflects its role in the system of streets and highways. The term "functional classification" (FC) has specific implications with regard to the administration of federal-aid highway programs; however, travel model networks do not always adhere to these definitions. The variable named Facility Type (FT) in the model that refers to the functional classification is used to look up speed, capacity, and volume delay parameters. This will allow facility type to be changed if necessary during the model calibration and validation process. Facility type values used in the Missoula MPO Model are listed in Table 3.

Table 3: Functional Classification/Facility Type Values

Functional Type Code	Functional Classification/Facility Type
1	Freeway
2	Principal Arterial
3	Minor Arterial
4	Collector
5	Rural Highway
6	Local Street
7	Ramps
9	Centroid Connector
10	Walk/Bike Centroid Connector

Area Type

Area type is an attribute assigned to each TAZ and roadway and is based on the activity level and character of the zone. Terminal times, speed limit to freeflow speed conversion factors, roadway capacity, and volume-delay characteristics are dependent on area type. Area type is first defined at the TAZ level based on socioeconomic characteristics and then transferred to the roadway network.

Area type is an attribute that can and should vary with time. Therefore, it was important that area type definitions were specified in a manner that can be updated for future conditions based on available forecast data. While area type definitions based on external information, such as corridor characteristics (e.g., commercial versus residential) or the U.S. Census urbanized area boundary are useful in defining existing area type, this information is not very useful in defining future year area types. Area type definitions were, therefore, specified so that area type forecasts can be developed using forecast socioeconomic data. Area types used in the Missoula MPO Model include central business district (CBD), urban, suburban, and rural, as Table 4 shows.

Table 4: Area Type Categories

Area Type Code	Area Type
1	Central Business District (CBD)
2	Urban
3	Suburban
4	Rural

Zones with the CBD area type were predefined during 2015 model update and no changes to CBD area type were proposed for 2022. Initial identification of non-CBD area types was done at the TAZ level by applying the area type criteria shown in the Table 5 to non-CBD zones based on the model socioeconomic dataset.

Table 5: Area Type Model Criteria

Area Type		Population per Square Mile	Employment per Square Mile
1	CBD	n/a	n/a
2	Urban	4,000 +	4,000–19,999
3	Suburban	300–3,999	300–3,999
4	Rural	0–299	0–299

Note: For each TAZ, the densest non-CBD area type is applied for which at least one of the criteria is met.

After the initial criteria were applied, a manual smoothing process was used to determine the base year area type designation for each zone.

Link Speeds

Network speeds are used in the trip distribution model to distribute trips throughout the region and in the trip assignment model to route traffic on the roadway network. Link freeflow speeds represent average travel time, including intersection delay, needed to traverse the distance of a link with little or no traffic (i.e., no congestion effects). These speeds are generally similar to the speed limit and are calculated as a function of the speed limit, functional class, and area type. Freeflow speeds are typically lower than the speed limit to account for intersection delay on arterials, collectors, and ramps. On other facility types, the speed limit and freeflow speed may be the same.

The Missoula MPO Model uses a set of freeflow to speed limit conversion factors that minimize the difference between speed limit and freeflow speed. The factors in Table 6 are applied in the Missoula MPO Travel Model.

Table 6: Speed Limit to Freeflow Speed Conversion Factors

ID	Functional Class	Area Type			
		CBD	Urban	Suburban	Rural
1	Freeway	1(no adjustment)			
2	Principal Arterial	1			
3	Minor Arterial				
4	Collectors	1			0.85
5	Rural Highway	1			
6	Local Street	0.9			
7	Ramp	0.75			
9	Centroid Connector	1(no adjustment, values may be specified or obtained from lookup table)			
10	Walk/Bike Centroid Connector				

Link Capacities

Traffic assignment, especially capacity-constrained traffic assignment, requires accurate roadway capacity values. Capacity is used in the model to measure congestion and to determine route diversion due to congestion. This is accomplished through the use of volume-delay equations that are defined and applied in the traffic assignment model.

In the model, per-lane capacity values are retrieved from a lookup table, shown in Table 7, based on the facility type and area type of each link in the roadway network. This approach eliminates opportunities for error in defining capacities at the link level and enforces consistent application of capacity values. Hourly per-lane capacities are retrieved from a lookup table that is stored in an Access database. These hourly lane capacities are used in combination with the number of lanes present on the network to define hourly directional capacity.

The *Highway Capacity Manual* (HCM or HCM 2000) provides guidance on the definition of roadway capacity. The HCM provides link-level capacity guidelines for freeways and rural highways, but does not provide detailed link-level capacity guidelines for urban and suburban collector and arterial streets. Therefore, HCM intersection capacity was used in place of link capacity to develop capacities for these other facilities.

Table 7: Hourly Capacity per Lane

Facility Type	Area Type	Capacity per Lane
Principal Arterial	CBD	740
	Urban	920
	Suburban	960
	Rural (Expressway)	1,200
Minor Arterial	CBD	650
	Urban	760
	Suburban/Rural	790
Collector	CBD	590
	Urban	680
	Suburban/Rural	710
Local Street	CBD	550
	Urban	630
	Suburban/Rural	660

Turn Lane Adjustments

Presence of a center left-turn lane, median, or left-turn prohibitions can also affect link capacity. The intersection widening factors assumed above account for the presence of frequent left-turn lanes or medians on principal arterials, with occasional left-turn lanes and medians on minor arterials. The Missoula MPO roadway network contains a specific variable that identifies roadway corridors where medians or center left-turn lanes are present. Any corridors where all possible left turns are served by a left-turn lane are identified by this variable. To account for center left-turn lanes, the number of lanes used to compute total directional flow is adjusted as follows:

- Principal Arterial:
  - Left-turn lane present: Add 0.25 lane (0.125 lane in each direction)
  - No left-turn lane present: Subtract 0.5 lane (0.25 lane in each direction)
- Minor Arterial:
  - Left turn-lane present: Add 0.5 lane (0.25 lane in each direction)
  - No left-turn lane present: Subtract 0.25 lane (0.125 lane in each direction)

No center turn lane or median adjustments are made on expressway, collector, or local facilities

Traffic Counts

Traffic counts for 2022 were obtained from MPO and Montana Department of Transportation (MDT) and were included on the roadway network for model validation purpose.

TRANSIT ROUTE SYSTEM

The travel model uses transit and non-motorized networks to build shortest paths between each zone pair for pedestrian, bicycle, and transit trips. The resulting shortest paths are used along with paths built for vehicle trips as inputs to the mode choice model. The Missoula MPO Model uses information stored on the roadway network layer and a TransCAD route system to represent the transit and non-motorized networks. For non-motorized pathbuilding, a bicycle and pedestrian scoring system represents the varying levels of facility quality. For transit pathbuilding, the Missoula MPO Model uses the "Pathfinder" method provided the TransCAD software.

Transit routes and stops are represented within the TransCAD route system. Contents of the route system are based on schedule data from the Mountain Line and UM transit systems.

Route System Attributes

Each route is represented as a unique feature in the route system layer. Like the line layer, the route system layer includes attributes for each feature. As Table 8 shows, these attributes contain route-specific information such as route name, mode, and headway.

Table 8: Route Attributes

Field Name	Description	Comments
Route_ID	TransCAD Unique ID	Maintained automatically by TransCAD
Route_Name	Descriptive route name	These fields are used for informational and summarization purposes only
Route_No	Route number	
AM_Headway	Peak route headway	
MD_Headway	Off-peak route headway	
Mode	Transit Mode	1 = Mountain Line routes 2 = University shuttle routes
Fare	Transit fare in dollars	This value represents the average fare paid by non-university students. The fare is set to zero for UM shuttle routes.
FF_Time	Route freeflow travel time	These fields were used to calibrate the relationship between passenger vehicle and bus travel times. They are not used by the model and are retained for reference only.
PKSch_Time	Scheduled travel time	
OPSchTime		

No changes were proposed to the route system attributes during this model update. Mountain Line provided GIS shape files of the 2022 routes and stops along with their schedules. Transit route alignments, stop locations, and peak and off-peak headways have been updated to reflect the existing conditions for 2022. The headway for each transit route is calculated separately for the peak and off-peak time periods. As discussed in the Trip Assignment chapter of the original 2010 model documentation, the peak time periods include 7:00 a.m. through 8:00 a.m. and 5:00 p.m. through 6:00 p.m. For the transit system, headway is defined as the average headway for all buses starting a route within 15 minutes of the peak period. Similarly, off-peak headway is calculated as the average headway for all remaining buses. Route Headways for 2022 are shown in Table 9.

Table 9: 2022 Route Headway Assumptions

Mountain Line Route	Peak Headway (minutes)	Off-peak Headway (minutes)
Route 1	15	15
Route 2	15	15
Route 3	30	30
Route 4	60	60
Route 5	60	60
Route 6	15	30
Route 7	30	60
Route 8	60	60
Route 9	60	60
Route 11	60	120
Route 12	30	60
Route 14	60	60
Green Line	20	20
Purple Line	30	30
Red Line	15	15

NON-MOTORIZED NETWORK

The Missoula MPO Model roadway network includes attributes that describe the presence and quality of non-motorized facilities on roadway links within the MPO. In addition, multiuse paths are included in the roadway network file to allow inclusion of these facilities in the non-motorized pathbuilding process. Non-motorized paths are used to build non-motorized shortest paths for use in mode choice. The non-motorized network was also updated to 2022 conditions. The majority of changes to the non-motorized network involved inclusion of recently built off-street trails or improvements to the existing trails. The scoring system used in 2018 to rate the travel utility and attractiveness of a non-motorized facility was retained without changes during this model refresh. The scoring system uses a value from 1 to 5 do indicate the quality of bicycle facilities on each network link as shown in Table 10. While decimal values can be used, the model has been implemented using integer values only.

Initial bike scoring was been performed according to the following rules:

- Bicycles are prohibited on freeways and freeway ramps.
- All multi-use paths receive a score of 1.
- All local streets receive a score of 1.
- For Collector and Arterial Streets:
  - Adjacent multi-use path: 1
  - Collector with Bike Lane: 1
  - Arterial with Bike Lane: 3
  - Collector with no bike lane: 3
  - Arterial with no bike lane: 5

Table 10: Bicycle Scoring Values

Score	Value
1	Good Bicycle Facilities
2	Good to Moderate
3	Moderate Bicycle Facilities
4	Moderate to Inadequate
5	Inadequate Bicycle Facilities, but Bicycle Traffic is Allowed
99	Bicycle Traffic Prohibited

Pedestrian Network

The pedestrian network uses a scoring system identical to the bicycle network scoring system. Initial coding of pedestrian scores used the following rules:

- Pedestrians are prohibited on freeways and freeway ramps.
- All multi-use paths receive a score of 1.
- Local Streets:
  - Streets identified as having deficient sidewalks: 3
  - All other streets (includes all local streets outside the City of Missoula): 1
- For Collector and Arterial Streets:
  - Sidewalk or adjacent multi-use path: 1
  - Collector with a sidewalk on one side: 2
  - Collector with no sidewalks: 3
  - Arterial with a sidewalk on one side only: 4
  - Arterial with no sidewalks: 5

TRAFFIC ANALYSIS ZONES

Traffic analysis zones (TAZs) are small areas containing the land use data that are used as the foundation for trip-making in the travel model. For the Missoula MPO Model, the TAZ layer was identical to the 2000 Census block geography that was established as a part of the 2010 update.

No new zone splits were identified by the MPO during this update and therefore, the zone system from 2018 model update was retained during this update.

2022 SOCIOECONOMIC DATA

The calibration and validation of the MPO travel model to the 2022 base year requires 2022 estimates of household and employment data. Building permit data from 2016 to 2022 was provided by the Missoula MPO. Data from 2019 to 2022 was geocoded and aggregated to model TAZs and was combined with the 2018 model household data from the model to generate updated 2022 household data. For Ravalli County, countywide growth from 2018 – 2022 was obtained from American Community Survey (ACS) data. The obtained growth rate was applied at a TAZ level for all the TAZs in Ravalli County. Various quality control checks were conducted to the household data for reasonableness, such as comparing the 2022 household data to 2018 data at a TAZ level, most recent ACS data, and also by reviewing the annual growth rates by TAZ.

The MPO partnered with MDT to purchase employment data for 2022 which was provided as a GIS point layer. The employment data contained North American Industry Classification System (NAICS) code were used to classify the employment into modeling categories. This approach is consistent with the previous employment data development efforts. The employment data by employment type were aggregated to TAZs and multiple quality control checks, similar to household checks, were conducted to verify the reasonableness of the 2022 employment data. A comparison of household, population and employment data for 2018, 2022 and 2050 is shown in Table 11 below.

Table 11: Household, Population and Employment Change

Area	Socioeconomic Data Variable	2018	2022	2050	Growth (2050 - 2022)
Missoula Planning Area	Households	43,009	46,130	70,937	54%
	Population	101,187	103,012	159,430	55%
	Retail Employment	10,209	9,007	16,252	80%
	Service Employment	22,001	26,246	33,384	27%
	Basic/Production Employment	11,508	12,352	18,309	48%
	Educational Employment	4,882	6,409	6,392	0%
	Healthcare Employment	17,113	18,578	27,149	46%
	Leisure/Hospitality Employment	9,274	10,223	14,067	38%
Missoula County	Households	49,668	53,012	80,215	51%
	Population	117,080	118,565	180,408	52%
	Retail Employment	10,434	9,646	16,560	72%
	Service Employment	22,700	27,300	34,249	25%
	Basic/Production Employment	12,252	13,372	19,233	44%
	Educational Employment	5,398	7,557	7,058	-7%
	Healthcare Employment	17,290	18,737	27,398	46%
	Leisure/Hospitality Employment	9,857	10,880	14,777	36%
Ravalli County	Households	19,335	20,990	22,681	8%
	Population	45,461	49,376	53,181	8%
	Retail Employment	2,483	2,637	3,032	15%
	Service Employment	4,574	5,723	6,581	15%
	Basic/Production Employment	2,606	4,088	4,701	15%
	Educational Employment	1,536	1,822	2,095	15%
	Healthcare Employment	2,501	2,955	3,398	15%
	Leisure/Hospitality Employment	1,707	1,944	2,235	15%

TRIP GENERATION

Trip generation is the first phase of the traditional four-step travel demand modeling process. It identifies the trip ends (productions and attractions) that correspond to the places where activities occur as represented by socioeconomic data (e.g., households and employment). Productions and attractions are estimated for each TAZ by trip purpose, and then balanced at the regional level so that total productions and attractions are equal. In some cases, production and attraction allocation sub-models are applied to better represent the geographic distribution of trip-ends. The resulting productions and attractions by trip purpose and TAZ are subsequently used by the Trip Distribution model to estimate zone-to-zone travel patterns.

The trip generation model is defined such that trips are produced at home and are generally attracted to other places of activity (employment). Hence, the terms "productions" and "attractions" are the fundamental variables for defining the trip ends associated with travel. Productions generally occur at the home end of a trip; and attractions are typically associated with places of employment.

Trip Purposes

Trip purpose is used in travel models to categorize various types of household-based trips that have similar characteristics, such as location of production or attraction end, trip length, auto occupancy, and others. In this manner, trip rates by trip purpose are sensitive to the specific socioeconomic data associated with each trip type. In general, it is advisable to disaggregate trips by trip purpose only to the point that the base and horizon year activity data can support them.

The current Missoula MPO model includes the following six trip purposes, which were retained for the 2022 update.

- Home-Based Work (HBW): Commute trips between home and work and vice versa (e.g., includes trips between work and home).
- Home-Based Shop (HBS): Trips between home and shopping locations for the purpose of shopping.
- Home-Based University (HBU): Trips between home and the university campus for school related purposes by people not employed by the University (i.e., students and visitors).
- Home-Based Other (HBO): All other trips that have one end at home. These can include trips between home and appointment, home and recreation, etc.
- Work-Based Other (WBO): Work-related trips without an end at home.
- Other-Based Other (OBO): Trips with neither an end at home nor a work-related purpose.

Production Rates

The Missoula MPO Model uses a bivariate trip production model. The production model uses average household size and income for each TAZ to determine the general trip-making characteristics of a household. The average household size and income were obtained from

most recent 2020 decennial U.S. Census data. The model uses household disaggregation models to estimate the univariate distribution of households by size and by income group for each TAZ. Once these distributions have been estimated, the model uses an iterative proportional factoring (IPF) process to develop bivariate distributions of households by income and size for each TAZ. Since these data are available from the most recent 2020 decennial Census data at a block level, both univariate and bivariate distributions of household size and income were updated during this model refresh. These univariate and bivariate household distributions were previously updated during 2010 model update. The average household size from 2020 census data was used with the number of households to estimate the total population of the county, which was confirmed with ACS population data as a reasonableness check.

Production rates from the 2018 model were used as an initial estimate and the production rates were adjusted during the 2022 model validation to represent the trip activity (traffic counts) in the region. Final production rates are shown in Table 12.

Table 12: 2022 Trip Production Rates

Trip Purpose	Household Income	Household Size				
		1	2	3	4	5+
HBW	Low Income (up to $19,999)	0.51	0.92	1.87	1.87	1.87
	Medium Income ($20,000–$74,999)	1.19	3.28	2.86	3.21	4.32
	High Income ($75,000 or more)	1.34	3.28	3.80	3.14	4.22
HBO	Low Income (up to $19,999)	1.74	2.37	5.12	6.93	12.50
	Medium Income ($20,000–$74,999)	1.74	2.54	5.50	9.43	12.41
	High Income ($75,000 or more)	2.01	2.70	6.87	10.23	21.30
HBS	Low Income (up to $19,999)	0.61	1.60	1.75	1.75	1.75
	Medium Income ($20,000–$74,999)	0.77	2.02	1.08	2.14	2.14
	High Income ($75,000 or more)	1.00	2.02	1.57	2.13	2.13
OBO	Low Income (up to $19,999)	1.80	1.80	2.61	2.61	2.61
	Medium Income ($20,000–$74,999)	1.61	1.93	3.44	5.19	5.19
	High Income ($75,000 or more)	1.61	1.92	3.97	5.88	5.88
WBO	Low Income (up to $19,999)	0.39	0.74	0.86	0.86	0.86
	Medium Income ($20,000–$74,999)	0.65	0.82	1.37	1.37	1.37
	High Income ($75,000 or more)	1.14	1.43	1.50	1.98	2.05

HBU	Low Income (up to $19,999)	1.07	1.07	1.07	1.07	1.07
	Medium Income ($20,000–$74,999)	1.07	1.07	1.07	1.07	1.07
	High Income ($75,000 or more)	1.07	1.07	1.07	1.07	1.07

Attraction Rates

Attraction rates are used to identify the ends of trips that occur at locations other than the trip-maker's home. For home-based trips, the attraction end of a trip occurs at a non-residential location, or occasionally at another person's home. For WBO trips, trip productions occur at the trip maker's workplace and the trip attraction occurs at the non-work end of the trip. For OBO trips, the trip production and attraction are synonymous with trip origin and destination. For non-home-based trip purposes, allocation models and special procedures are used to properly locate the production and attraction end of each trip. Similar to production rates, attraction rates from the 2018 model were used as an initial estimate but adjusted during model validation. Final attraction rates are shown in Table 13 below.

Table 13: 2022 Trip Attraction Rates

Socioeconomic Variable	HBW	HBS	HBO	WBO	OBO	HBU	WBO_PA
Basic Employees	1.76	0.01	0.29	0.06	0.17	0.00	1.01
Retail Employees	1.44	3.25	2.82	2.22	7.01	0.00	0.68
Service Employees	1.50	0.07	1.75	0.33	0.87	0.00	1.26
Education Employees	1.45	0.46	16.06	1.13	3.80	0.00	1.10
Health Employees	1.45	0.02	3.35	0.55	1.32	0.00	1.02
Leisure Employees	1.24	2.39	1.39	2.53	3.60	0.00	0.47
Total Households	0.00	0.02	1.04	0.16	0.56	0.00	0.00

Special Generator

Missoula is home to the University of Montana (UM). Because the university is a four-year college, students tend to live on campus or in households concentrated near the university. This suggests that a special university trip purpose and allocation model can improve representation of university trips in the travel model.

The UM campus is separated into four traffic analysis zones. Because universities do not follow the normal trip patterns used by the model, some special considerations were given to trip types at UM. In particular, the Home-Based University (HBU) trip purpose is defined as a trip by a university student or visitor between home and any location on the university campus. Trip ends at the University are associated with University faculty and staff, students living on campus, and students and visitors living off campus and described as follows:

- HBW, HBS, and HBO Productions: These production trip ends can occur only for students living on campus.

- HBW Attractions and WBO Productions: These trip ends can occur only for University faculty and staff.
- WBO Attractions and all OBO Trips: These trip ends can only occur for students and visitors living off campus.
- HBS and HBO Attractions: These trip ends cannot occur at the University. All home-based trips to the University by students and visitors are considered HBU trips and all home-based trips to the University by faculty and staff is considered HBW trips.
- HBU Productions: Trips within the University are not modeled, so HBU productions cannot occur on campus.
- HBU Attractions: HBU attractions can occur only for students and visitors living off campus.

The travel model uses a production allocation model to represent the geographical distribution of the trips made by the university students. The special generator inputs include the student enrollment and the total number of employees at the university, which determines the magnitude of university trips. 2022 Enrollment data were obtained from the UM website. The enrollment for 2022 was same as 2018 enrollment data used for the model update. So it was decided to retain 2018 UM special generator data for 2022. The employment and enrollment data are shown in Table 14 and the special generator values by trip purpose are shown in Table 15.

Table 14: UM Employment and Enrollment

Faculty	594
Staff	1,002
Total Faculty and Staff	**1,596**
On-Campus Students	2,876
Off-Campus Students	7,424
Total Enrollment	**10,300**

Table 15: 2022 University Special Generator Values

Trip Purpose	Trip Rate	Unit	Special Generator Value
HBW Productions	0.22	On Campus Students	821
HBW Attractions	1.6	FTE Employment	3,314
HBS Productions	0.2	On Campus Students	746
HBS Attractions	n/a	n/a	0
HBU Productions	n/a	n/a	0
HBU Attractions	3.8	Off Campus Student	36,586
HBO Productions	0.5	On Campus Students	1,865
HBO Attractions	n/a	n/a	0
WBO Production	0.37	FTE Employment	766
WBO Attractions	0.19	Off Campus Student	1,829
OBO Productions	0.25	Off Campus Student	2,407
OBO Attractions	0.25	Off Campus Student	2,407

No changes were suggested to the 2018 university allocation model parameters as enrollment magnitude had not changed and the student address information was not readily available.

External Trips

In addition to the internal-internal trips that occur entirely within the modeling area, the model includes external travel from outside of the region. Trips with one end inside the modeling area and the other outside of the area are called Internal-External (IE) and External-Internal (EI) trips. Through trips, or External-External (EE) trips, are those that pass through the modeling area without stopping (or with only short convenience stops).

External travel is modeled explicitly at the external stations where roadways cross the model boundary. The seven external stations in the MPO model are consistent with the 2018 travel model. The external trips were determined using the 2022 traffic counts at these external stations, which were obtained from the MDT.

The first step in estimating external travel for the model is to determine the average weekday traffic at each location in the base year. Next, it is necessary to determine the split between the EE and IE/EI trips at each external station. This was accomplished using guidance provided in NCHRP Report 365 along with a manual review of external station locations, volumes and connections to other regions. Only a few external stations are assumed to carry a significant number of EE trips. 2022 volumes, EE and IE/EI split assumptions are shown in Table 16.

Table 16: 2022 External Travel Assumptions

External Station	Location	Total Volume	% EE	% IE/EI	EE Trips	IE/EI Trips
5001	Hwy 93 S	950	6%	94%	55	895
5002	I-90 East	11,108	48%	52%	5,381	5,727
5003	I-90 West	9,050	48%	52%	4,376	4,674
5004	Hwy 93 N	8,405	7%	93%	569	7,836
5005	Hwy 200 E	2,663	6%	94%	161	2,502
5006	Hwy 83 N	1,206	0%	100%	0	1,206
5007	Hwy 12 W	746	6%	94%	44	702

A significant number of EE trips are only assumed to occur at a subset of external stations. EE trips are further restricted to only occur between a subset of all remaining external station pairs. Over the course of a day, the total number of EE trips at each external station is assumed to be equal for both directions (inbound trips = outbound trips). This assumption is used to develop total inbound and outbound trips at each external station. IE/EI and EE volumes were developed using the 2022 traffic counts and an approach consistent with the 2018 approach. 2022 External-External trips are shown in Table 17.

Table 17: 2022 24-hour EE Trip Table

		5001	5002	5003	5004	5005	5007	TOTAL
		Hwy 93 S	I-90 East	I-90 West	Hwy 93 N	Hwy 200 E	Hwy 12 W	
5001	**Hwy 93 S**	0	0	0	0	30	0	**30**
5002	**I-90 East**	0	0	2,143	285	0	21	**2,449**
5003	**I-90 West**	0	2,355	0	0	49	0	**2,404**
5004	**Hwy 93 N**	0	313	0	0	0	0	**313**
5005	**Hwy 200 E**	28	0	45	0	0	1	**73**
5007	**Hwy 12 W**	0	23	0	0	1	0	**24**
TOTAL		**28**	**2,691**	**2,188**	**285**	**80**	**22**	**5,293**

Sub-Region Trip Rate Factors

The 2010 model validation efforts suggested that residents of rural Missoula and Ravalli Counties tend to make fewer home-based trips. Instead, these residents tend to link multiple trips together, resulting in more non-home based trips. During model validation, several regional commercial centers were observed to be under-producing trips; therefore, the model applies trip rate factors to increase trip attractions at these locations. 2018 trip rate factors were adopted as the initial starting point and were updated during the model validation. Updated jurisdictional trip rate factors are show in Table 18.

Table 18: Jurisdictional Trip Rate Factors

Subregion		HBW		HBS		HBU		HBO		WBO		OBO		WBO_PA
		P	A	P	A	P	A	P	A	P	A	P	A	
1	CBD	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Urban MPO	1	1	1	1	1	1	1	1	1	1	1	1	1
3	Suburban MPO	1	1	1	1	1	1	1	1	1	1	1	1	1
4	Rural MPO	0.64	0.75	0.64	0.64	1	1	0.64	0.64	0.75	0.64	0.75	0.64	0.75
5	Missoula County (Non-MPO)	0.5	1	0.5	0.5	1	1	0.5	0.5	1	0.5	1	0.5	0.5
6	Ravalli County	0.7	1	0.53	0.95	1	1	0.5	0.75	0.86	0.53	0.96	0.53	0.53
99	Regional Commercial	1	1	1	3.75	1	1	1	3.125	1	3.75	3.75	3.75	1

TRIP DISTRIBUTION

Trip distribution is the second phase of the traditional four-step demand model. Trip distribution is the process through which balanced person trip productions and attractions from the trip generation model are apportioned among all zone pairs in the modeling domain by trip purpose. The resulting trip table matrix contains both intrazonal (e.g., trips that do not leave the zone) on the diagonal and interzonal trips in all other zone interchange cells for each trip purpose.

The Missoula MPO Model uses a standard gravity model equation and applies friction factors to represent the effects of impedance between zones. As the impedance (e.g., travel time and spatial separation) between zones increases, the number of trips between them will decrease as represented by a decreasing friction factor. This is similar to the standard gravity model, which assumes that the gravitational attraction between two bodies is directly proportional to their masses. The trip distribution model makes a similar assumption in that the number of trips between two zones is directly proportional to the number of productions and attractions contained in those zones.

The gravity model used by trip distribution to estimate the number of trips between each zone pair is defined in Equation (1).

$$T_{ij} = P_i \frac{A_j \cdot F_{ij} \cdot K_{ij}}{\sum_{i=1}^{n} (A_j \cdot F_{ij} \cdot K_{ij})} \quad (1)$$

Where:

Tij	=	trips from zone i to zone j
Pi	=	productions in zone i
Aj	=	attractions in zone j
Kij	=	K-factor adjustment from i to zone j
i	=	production zone
j	=	attraction zone
n	=	total number of zones
Fij	=	friction factor (a function of impedance between zones i and j)

K-factors are often used in travel demand models to account for nuances in travel behavior and the transportation system that cannot be accurately modeled with simplified aggregate modeling techniques. They are often applied at the district or jurisdictional level to adjust regional distribution patterns. They may be applied by trip purpose or for all trips. No K-were proposed or used during this update similar to previous model updates.

To implement trip distribution by time of day, factors representing the portion of trips occurring in the peak (combined a.m. and p.m. peak hours) and off-peak (all other times) are necessary. Peak hour trips are further separated in the time of day step prior to traffic assignment. The trip

distribution time of day factors were retained from the previous model update as shown in Table 19.

Table 19: Peak and Off-Peak Trip Percentages by Purpose

	HBW	HBS	HBU	HBO	WBO	OBO
Off-Peak	0.651	0.923	0.851	0.805	0.771	0.910
Peak	0.349	0.078	0.149	0.195	0.228	0.090

Roadway Network Shortest Path

The impedance portion of the gravity model equation is based on shortest paths between each zone pair. Each shortest path is determined through a process called pathbuilding. This process identifies shortest route between two network centroids that minimizes an impedance variable. Shortest paths cannot pass through other centroid connectors. Various data, such as path distance, can be "skimmed" along the shortest impedance route. The set of all zone to zone shortest paths is called a "shortest path matrix" and is sometimes referred to as a "skim matrix" with the understanding that the skimmed variable may differ from the variable(s) used to determine the shortest path.

The Missoula MPO Model finds shortest path between each zone pair based on peak or off-peak congested travel time. Peak travel time is defined as the a.m. peak hour directional travel time, while off-peak travel time is defined as the off-peak period congested travel time. Travel times are calculated using a speed feedback process, which is described further in the Traffic Assignment section.

Terminal Times

Terminal penalties are applied in the model to the shortest paths. They simulate several travel-related variables, such as the time to locate a parking space, walking to a final destination, paying for a parking space, etc. Terminal penalties, shown in Table 20, are added to both the production and attraction end of each zone pair based on the area type of each zone.

Table 20: Terminal Penalties by Area Type

Area Type		Terminal Time
1	CBD	1.5
2	Urban	1
3	Suburban	1
4	Rural	0.75

Friction Factors

Friction factors represent the impedance to travel between each zone pair. The Missoula MPO Model applies the friction factors in the form of gamma functions for each trip purpose. The gamma function is defined by Equation (2).

$$F_{ij} = \alpha t^{\beta} e^{\gamma t} \qquad (2)$$

Where:

F_{ij} = *friction factor between zones i and j*

T = *travel time*

α, β, γ = *calibration parameters*

Friction factors for the HBW trip purpose were calibrated to the worker flow and reported work commute time data obtained from the 2022 5-year ACS data. The calibration targets and model results for HBW trips are shown in Figure 1 (see following page).

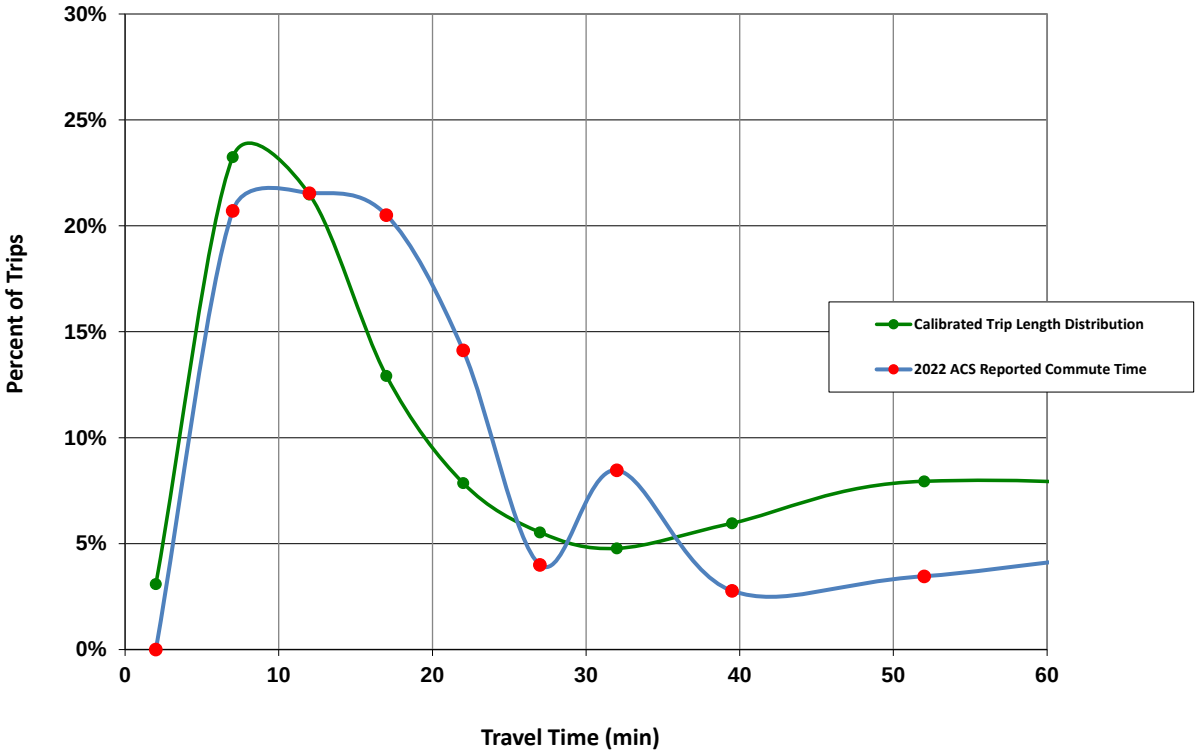
In addition to friction factor adjustments, other model variables and parameters including terminal penalties, intrazonal travel times, volume/delay equations, and K-factors can affect calibration of trip length distribution curves. These variables were monitored during model validation.

Although local data from the ACS can be used to estimate HBW friction factors, no other local data are available to calibrate friction factors for the other trip purposes. Trip lengths for non-HBW trip purposes are based on a pivot-point analysis using average trip length/time relationship from the 2018 model. Table 21 contains the calibrated gamma function parameters.

Table 21: Friction Factor Gamma Parameters

Trip Purpose	Alpha	Beta	Gamma
HBW	1000	0.064	0.066
HBS	1000	0.139	0.177
HBO	1000	0.139	0.190
HBU	1000	0.139	0.190
WBO	1000	0.098	0.173
OBO	1000	0.161	0.259

Figure 1: HBW Trip Time Distribution



MODE CHOICE

The Missoula model produces and distributes all person trips including non-motorized, carpool, and transit trips. The mode choice model separates the resulting person trip tables into the drive alone, shared ride (i.e., carpool), transit (walk access and drive access), and non-motorized (bicycle and walk) modes. Information about transit routes and the quality of bicycle and pedestrian facilities provides important input to the mode choice model. The mode choice model also considers trip lengths produced by the gravity model, resulting in sensitivity to higher density and mixed-use areas. Such areas will produce shorter trips that are more likely to be made using non-motorized modes.

The Missoula Model includes a logit-based mode choice model that is applied for trips within the MPO boundary. Mode choice is applied using a nested logit model that addresses both motorized and non-motorized modes. Nested logit models represent the current "best-practice" for mode choice modeling. This structure first separates motorized trips from walk and bicycle trips, then separates drive alone, shared ride, and transit trips. Transit trips are further separated into drive and walk access in a third level.

Missoula Model Parameters

Mode choice model coefficients are based on FTA New Starts guidelines that specify preferred ranges for certain model coefficients. These ranges were developed based on extensive review of mode choice model performance and accuracy. The general guidelines are summarized in Table 22.

Table 22: New Starts Coefficient Guidelines

Coefficient	Minimum Value	Maximum Value
In-Vehicle Travel Time (IVTT)	-0.030	-0.020
Out of Vehicle Travel Time (OVTT)	-0.090	-0.040

The coefficient for out of vehicle travel time should be between 2 and 3 times the in-vehicle travel time coefficient.

The logit mode choice model specification implies a value of time that is equal to the coefficient for in-vehicle travel time divided by the coefficient of cost. FTA guidelines state that the value of time should be between one-quarter and one-third the median or average income. For HBW trips, the median income is computed separately for each income group as shown in Table 23. For other trip purposes, the value of time is based on the regional median income.

Table 23: Median Incomes and Values of Time Ranges

Market Segment	Low value of time ($/hour)	High value of time ($/hour)
Low Income ($22,689)	$2.70	$3.60
Medium Income ($36,958)	$4.40	$5.90
High Income ($57,273)	$6.90	$9.20
Regional ($34,542)	$4.20	$5.50

This Missoula MPO mode choice model uses the average allowable coefficient for in-vehicle travel time. For work and university trips, the out of vehicle coefficient is specified to be two times the in-vehicle coefficient. For other trips, the out of vehicle coefficient is specified to be

three times the in-vehicle coefficient. Value of time assumptions use the highest allowable value of time for work and university trips, with the lower value of time for the remaining trip purposes. The resulting coefficients are listed in Table 24.

In addition to time and cost coefficients, the mode choice model uses geographic "dummy" variables to represent the increased likelihood of trips to the central business district or university to be transit trips. The coefficients for these variables vary by mode and are adjusted during model calibration.

The non-motorized modes also include a transit network score. The transit network score is computed as the distance-weighted average transit score over the course of a trip.

Table 24: Mode Choice Model Coefficients

Coefficient	HBW	HBS	HBU	HBO	WBO	OBO
IVTT	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025
OVTT	-0.065	-0.065	-0.065	-0.065	-0.065	-0.065
Cost	—	-0.31	-0.31	-0.31	-0.31	-0.31
Cost (Low Income)	-0.47	—	—	—	—	—
Cost (Med. Income)	-0.29	—	—	—	—	—
Cost (High Income)	-0.19	—	—	—	—	—
CBD Dummy	0.009	0.009	0.009	0.009	0.009	0.009
University Dummy	0.009	0.009	0.06	0.009	0.009	0.009
Walk Score	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025
Drive Score	-0.025	-0.025	-0.025	-0.025	-0.025	-0.025

Note: Travel time is in units of minutes and cost is in units of dollars.

In model application, the above-defined coefficients are multiplied by variables obtained in the transit, non-motorized, and roadway pathbuilding process. The results of the pathbuilding process produce a number of variables that are not immediately consistent with the model coefficients. Variables from pathfinding are each matched with one of the coefficients described above using the information shown in Table 25. Alternative-specific constants are shown in Table 26.

Table 25: Mode Choice Model Variables

Variable Name	Units	Applicable Modes	Coefficient
Origin terminal time	Minutes	Drive alone, shared ride, drive to transit	OVTT
Destination terminal time	Minutes	Drive alone, shared ride	OVTT
Drive time	Minutes	Drive alone, shared ride, drive to transit	IVTT
Parking cost	Dollars	Drive alone, shared ride	Cost
Vehicle operating cost	Dollars	Drive alone, shared ride, drive to transit	Cost

Variable Name	Units	Applicable Modes	Coefficient
Access walk time	Minutes	Walk to transit	OVTT
Transfer walk time	Minutes	Walk to transit, drive to transit	
Initial wait time (First 7.5 minutes)	Minutes	Walk to transit, drive to transit	OVTT
Initial wait time (Time over 7.5 minutes)	Minutes	Walk to transit, drive to transit	IVTT
Transfer wait time	Minutes	Walk to transit, drive to transit	OVTT
Transfer penalty time	Minutes	Walk to transit, drive to transit	OVTT
Transit ride time	Minutes	Walk to transit, drive to transit	IVTT
Transit fare	Dollars	Walk to transit, drive to transit	Cost
CBD Dummy	n/a	All except drive alone	CBD Dummy (Transit only)
University Dummy	n/a	All except drive alone	University Dummy (Transit only)
Walk time	Minutes	Walk	OVTT
Average Walk score	n/a	Walk	Walk Score
Bike time	Minutes	Walk	OVTT
Bike Walk score	n/a	Walk	Walk Score

The observed mode share for transit is based on the number of boardings from Mountain Line's Automatic Passenger Counts (APC) data, whereas the non-motorized shares were obtained from the 2022 5-year ACS data. The 2022 average daily transit boardings were provided by Mountain Line for transit calibration. The percentage distribution of transit trips by trip purpose was retained from the 2018 model. A similar approach was used for vehicle trips (Drive Alone, Shared Ride2, Shared Ride2+), bicycle and walk modes. No modifications were made to the auto occupancy rates from the 2018 model. However, the 2022 mode choice calibration involved changes to the alternative-specific constants and did not involve any modifications to the mode choice coefficients, value of times, or any of the cost variables.

Table 26: 2022 Alternative-Specific Constants

Trip Purpose	Drive Alone	Shared Ride	Walk to Transit	Drive to Transit	Walk	Bike
HBW	0	-1.936	-2.058	0	0.002	-2.006
HBS	0	-0.310	-2.517	0	-0.084	-2.502
HBU	0	-1.219	-0.623	-1.777	0.546	-0.590
HBO	0	-0.050	-2.577	0	1.392	-1.895
WBO	0	-1.735	-3.005	0	-0.514	-2.755
OBO	0	0.000	-2.939	0	-0.307	-3.074

TRAFFIC ASSIGNMENT

The Missoula MPO model includes a time of day component that disaggregates the vehicle trip tables into a.m. peak, p.m. peak, and off-peak periods. The most recent 2022 traffic count data contained daily counts and did not contain hourly information; therefore, time of day factors from the 2010 model were adopted for this update. The time of day factors for the 2010 model were developed using hourly traffic count data available during the update.

The Traffic Assignment module loads the travel demand as represented by the time of day vehicle trip tables onto the roadway network, which is the supply side of the model. The Missoula MPO Model currently uses the equilibrium traffic assignment method, which was selected based on the region, its needs, and the professional experience from tried-and-true methods.

Convergence

When equilibrium traffic assignment is used, oscillations between equilibrium iterations can sometimes result in unstable assignment results. If closure criteria are not sufficient, two very similar model runs (e.g., with only one small adjustment to the roadway network) can produce counter-intuitive results. This generally occurs when the equilibrium traffic assignment algorithm converges at a different number of iterations—sometimes only one iteration difference—for each run. Even when equilibrium traffic assignment converges after the same number of iterations, alternating oscillations in traffic volumes can sometimes be observed in traffic assignment results based on slightly different model networks. While oscillations introduced by the equilibrium traffic assignment procedure can be of concern, they can be managed through introduction of a very tight closure criterion. Traffic assignment is performed with a closure gap of 0.0001 (10-4) and a maximum number of iterations of 500.

Volume Delay Parameters

A volume-delay function represents the effect of increasing traffic volume on link travel time in the assignment process. While several volume delay functions are available for consideration, the most commonly used function is the modified Bureau of Public Roads (BPR) function shown in Equation (3). Alpha and beta values were specified during 2010 model update based on experience in other areas as shown in Table 27.

$$T_C = T_F\left(1 + \alpha\left(\frac{V}{C}\right)^{\beta}\right) \quad (3)$$

Where:

T_C = Congested travel time

T_F = Freeflow travel time

V = Traffic volume

C = Highway design (practical) capacity

α = Coefficient alpha (0.15)

β = Exponent beta (4.0)

Table 27: Volume Delay Parameters Alpha and Beta

Functional Classification		CBD		Urban		Suburban		Rural	
		Alpha (α)	Beta(β)	Alpha (α)	Beta(β)	Alpha (α)	Beta(β)	Alpha (α)	Beta(β)
1	Freeway	0.8	5.5	0.83	5.5	0.83	5.5	0.83	5.5
2	Principal Arterial	0.4	5	0.4	6	0.4	6	0.4	6
3	Minor Arterial	0.4	5	0.4	6	0.4	6	0.4	6
4	Collector	1	5	1	5	1	5	1	5
5	Rural Highway	1	5	1	5	1	5	1	5
6	Local Street	1	5	1	5	1	5	1	5
7	Ramp	0.4	5	0.4	6	0.4	6	0.4	6
8	Centroid Connector	0	1.1	0	1.1	0	1.1	0	1.1

Note: Parameters are provided for all FT/AT combinations, even though some do not exist (e.g., CBD Freeway).

Speed Feedback

The gravity model used in the trip distribution process relies on uncongested zone-to-zone travel time information to distribute trips. Later in the model process, the traffic assignment procedure produces estimated congested travel speeds based on traffic flows and application of a volume-delay equation. The speeds input to trip distribution and the speeds output are generally not consistent after the initial model run. To rectify this inconsistency, results from traffic assignment are used to re-compute zone-to-zone travel times for input to trip distribution. The model is rerun and a comparison is then made between the initial and updated zone-to-zone travel times. If the travel times are not reasonably similar, the updated travel times are then used to rerun trip distribution and the subsequent model steps. This process is repeated iteratively until a convergence criterion is met.

When speed feedback is added to the process, heavy congestion results in slower speeds, leading to shorter trip patterns throughout the region. As roadway improvements are planned, addition of capacity to the network will initially result in faster travel speeds because of less localized congestion. The speed feedback process recognizes the additional capacity and higher speeds and allows for longer trip lengths across the region, which has the effect of incrementally increasing overall travel demand due to roadway network characteristics.

There are various approaches to solving the speed feedback problem. Three well-documented methods are the naïve method, constant-weight method, and method of successive averages (MSA). The naïve method is not recommended for use as lack of information sharing between subsequent iterations leads to an inefficient process that will often fail to converge. Furthermore, the naïve method feeds speed data directly from traffic assignment to trip distribution, while the constant weight method and MSA feed volumes to trip distribution that

are then used to compute updated speeds (speed feedback is sometimes referred to as volume balancing). The Missoula Model implements speed feedback using the MSA.

The Method of Successive Averages

The Method of Successive Averages uses a simple average of all flows resulting from previous assignment runs. Flows can be computed as in Equation (4), or simplified to Equation (4a).

$$\boldsymbol{MSAFlow_n = \left(MSAFlow_{n-1} - \frac{MSAFlow_{n-1}}{n}\right) + \frac{Flow_n}{n}} \quad (4)$$

$$MSAFlow_n = MSAFlow_{n-1} + \frac{1}{n}(Flow_n - MSAFlow_{n-1}) \quad (4a)$$

Where:

MSAFlow	= Flow calculated using the MSA
n	= current iteration
Flow	= Flow resulting from traffic assignment

The method of successive averages is commonly used in regional travel models and is the approach recommended by the TransCAD documentation. The method of successive averages also is supported by built-in functions in the TransCAD software.

The method of successive averages effectively assigns a weight to the traffic volumes from each traffic assignment iteration that is equal to the reciprocal of the iteration number. In other words, the volume results from each previous iteration are weighted equally when computing travel times for trip distribution. After the new MSA-weighted flows are calculated, speeds on each link in the roadway network are re-estimated, and the remainder of the model is run to complete the iteration.

Initial Speeds and Borrowed Feedback Results

Use of the MSA feedback procedure produces results that are sensitive to the initial speeds/travel times input to the first iteration of the trip distribution model. For this reason, it is not advisable to use the results of a previous model run as initial congested speeds in an attempt to reduce the computation time required to run the model with speed feedback enabled. Instead, free-flow speeds should always be used as initial speeds when speed feedback is to be run. This is particularly important when model results and summary statistics from two alternative model runs are to be compared.

In some cases, it is desirable to run the model to test multiple alternatives without running speed feedback for each scenario. For these cases, it is possible to run the model once with speed feedback enabled to establish a baseline forecast scenario (e.g., future growth on existing and committed network) and then save the final model results with speed feedback for use in alternatives testing runs. When this approach is taken, it is important that feedback is disabled when using the copied feedback results. In addition, the baseline scenario should be run a

second time using copied speeds as input data and with speed feedback disabled to ensure consistency between all scenarios.

Speed Feedback Convergence Criteria

It is important that a meaningful convergence criterion is specified when running a model with speed feedback. It is not acceptable to simply run speed feedback for a specified number of iterations and assume convergence. A meaningful speed feedback convergence measure ensures, either directly or indirectly, that travel time skims input to trip distribution are reasonably similar to travel times skims created from traffic assignment output. It also provides much better consistency between similar model runs so that the differences can be attributable to actual performance and not due to computational issues.

The convergence criterion used must be specified carefully to prevent unnecessary iterations of the speed feedback process, as the convergence measure will provide diminishing benefits after a certain point. The point at which the best possible convergence has been met will often vary with the level of congestion in a network. Therefore, it is necessary to monitor speed feedback convergence when first running a dataset that is significantly different than previously considered scenarios.

Two common speed feedback convergence measures are Shortest Path Root Mean Square Error (%RMSE) and Total Misplace Flow. The Shortest Path Root Mean Square Error (%RMSE) was implemented as the convergence measure for use in the Missoula Model due to the more direct measurement of convergence and the ability to compute convergence prior to computation of traffic assignment. The speed feedback convergence criterion is set at 0.1% RMSE and the iteration limit is set to 10.

TRAFFIC ASSIGNMENT VALIDATION

Roadway volumes resulting from traffic assignment were compared against traffic count data. This process, called traffic assignment validation, ensures that the model reasonably represents observed traffic patterns. 2022 traffic count data obtained from the MPO were coded on the roadway network. Travel model results were then compared to traffic count data using a variety of techniques, including regional comparisons, screenline comparisons, and visual inspection of individual link data.

While the model should accurately represent the overall level of activity, it is also important to verify that the model has an acceptably low level of model error on individual links. It is expected that the model will not perfectly reproduce count volumes on every link, but the level of error should be monitored.

The model validation involved changes to model parameters for individual components in addition to the parameter modifications during the calibration of each of the model steps. The validation of the 2022 model included modifications to the trip generation rates, sub-region trip rate factors, gamma parameters for average trip time/length, and alternative specific constants. Tables 28 through 31 and Figure 2 show various validation checks or statistics that were used as a guideline for the model validation.

Table 28: 2022 Regional Activity Validation

Link Type/Area Type	Number of Counts	Model Volume/Count Volume	Model VMT/Count VMT	Target
Freeway	11	13.4%	10.1%	+/- 10%
Principal Arterial	95	13.2%	12.4%	+/- 10%
Minor Arterial	68	3.7%	4.5%	+/- 15%
Collector	200	1.9%	-3.8%	+/- 25%
Local	77	-10.3%	-5.4%	n/a
CBD	18	17.3%	14.6%	n/a
Urban	187	13.8%	14.7%	n/a
Suburban	152	1.4%	5.1%	n/a
Rural	94	2.9%	7.6%	n/a
Total	451	-7.90%	7.50%	+/- 5%

Table 29: 2022 VMT and VHT Totals

Link Type / Area Type	VMT	VHT
Freeway	889,699	12,310
Principal Arterial	1,719,214	40,369
Minor Arterial	467,840	12,547
Collector	606,863	17,324
Local	623,530	22,034
CBD	33,224	1,669
Urban	881,303	34,181
Suburban	999,299	25,530
Rural	2,741,364	53,945
Total	**4,655,191**	**115,325**
Total per Household	64.3	1.6
Total per Person	27.7	0.7

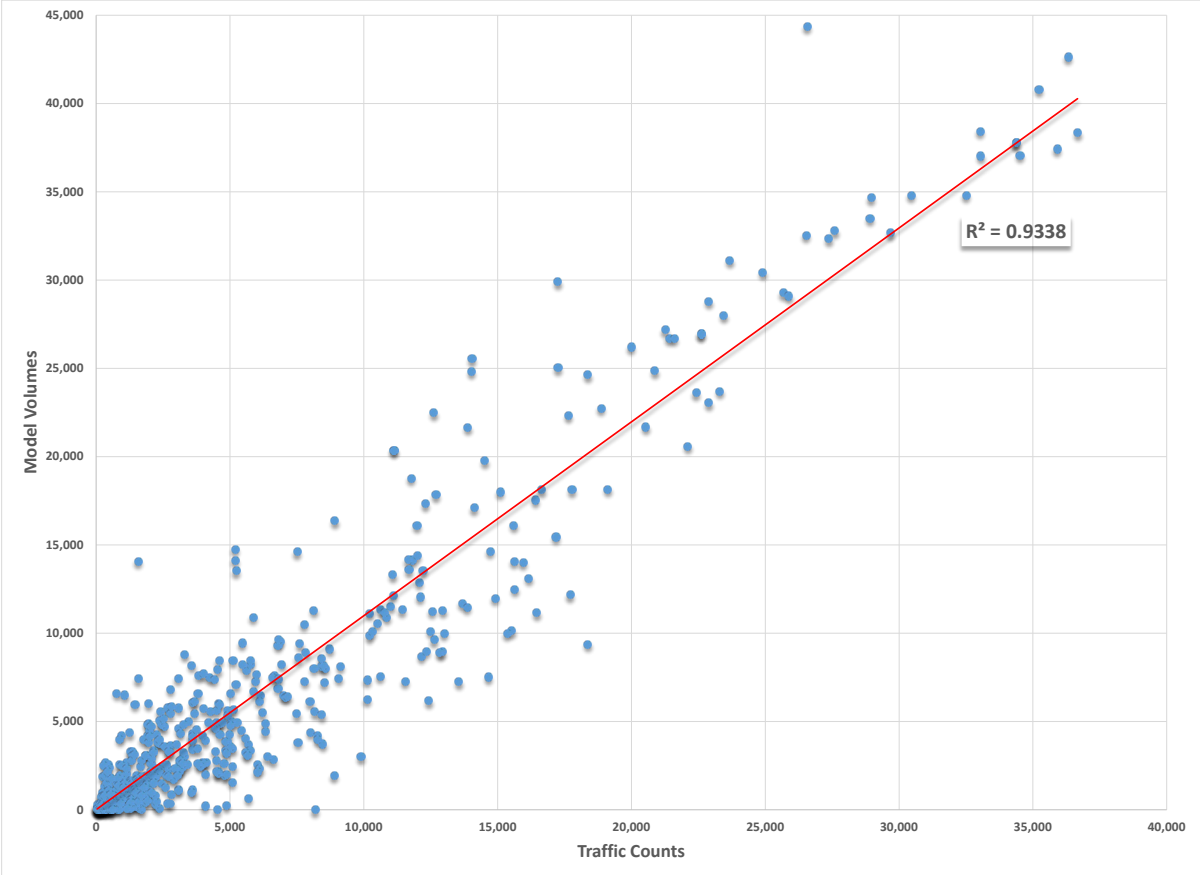
Table 30: Model % Root Mean Square Error

	Number of Counts	%RMSE	Validation Target
Freeway	11	21.1%	30%
Principal Arterial	95	29.6%	40%
Minor Arterial	68	38.5%	40%
Collector	200	68.1%	n/a
Local	77	189.0%	n/a
CBD	18	33.5%	n/a
Urban	187	44.6%	n/a
Suburban	152	44.0%	n/a
Rural	94	68.8%	n/a
Total	**451**	**49.3%**	**40%**

Table 31: Root Mean Square Error by Volume Group

Low	High	Mid-Point	Number of Counts	% RMSE
0	5,000	2,500	338	92%
5,000	10,000	7,500	80	48%
10,000	20,000	15,000	72	35%
20,000	30,000	25,000	24	24%
30,000	40,000	35,000	11	12%
40,000	50,000	45,000	0	n/a

Figure 2: Model Count/Volume Comparison



Appendix G

Performance Management and Environmental Mitigation

Performance Management and Environmental Mitigation:

Chapter 1: Performance Management

Chapter 2: Federal Performance Management

Chapter 3: Air Quality Conformity

Chapter 4: Environmental Mitigation

Chapter 1: Performance Management Background

Performance measures have historically been used in Transportation Planning; the Moving Ahead for Progress in the 21st Century Act (MAP-21) transformed the Federal-aid Highway and Transit programs by establishing requirements for performance management to promote the most efficient investment of Federal transportation funds. The Infrastructure Investment and Jobs Act (IIJA) of 2021 integrated and expanded upon these requirements to increase the accountability and transparency of this program and to support improved investment decisions through a focus on performance outcomes for national transportation goals. Establishing performance measures encourages Metropolitan Planning Organizations (MPOs) and State Transportation Departments to maximize the allocation of resources in their respective areas, as well as monitor the performance of the system for eventual use of future resources.

The MPO supports the State targets for applicable performance measures for safety, pavement and bridge condition, system performance, freight, and CMAQ, and supports the transit performance targets and measures established by the Missoula Urban Transportation District (MUTD). Thus, the MPO will plan and program projects that contribute toward relevant targets for each performance measure as detailed below.

Missoula Connect Scenario Performance

In 2021, with adoption of the *Missoula Connect 2050* Long-Range Transportation Plan (2021 LRTP), the Missoula MPO identified a preferred scenario for our future transportation system and funding investments. The scenario analysis include evaluation of three different transportation investment scenarios: New Connections (focused on create new streets, trails, and other infrastructure), Enhanced Connections (primarily improving existing infrastructure through Complete Streets and other enhancements), and Regional Equity (projects and investments that facilitate connections from the urban core through to the more rural edges); and, the plan considered two different growth scenarios: Business as Usual (growth continues throughout the region based on past trends), and Strategic Growth (focusing growth in areas with existing infrastructure and with higher quality transportation options).

The Recommended Scenario included Strategic Growth and combined elements of Enhanced Connections and Regional Growth. Analysis of the scenario performance showed improvements across a range of metrics for each plan goal (figure 1). With this plan, *2025 Missoula Connect Update* (2025 LRTP), the Recommended Scenario was carried forward, with adjustments based on emerging trends, new transportation system and land use analysis, and updated existing conditions.

Since adoption of the 2021 LRTP, our community is seeing progress on these desired outcomes. Projects were completed, programs and policies were adopted, and land use plans were updated. In addition, the Missoula MPO region was very successful with federal grant awards to implement key priority transportation projects that address safety, connectivity, access to jobs, support of existing infrastructure, and transit improvements. Including surface capital projects and transit, over $180M was awarded for priorities identified in the recommended scenario. The following is a summary of improvements related to the metrics identified in the scenario analysis:

- Safety, health and quality of life: 13 blocks of sidewalk, 7.4 miles of bike lane, and 10 projects completed that enhanced safe access to schools, employment centers, and major institutions.

Recent crash trends from 2023 and 2024 indicate reversal of the trend for increased serious and fatal crashes, as described below; successfully secured grant funding for safety, including South Ave SS4A, Downtown SAM, and Reconnecting East Missoula

- Sustainability and resilience: 7 projects completed with enhanced stormwater; limited increase in VMT over the 4-year period, and continued growth in biking and walking (based on MPO non-motorized traffic count program); secured grant funding for projects to improve resilience, such as the Lolo Street Bridge Replacement Project.
- Expand mobility choices and efficiency: increased bike lanes, sidewalks, and complete streets within ½ mile of parks, trails, employment centers, and other key regional destinations; improved access to transit, with 9 projects completed within ½ mile of a bus stop.
- Connections and Regional Equity: 9 projects in areas of persistent poverty, 3 projects completed in Invest Health neighborhoods; improvements designed or constructed to reduce delay and improve connectivity for all modes (example: new signal at Orange & Cregg, to be constructed in 2025).
- Maintain Assets and boost economic vitality: continued to invest in asset improvements through federal funding, new projects, and MPO funding. Transportation Alternatives funding included $1.3M in trail maintenance projects.
- Strategic Growth: the City of Missoula recently adopted a new Land Use Plan that focuses growth at higher densities, particularly in locations that have existing infrastructure and with quality transportation options. This new land use plan will be followed closely by revised zoning and development code to incentivize the efficient and strategic growth included in the recommended scenario. The region also continues to see rapid growth in areas identified in the last plan, such as the Sxwtpqyen (S-wh-tip-KAYN) area, building on infrastructure investments.

Figure 1 - Missoula Connect Recommended Scenario Performance

Chapter 2: Federal Performance Measures

The Infrastructure Investment and Jobs Act (IIJA) expanded on the goals of Moving Ahead for Progress in the 21st Century Act (MAP-21) to transform the Federal-aid highway program by establishing requirements for performance management to promote the most efficient investment of Federal transportation funds. The IIJA implemented further performance measure tracking requirements to increase the accountability and transparency of transportation planning process and to support improved investment decisions through a focus on performance outcomes for national transportation goals.

Establishing performance measures encourages Metropolitan Planning Organizations (MPOs) and State Transportation Departments to maximize the allocation of resources in their respective areas, as well as to monitor the performance of the system for eventual use of future resources. The Missoula MPO supports the Montana Department of Transportation (MDT) targets for applicable performance measures for safety, pavement and bridge condition, system performance, freight, and congestion mitigation and air quality (CMAQ), and supports the transit performance targets and measures established by the Missoula Urban Transportation District (MUTD). The following appendix details how the MPO and this metropolitan transportation plan update meet federal requirements for performance-based planning.

The MPO plans programs and projects that contribute toward relevant targets for the stated performance measures through integration of a project evaluation framework that both meets the Missoula MPO's adopted goals as well as required state and federal performance measures. Missoula Connect builds on previous plans, the currently adopted 2024-2028 Transportation Improvement Program (TIP) and coordination with local stakeholders to provide projects, programs and policies that will further our region's transportation system and align with yielding improvements to State and Federal performance measures.

SAFETY

Improving safety along public roads was the first national goal area addressed by Federal requirements for performance management. The Federal Highway Administration (FHWA) established five safety performance measures intended to guide the Highway Safety Improvement Program (HSIP) funding source within our region's Transportation Improvement Program (TIP).

The national goal behind establishing safety performance measures and targets is to reduce the number of traffic fatalities and serious injuries along all public roads. The Missoula MPO supports the State targets for applicable safety performance measures.

Table 1 - Safety Performance Targets

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

Performance Measure	2020 State Target (based on 5-year rolling average)	2020 Statewide Performance	2025 State Target (based on 5-year rolling average)	2023 Latest Statewide Performance
Number of fatalities	No more than 182.2 annual fatalities	190.8	No more than 213.4 annual fatalities in 2025	208
Rate of fatalities per 100 million vehicle miles traveled (VMT)	No more than 1.399 fatalities per 100 million VMT	1.520	No more than 1.54 fatalities per 100 million VMT	1.518
Number of serious injuries	No more than 860.4 serious injuries in 2025	755	No more than 737.4 serious injuries	776
Rate of serious injuries per 100 million VMT	No more than 6.608 serious injuries per 100 million VMT	6.0	No more than 5.487 serious injuries per 100 million VMT	5.664
Number of non-motorized fatalities and non-motorized serious injuries	74.2	67.4	55.2	44

The state of Montana does not meet or exceed every State Targets from 2020 and 2025 (using latest available 2023 performance data). The measures in which performance are not met shift between 2020 and 2023 (latest available data) numbers from exceeding in fatal crash measures in 2020 to exceeding in serious injury crash measures in 2023. It is worth noting that locally and nationally crash rates decreased during 2020 due to reduced travel related to the Covid-19 Pandemic so the increase from 2020 to 2023 should be viewed as a return to baseline that is reflective of pre-2020 crash numbers. The plan's approach to addressing safety performance measures is bolstered by our focus on safety-oriented prioritization and thus the resulting projects as detailed below. More information regarding the state's safety performance targets

established by MDT can be found within the Montana Comprehensive Highway Safety Plan[1] as well as within the Montana High Safety Improvement Program 2024 Annual Report.[2]

One of Missoula Connect's 5 primary goals, informed by public input, is to improve safety and promote health to enhance quality of life. The objectives associated with that goal are the following:

- Eliminate traffic-related fatalities and serious injuries
- Improve safety for people walking and biking
- Enhance active transportation and transit linkages to lower-income neighborhoods
- Increase physical activity and human connections by making walking and biking convenient modes of travel
- Improve access to recreational facilities and trails to support healthy lifestyles

This goal informed the plan's project list, programs and policies through data-driven decision making. This is most notable through the project's scoring methodology, in which crash location data was used as a key input to score and prioritize of the project list as detailed in Appendix D: Project Evaluation. In addition to prioritizing projects that address high crash locations, this plan projects

Safety targets are supported by this plan update through the following strategies:

- Investment in **12 safety projects** addressing locations with known high crash trends
- **19 Complete Streets** projects that will provide additional separation of modes, and that will include proven safety counter measures such as dedicated bicycle facilities and pedestrian walkways, crosswalk visibility enhancements, dedicated left and right turns, and other corridor or intersection improvements
- An additional **58 Active Transportation Projects** to improve transportation safety for non-motorized transportation users, helping to achieve the state's target of reducing serious and fatal crashes involving people biking or walking from 74 to 55 (5-year rolling average)
- Prioritize lower-cost complete street and safety-first projects over expensive capacity expansion improvements in order to maximize the safety benefit over the 25 year planning period
- Recommendations for investment and prioritization in programs or policies that will improve safety in the region, such as reduced speeds, safe routes to school, safe routes for older adults, vision zero implementation, and complete streets standards

Local Safety Efforts:

The MPO has also developed localized goals and objectives through a Community Transportation Safety Plan (CTSP). In the CTSP, adopted in 2013 and updated in 2018, the goal is to reduce the 5-year average of fatal and serious injuries by 25%. Further, the MPO and City of Missoula adopted a "Vision Zero" resolution that reinstates the goal of ridding our roadways of fatal and serious injury crashes. The Vision Zero policy involves producing an annual report that provides analysis safety data to determine progress and clarify annual goals.

Missoula Connect builds on the goals established in the CTSP to inform our project selection, programs, and policies. The CTSP identified the following trends for the Missoula Region:

- The majority of crashes involved 2 vehicles (86%).

[1] https://www.mdt.mt.gov/visionzero/plans/docs/chsp/current-chsp.pdf
[2] https://highways.dot.gov/sites/fhwa.dot.gov/files/2025-03/HSIP_Report_MONTANA_2024_508.pdf

- Nearly 60% of drivers were age 25-64.
- Crashes were more common on weekdays during the peak travel times (AM, Noon, PM).
- The majority of crashes occurred in an urban setting (97%).
- Rear end (38%) and right-angle crashes (27%) were the most common crash types at intersections. They were also the most common in severe intersection crashes, at 17% and 40%, respectively.
- Inclement road (28%) and weather conditions (15%) were not a common factor in the crashes.
- Inattentive driving (48%) and failing to yield (30%) were the top driver-contributing factors in the crashes.

A recent analysis of crashes in the Missoula Planning Area (MPA) indicates fatal and serious crashes are increasing through 2022, which mirrors national trends post-COVID. For example, Missoula fatal rates reached a 20-year high of 2.1 per 100 million VMT in 2022, which is greater than the statewide target of 1.54. However, improvements in the Missoula area focused on safety have increased in recent years. The City of Missoula, with support from the MPO as noted in Chapter 7, introduced a Neighborhood Traffic Management Program that is aggressively implementing quick-build speed and safety improvements. The City installed nearly 60 intersection or corridor safety improvements over the last 4 years through this program. The LRTP recommends continuing to support these safety-focused programs, and to ensure complete street improvements include all appropriate safety countermeasures to reduce crashes. As a result, recent data from 2023 indicates that fatal crash rates have dropped to 1.48 per 100 million VMT, which is exceeding the state target.

More recently, the MPO assisted with two successful Safe Streets and Road for All grant applications, receiving $9.6M in federal funding to address safety along South Avenue, and $377,000 to prepare a safety action plan for the Reserve Street Corridor. These additional funds will lead to significant improvements along two high crash corridors. These improvements are expected to return the Missoula region to a downward trend in fatal and serious crashes.

INFRASTRUCTURE CONDITION

The Federal Highway Administration (FHWA) established performance measures to assist in the management of pavement and bridge conditions on the National Highway System (NHS) to guide infrastructure maintenance and ensure it remains functional and in good repair. The Missoula MPO aims to strategically address pavement condition on local, state, and federal facilities using findings from the 2020 Pavement Management Report and ongoing state pavement condition assessments. These asset condition reports provide the MPO with a basis for monitoring the transportation network's Pavement Condition Index, and to help prioritize strategic investment of available maintenance funding.

Table 2 - Pavement Condition

Functional Class / Paver Designation	# of Miles	# Square Yards	% of Total by # of Square Yards	Weighted Average PCI
Arterial	8.63	211,764	31.0	81
Collector	107.54	1,841,246	26.8	75
Local	284.84	4,811,393	70.1	67

Total	**401.01**	**6,864,403**	**100**	**70**

The table below from the 2020 Pavement Management Report displays a five-year scenario for arterials and collectors as well as local streets. The information in this table shows the spending required to address improvement to the infrastructure in our system at all present PCI levels. This table has been updated to reflect current construction costs in 2025 integrating an annual inflation rate of 3%.

Table 3 - 5-year Pavement Cost Projections

Road Classification	PCI Range	# of Miles	# of Square Yards	Unit Cost per SY (2025 Estimated Cost)	Total Cost (2025 Estimated Cost)
Arterial / Collector	Rejuvenation (PCI 86 -100)	41.04	773,438	$2.48	$1,918,780.60
	Global (PCI 71 - 85)	34.46	614,253	$3.27	$2,008,086.44
	Conventional (PCI 66 -70)	7.79	130,080	$21.99	$2,860,645.57
	Conventional (PCI 60 -65)	7.81	131,194	$30.74	$4,033,421.71
	Critical PCI (40-59)	16.84	270,719	$39.24	$10,623,399.81
	Reclamation PCI (0 - 39)	8.23	133,326	$60.82	$8,108,289.79
Total		**116.17**	**2,053,010**	**N/A**	**$29,552,623.93**
Local	Rejuvenation (PCI 86 -100)	87.26	1,446,432	$2.48	$3,588,375.24
	Global (PCI 71 - 85)	64.76	1,104,356	$3.27	$3,610,308.70
	Conventional (PCI 66 -70)	15.67	266,409	$21.99	$5,858,714.97
	Conventional (PCI 60 -65)	24.39	410,946	$30.74	$12,634,102.73
	Critical PCI (40-59)	46.58	803,987	$39.24	$31,549,597.56
	Reclamation PCI (0 - 39)	46.18	779,263	$60.82	$47,391,282.98
Total		**284.84**	**4,811,393**	**N/A**	**$104,632,382.18**

Currently, the estimated cost to maintain roadways in the region outpaces the available revenue by approximately 2 to 1 (estimated federal, state and local maintenance revenue of $60M over the next 5 years versus $135M in projected costs in the table above).

The table below lists the performance measures established by FHWA to address the condition of NHS pavement and bridge conditions and the state targets established by MDT. The Missoula Urban Area exceeds targets for pavement and conditions for all measures other than the measures highlighted in red below.

Table 4 - Pavement Condition Performance Targets

Performance Measure	2020 State Target	2021 Condition/Performance	2024 State Target *2025 Condition/Performance Not Available	2024 Existing Condition/Performance
Pavement Condition				
Percentage of pavements of the Interstate System in Good condition	54%	56.2%	35.0%	44.3%
Percentage of pavements of the non-Interstate NHS in Good condition	40%	41.9%	2.0%	0.2%
Percentage of pavements of the Interstate System in Poor condition	3%	.3%	30.0%	36.5%
Percentage of pavements of the non-Interstate NHS in Poor condition	6%	1.4%	3.0%	1.5%
Bridge Condition				
Percentage of NHS bridges classified as in "Good" condition	12%	21.2%	17.0%	20.75
Percentage of NHS bridges classified as in "Poor" condition	9%	4.7%	8.0%	4.0%

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

The state of Montana meets and exceeds all 2020 state targets for pavement condition but does not met the Percentage of pavements of the Interstate System in Poor and Percentage of pavements of the non-Interstate NHS in Good condition targets. Our region now have 6.5% greater facilities with pavement conditions classified as poor condition than state targets indicate.

Meeting all the performance targets established by the state for Pavement Condition within the Missoula region throughout the future will require either increased funding, or significantly increased efficiency and cost-effectiveness of roadway maintenance projects. The good news is that successful federal grant awards going to projects in the Missoula area will help offset some of the revenue gaps for maintenance. For instance, the Russell Street project will improve over 1 mile of National Highway pavement through reconstruction, and projects like the Downtown SAM and South Ave SS4A grant will provide significant improvements to pavement condition along key urban routes.

Within the near term, more than **$21M in federal funding** is committed to roadway maintenance through the Urban Pavement Preservation and the West of Missoula NW projects (see Appendix B for more details).

The plan's recommended projects are informed by the goal to maintain assets and invest strategically to boost economic vitality, which includes the following objectives:

- Bring existing infrastructure and transit assets into a state of good repair to support the regional

economy, local industry, and goods movement

- Balance cost-effective, implementable projects with high-impact projects
- Plan for a transportation system that makes the best use of public financial resources
- Provide a network that targets growth inward to support existing centers and mixed-use development
- Support access to businesses and commercial and industrial centers to enhance economic recovery and growth
- Explore more equitable and sustainable funding sources for transportation projects and programs

This goal will not only be supported by capital projects but also our Pavement Maintenance and Asset Management Program. This program will provide a system to continuously gather pavement condition data and develop a mechanism to prioritize fixing our infrastructure before more costly decay occurs. More information regarding the infrastructure performance targets established by MDT can be found in the Montana Transportation Asset Management Plan.

SYSTEM RELIABILITY

System reliability performance measures exist to improve the efficiency of the overall transportation system, while helping to reduce congestion, travel times, and pollution emissions and increase reliability of the system. FHWA established performance measures that pertain to the performance of the National Highway System (NHS). The table below lists the performance measures established by FHWA and the state targets established by MDT. These measures are updated on a 2-year basis making for misalignment with the exact years of adoption of the previous LRTP and current LRTP update but still reflect changes to performance measures over time.

Table 5 - System Reliability Performance Targets

Performance Measure	State Target			
	2021 Target	2020 Performance	2024 Target	2024 Performance
Percent of the person-miles traveled on the interstate that are reliable	98%	99.8%	98%	99.8%
Percent of the person-miles traveled on the non-Interstate NHS that are reliable	80%	84.2%	80%	91.3%

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

The state of Montana exceeds state performance measure for system reliability state targets for 2020 and 2024. The region's reliability system showed improvements from 2020 and 2024 for both measures. To maintain this trajectory in the Missoula region, Missoula Connect takes a holistic approach to system performance through the plan's goal to expand mobility choices to improve efficiency and accessibility for people and goods. This goal includes the following objectives:

- Build complete streets and increase access to multimodal options
- Increase street, trail/greenway, and sidewalk network connectivity for all ages and abilities
- Optimize the efficiency and accessibility of the transportation system

- Reduce person hours of delay for people driving and improve freight movement
- Improve access to high-quality and high-frequency transit stops and routes

To achieve this goal, the plan includes a project list aimed at addressing travel reliability through implementation of new connections, investing in infrastructure that yields mode split away from single-occupancy vehicle trips and introduces an intelligent transportation system (ITS) program to improve traffic signal timing. Recommended investments in the plan are projected to improve system reliability and travel times from projected baseline conditions by at least 6% (based on travel demand model analysis).

Due to Missoula's unique geography and development pattern, roadway expansion is largely infeasible and too costly to accommodate the region's growth and travel demand via motorized vehicles. This plan proposes a different approach, one focused on efficiency and broader use of multi-modal options. The recommended projects include improvements that will expand primary commuter trails, neighborhood greenways, sidewalks (through complete streets), protected bike lanes, and expanded transit service.

The plan also recommends investments that will improve vehicle capacity through signal timing and ITS, as well as key projects such as Russell Street that can help mitigate growth in traffic along Missoula's principal arterial system. And beyond transportation investments, Missoula Connect supports the Missoula region's land use goals to both focus inward and promote growth around existing infrastructure. These growth and development strategies can reduce the number of vehicle trips and trip lengths.

While system reliability is not measured locally for Missoula, the state continues to show a high level of system reliability, meeting all targets for Interstate and non-Interstate NHS routes (see Table 10).

FREIGHT MOVEMENT AND ECONOMIC VITALITY

The primary goal for establishing freight performance measures and targets is to improve the national freight network, while providing access to trade and enhancing the capacity of communities to participate in and support regional economic development. FHWA has established a performance measure specifically related to freight movement on the Interstate System, and MDT has set a 2- and 4-year target to address freight reliability.

Table 6 - Freight Performance Target

	State Targets			
Performance Measure	2021 Target	2020 Performance	2024 Target	2024 Performance
Truck Travel Time Reliability (TTTR) Index	1.30	1.23	1.30	1.26

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

The state of Montana exceeds 2021 and 2025 Truck Travel Time Reliability Index targets freight performance. To continue this trajectory in the Missoula region, Missoula Connect implements a diverse, multimodal transportation project list that is projected to increase efficiency across our transportation system by shifting our mode-share to reduce single- occupancy vehicle trips. Key corridors included in our region's freight routes are Brooks Street (Brooks Street Corridor Study) and Reserve Street (Reserve Street Safety Action Plan) which are both undergoing planning processes that will aim to improve multimodal connectivity and safety. Although these projects don't directly involve capacity expansion, they will aid in achieving mode-shift goals. Further, Reserve Street is the focus of an Integrated Traffic Management Systems Project led by MDT that will light timing efficiency improvements creating great Truck Travel Time Reliability in the region.

In addition to these projects, Missoula Connect includes two programs to improve efficiency of the freight network. The Freight and Goods Management Program will offer a framework to analyze existing freight routes and re-envision the infrastructure that service local freight delivery and through-travel. The Intelligent Transportation Systems and Signal Coordination Program would offer the opportunity to integrate adaptive signal timing technology to improve congestion along key corridors.

In addition to the recommended projects in this plan, projected revenues include **$27.8M** in the National Highway Freight Program, which is intended to improve condition and performance of Montana's National Highway Freight Network. While there are currently no projects identified under this program, it is expected that the MPO and MDT will coordinate to fund projects that will help maintain the current level of Freight Reliability times (see Table 10), and continue to meet statewide targets.

More information regarding freight-related performance measures and metrics can be found in the Montana Freight Plan.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

Establishing performance measures related to the CMAQ program is integral to the Missoula region's goal of environmental sustainability. These measures will help enhance the performance of the transportation system while protecting and enhancing the health of the natural environment.

While other performance measures affect congestion and air quality, there are three federal performance measures that address CMAQ directly, one of which is applicable to Montana. MDT was required to set statewide targets for the reduction of Carbon Monoxide (CO), Particulate Matter 10 (PM_{10}), and Particulate Matter 2.5 ($PM_{2.5}$). The table below shows the federal performance measures and associated targets where applicable. For more information on state performance measures please visit the Montana Department of Transportation (MDT) State On-Road Mobile Source Emissions Reductions Report. The MDT's baselines for each pollutant, developed using emissions benefits from Missoula MPO's mandatorily-funded projects reported in the CMAQ Public Access System, demonstrate that quantitative emissions benefits have been and likely are continued to be realized for each criteria pollutant. The reporting system, however, does not capture continued benefits from past projects nor does it include benefits from flexibly-funded projects, in accordance with the FHWA CMAQ Interim Guidance document. Setting targets at greater than zero reflects that while CMAQ projects are producing quantitative benefits for the required criteria pollutants, benefits reported are only a part of the actual emissions benefits realized from MDT's CMAQ projects – both past and present.

Table 7 - Air Quality Emissions Performance Targets

Performance Measures	2021 Targets	2020 Performance	2025 Targets	2024 Performance
CMAQ Traffic Congestion (annual hours of excessive delay per capita)	N/A	No data	N/A	No data
Percent of Non-SOV Travel	N/A	No data	N/A	No data
CMAQ On-Road Mobile Source Emissions (total emission reductions)				
Carbon Monoxide (CO)	>0.00 kg/day	105.391 kg/day	>0.00 kg/day	59.277 kg/day
Particulate Matter 10 (PM_{10})	>0.00 kg/day	1.174 kg/day	>0.00 kg/day	73.301 kg/day
Particulate Matter 2.5 ($PM_{2.5}$)	>0.00 kg/day	0.843 kg/day	>0.00 kg/day	No data Available

Note: Green shading indicates metric that meet or exceed the target. Red shading indicates metrics that do not meet the target.

The Missoula region has continually shown to exceed local air quality emissions performance targets by exceeding reduction targets in Carbon Monoxide, Particulate Matter 10 and Particulate Matter 2.5 as detailed in the air quality

conformity background section below. Missoula Connect provides a multimodal approach to improving air quality and compliance with CMAQ performance targets by prioritizing projects and programs that are projected to reduce area VMT. Our project list contains **19 Complete Streets**, **58 Active Transportation Improvements**, and includes 12 Shared-Use Paths and Trail Extension projects. Other investments to reduce emissions include:

- $15M for street sweepers and flush trucks, which provide significant reductions in particulate matter from elimination of street debris.
- $9.6M investment in Transportation Options programming, which has demonstrated impact on shifting trips away from vehicles and to modes that reduce tailpipe emissions.
- $11.5M in additional transit funding through CMAQ to support enhanced transit service and purchase of zero tailpipe emissions vehicles.
- Recommended funding to coordinate signal timing for more efficient vehicle travel times, which will both reduce emissions from idle time and improve congestion.

Improvements to CMAQ air quality measures are confirmed through the Air Quality Analysis methods through a Travel

TRANSIT ASSET MANAGEMENT

Performance targets and measures established for transit asset management (TAM) serve to provide safe, cost-effective, and reliable public transportation through a strategic and systematic process of operating, maintaining, and improving public transportation capital assets. FTA has established four transit performance measures, three of which are applicable to MUTD.

Transit agencies are only required to establish targets for assets they have direct capital responsibility over. Thus, MUTD was not required to establish targets for the infrastructure performance measure in their TAM. The performance measures and targets established by MUTD and supported by the MPO are shown in the table below.

Table 8 - Transit Asset Performance Targets

Asset Category - Performance Measure	Asset Class	2025 Target	2026 Target	2027 Target	2028 Target	2029 Target
Revenue Vehicles						
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	BU- Bus	50%	N/A	N/A	N/A	N/A
	CU-Cutaway Bus	0%	N/A	N/A	N/A	N/A
	MV- Mini-van	0%	N/A	N/A	N/A	N/A
	RT-Rubbertire Vintage Trolley	0%	N/A	N/A	N/A	N/A
Equipment						
Age - % vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non Revenue/Service Automobile	0%	N/A	N/A	N/A	N/A
	Trucks and other Rubber Tire Vehicles	50%	N/A	N/A	N/A	N/A
Facilities						
Condition - % of facilities with a condition rating below 3.0 of the FTA Transit Economic	Administration	0%	N/A	N/A	N/A	N/A
	Maintenance	0%	N/A	N/A	N/A	N/A

Requirements Model (TERM) Scale	Passenger Facilities	0%	N/A	N/A	N/A	N/A

Working with Mountain Line to improve our region's public transit system is essential to achieving three of the Missoula Connect goals:

- Advance sustainability and community resilience to protect natural resources and address climate change
- Expand mobility choices to improve efficiency and accessibility for people and goods
- Connect and strengthen communities to create a more equitable region

The Missoula MPO works to improve specific transit asset management measures by implementing corridor redesigns that support Mountain Line transit routes and providing funding for improved fare-free services. This plan update also recommends the following funding to support MUTD's asset management goals:

- Estimated **$38.5M** in federal capital purchase funding for new buses, paratransit vehicles, vanpool and other transit assets
- CMAQ funding of **$1.4M** for the purchase of new busses
- Additional investment of CMAQ for vanpool vehicles and operations
- Identification of the Brooks Corridor for priority grant funding to support Bus Rapid Transit, including vehicles, station improvements, and other assets necessary for support BRT

Since the last MPO plan update, MUTD has received nearly **$10M** in federal grant funding for bus purchases that will replace aging vehicles, as well as **$39M** in federal grants to construct a new central facility. Missoula continues to be very successful pursuing grants and other innovative funding to ensure our transit assets are in good repair and to ensure quality transit service.

The Transit Amenities Program will improve transit stop amenities on a priority basis. The Safe Routes to Transit Program will help to provide safe connections to transit stops and improve transit riders' experience.

PUBLIC TRANSPORTATION AGENCY SAFETY PLAN

The management of safety is a top priority of the Missoula Urban Transportation District (MUTD). The organization is committed to implementing, maintaining and constantly improving processes to ensure that all their operational and maintenance activities are supported by an appropriate allocation of organizational resources and aimed at achieving the highest level of transit safety performance. All members of management and all front-line employees are accountable for the delivery of this highest level of safety performance, starting with the General Manager. MUTD ensures safety through integration of an Employee Safety Reporting Program (ESPR), Safety Risk Management Process (SRM), and Safety Assurance process that involves the development of Performance Monitoring and Measurement. Their performance measures are provided in the table below.

Table 9 - Transit Safety Performance Targets

Mode of Transit Service	Fatalities (total)	Fatalities (per 100 K VRM)	Injuries (total)	Injuries (per 100 K VRM)	Safety Events (total)	Safety Events (per100 K VRM)	System Reliability (VRM / failures)
Fixed Route	0	0	2	0.3	6	1.35	160,000
Comparable Paratransit	0	0	0	0	1	0.6	160,000

The MPO supports MUTD in meeting safety targets through investments along transit corridors, funding for capital purchases and operations, and through education programming and policies. Within the project scoring and prioritization, the plan weighted transit routes higher than other corridors. The **19 Complete Streets** projects recommended for funding include at least 10 that will provide access or safety improvements for fixed-route transit. Other projects, such as the proposed improvement of the intersection at S 3rd Street and Catlin will provide improved safety for buses along fixed-route service. Funding from CMAQ and and projected federal funds will ensure vehicles and other infrastructure are in good condition and provide safe transit service.

Missoula's Vision Zero goal is generally applied to various transportation-related crashes, however transit is not specifically identified as an emphasis area. Even so, the MPO will continue to look for ways to improve safety for transit as a key component of our transportation system.

Chapter 3: Air Quality Conformity Background

History of Transportation and Air Quality Monitoring:

On November 15, 1990, the Clean Air Act Amendments (CAAA) of 1990 were signed into law to regulate air emissions from stationary and mobile sources. Among other things, this law authorizes the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

Transportation conformity is a process required by Section 176(c) of the CAAA to ensure that Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that are consistent with air quality goals. Conformity helps protect public health through early consideration of the air quality impacts of transportation decisions in places where air quality does not currently meet federal standards or has not met them in the past.

These regulations require that for an urban area designated as nonattainment of NAAQS for transportation-related criteria pollutants, or which has a maintenance plan for such pollutants, a conformity determination must be conducted to demonstrate that its long-range transportation plan (LRTP), transportation improvement plan (TIP), or any revisions will conform to the purpose of the State Implementation Plan (SIP). Conformity to a SIP means that such activities will not cause or contribute to any new violations of the NAAQS; increase the frequency or severity of NAAQS violations; or delay timely attainment of the NAAQS or any required interim milestone. Transportation-related criteria pollutants for areas designated as nonattainment, or which have a maintenance plan, may include ozone (O3), particulate matter (PM10 and PM2.5), nitrogen dioxide (NO2), and carbon monoxide (CO), and their appropriate precursors (precursor pollutants are those pollutants which contribute to the formation of other pollutants). Conformity must be determined prior to the acceptance of a new or updated LRTP, TIP, or amendments to either.

Local Air Quality History:

The United States Environmental Protection Agency (EPA) has identified areas within the Missoula Transportation Plan Study Area as not meeting compliance of the carbon monoxide (CO) and particulate matter National Ambient Air Quality Standards established by the Clean Air Act (CAA). Missoula was classified as a non-attainment area for CO and total suspended particulate (TSP) in 1978. In 1987 the EPA replaced the TSP standard with a new standard for particulate 10 microns in diameter and smaller (PM_{10}). Missoula is currently designated a maintenance area for CO and PM_{10}. In 1997, EPA established an additional standard for particulate 2.5 microns in diameter and smaller ($PM_{2.5}$). Missoula has not violated the 1997 PM $_{2.5}$ particulate standard. On February 7, 2024 EPA strengthened the National Ambient Air Quality Standards for PM $_{2.5}$ the annual standard was lowered from 12ug/m3 to 9ug/m3 but no changes were made to PM_{10}. Even

with these changes to $PM_{2.5}$ measures are met when exceptional events submittals that include removal natural land fire effluents. The MPO's most local air quality monitor located in Frenchtown shows between 2021-2023, the annual average was 10.5ug/m3 while removing wildfire smoke data, the annual average comes out to be 8.4-8.7 ug/m3.

Over the years, the Missoula City-County Air Pollution Control Board (MCCAPCB) and the Montana Department of Environmental Quality (DEQ) have developed a State Implementation Plan (SIP) to bring Missoula's air quality into compliance with the NAAQS. The current SIP prescribes several measures to improve air quality. The use of oxygenated fuels during the winter months, combined with improved vehicle emission control technology, has significantly reduced vehicle CO emissions. Ordinances designed to reduce dust emissions from winter traction control practices have reduced PM_{10} emissions. No transportation control measures (TCMs) are included in the SIP or this LRTP.

On May 27, 2005 the MC-CAPCB along with the City, County and DEQ petitioned EPA to re-designate Missoula from non-attainment status to a maintenance status for CO. EPA approval of the application was published in the Federal Register on August 17, 2007 (FR/Vol. 72, No. 159, page 46158). A conformity determination must be measured against the adequacy finding of the CO emissions budget issued by the EPA on June 16, 2006, and approved for the 2nd 10-year carbon monoxide Limited Maintenance Plan (LMP) for the Missoula area, consistent with the final rule published in the Federal Register on February 1, 2018 (83 FR 4597).

On August 3, 2016 the MC-CAPCB along with the City, County and DEQ petitioned EPA to re-designate Missoula from non-attainment status to a maintenance status for PM_{10}. EPA approval of the application was published in the Federal Register on May 24, 2019 (FR/Vol. 84, page 24037). Under the approved PM_{10} Limited Maintenance Plan (LMP), the motor vehicle emissions budget need not be capped and a regional emissions analysis is not required. Conformity determinations will be completed without submitting a transportation conformity motor vehicle emissions budget that would then need to be analyzed under 40 CFR 93.118.

The CAA requires that transportation plans and regionally significant projects cannot create new violations, increase the frequency or severity of existing violations, or delay attainment of the NAAQS. All regionally significant projects were modeled for air quality conformity during the 2016 Missoula Long Range Transportation Plan Update.

During completion of the 2020 Missoula Connect Long-Range Transportation Update, an emissions analysis of the Recommended Projects list showed that the Plan conforms to the emissions budgets for CO. Missoula was designated as a LMP area for PM-10, so no regional emission analysis is required to demonstrate conformity.

The Missoula Transportation Policy Coordinating Committee (TPCC) approved the 2020 Missoula Long Range Transportation Plan Update on June 15, 2021. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issued a finding of conformity for the Update on July 26, 2021. That analysis indicated that implementation of the recommended projects would have a positive impact on CO emissions and would not exceed the PM_{10} budget of 16,119 pounds per day, as established in the Missoula SIP.

Throughout the future the Missoula MPO will review and update the transportation plan at least every four years in air quality non–attainment areas and at least every five years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends. (23 CFR Section 450.32(c)).

State of Conformity in 2025:

During the development of the plan, staff worked with consultants to develop an updated transportation demand model reflective of the latest transportation network conditions and the recommended project list. VMT data were obtained in the form of Highway Performance Monitoring System (HPMS) data for the base year 2022. The VMT data were disaggregated by arterial and vehicle classification using 2022 HPMS VMT data.

Due to the approved PM_{10} LMP and T CA determination, a regional emissions analysis was not required after 2020. The MPO plans to complete a conformity determination on the long-range plan recommended project list after adoption of the LRTP using the EPA's Motor Vehicle Emission Simulator model version 4 (MOVES4) . MOVES 5 is the latest version available from EPA. However, use of MOVES 4 is allowed to conduct conformity analyses during the transition period until September of 2025 and hence MOVES4 will be used for the analysis.

Chapter 4: Environmental Mitigation

In compliance with federal requirements 23 U.S.C. 134(i)(2)(D) and 23 CFR 450.324(f)(10), the Missoula LRTP includes a discussion of environmental mitigation activities aimed at restoring and maintaining environmental functions potentially affected by plan implementation. This discussion is developed in consultation with federal, state, tribal, and local agencies responsible for land use, natural resources, environmental protection, conservation, and historic preservation.

As part of the consultation process, the LRTP compares proposed transportation projects with existing conservation plans, resource maps, and inventories of natural and historic assets. The LRTP then emphasizes projects, policies, programs, and strategies that proactively address potential environmental impacts. This early consideration of environmental resources supports more predictable project development, informed decision-making, efficient project delivery, and meaningful mitigation outcomes.

Consultation:

The development of the Missoula LRTP included continued coordination with agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. In accordance with federal regulations, this consultation helped ensure that environmental considerations are integrated early and meaningfully into the planning process.

As part of this commitment, the MPO maintained a distribution list of regulatory and resource agencies and ensured they were notified of the LRTP update and planning effort. This outreach allowed agencies to provide input on potential impacts and mitigation opportunities and helped align transportation strategies with conservation goals, regulatory requirements, and local environmental priorities.

Consultation Agencies:

Federal	State	Tribal	Local
U.S. Fish and Wildlife Service	Montana Department of Transportation	Confederated Salish & Kootenai Tribes	Missoula Airport Authority
U.S. Army Corps of Engineers	Montana Historical Society	Fort Belknap Indian Community	Missoula Community Planning, Development, and Innovation
Advisory Council on Historic Preservation	Montana Department of Environmental Quality		Missoula Police Department
National Park Service	Montana State University Library GIS		Missoula County Office of Emergency Management
U.S. Bureau of Reclamation	Montana Fish, Wildlife & Parks		Missoula Fire Department
U.S. Forest Service			Missoula Parks & Recreation

			Missoula County Parks, Trails, and Open Lands
			Missoula County Planning, Development and Sustainability

Mitigation Activities:

To prioritize transportation projects, the Missoula MPO developed a data-driven project evaluation framework aligned with the LRTP's goals and federal planning requirements. The framework includes 20 quantitative metrics derived from the plan's goals, which reflect local priorities such as improving mobility, enhancing safety, advancing sustainability, and increasing community resilience. Projects were evaluated across 60 spatial variables that analyze how each project would improve network access and performance based on its specific location and characteristics. Each project received an aggregate score based on a 29-point scale, allowing projects to be tiered according to their relative potential to advance the LRTP's goals.

A key scoring criterion in this process was the emphasis on sustainability and environmental mitigation, ensuring that projects contribute to the protection of natural resources and address environmental impacts. This evaluation approach informed the development of project recommendations, refining priorities and guiding investments that align with both local and federal expectations.

Goal:

Advance sustainability and community resilience to protect natural resources and address climate change.

- *Improve climate resilience and advance toward carbon neutrality.*
- *Reduce transportation related air emissions*
- *Minimize sediment, nutrients, and litter entering surface water*
- *Expand the urban canopy and green stormwater infrastructure*
- *Protect and enhance natural, cultural, historic resources, including agricultural lands*
- *Create adaptable and resilient infrastructure to respond to changing needs*

Scoring Criteria:

Critical Habitat

Projects received higher scores if located outside of critical species habitat areas, helping to minimize potential impacts on sensitive ecological resources. For example, projects located away from grizzly bear habitat, lynx habitat, and occupied bull trout streams were prioritized to support the protection of these federally listed and sensitive species.

Floodplain/ Wetland

Projects received higher scores if located outside of floodplain hazard zones and sensitive wetland areas, reducing potential impacts on flood-prone and ecologically sensitive landscapes. Projects that avoid the regulatory floodplain, the 1% annual flood hazard area, and wetlands, including marshes and swamps, were prioritized to help protect water quality, habitat integrity, and reduce risk.

Open Space

By prioritizing projects located outside of floodplains, protected wetlands, and critical species habitats, the LRTP project list captures sensitivity to existing open space resources and supports the long-term mitigation of impacts to Missoula's environment.

Historic and Cultural Resources

Projects received higher scores if they enhanced multimodal access to sites of historic or cultural importance while avoiding adverse impacts or disruptions to the cultural resources themselves.

Agricultural Preservation

Projects received higher scores if located outside of land designated for agricultural preservation, including farmland classified as being of state and local importance.

Wildfire/ Emergency Access

Projects received higher scores if located on designated evacuation corridors or if they provide secondary routes for areas with limited or single access points for emergency response. Given Missoula's proximity to wildfire-prone areas and extensive Wildland-Urban Interface (WUI) zones, consideration was given to projects that enhance emergency access and evacuation capacity. While some projects may be located within the WUI, their purpose is to improve opportunities for safe evacuation and support emergency traffic flow in the event of a wildfire or other emergency.

Mitigation Areas:

While each transportation project included in the LRTP presents unique environmental considerations, all projects require some level of environmental review and coordination to identify and address potential impacts. The extent of environmental work varies by project, with some requiring more extensive assessments and mitigation efforts due to their location, scope, or proximity to sensitive resources. The following examples illustrate how projects within the LRTP have incorporated additional environmental considerations to ensure compliance with regulatory requirements and to minimize impacts on natural and cultural resources.

South Ave/Bitterroot River Bridge

The proposed South Avenue Bridge project, led by Missoula County in partnership with the Montana Department of Transportation and the Federal Highway Administration, incorporates environmental mitigation measures to minimize impacts on sensitive natural resources. A detailed Biological Assessment was completed in coordination with the U.S. Fish and Wildlife Service to evaluate potential effects on federally listed species. The assessment determined that the project would have no effect on several species, including Canada lynx, grizzly bear, water howellia, and red knot, and would not jeopardize the continued existence of whitebark pine or wolverine. While potential effects were identified for bull trout, bull trout critical habitat, and yellow-billed cuckoo, these impacts are being carefully addressed through targeted mitigation strategies. Additionally, the bridge design avoids sensitive habitats where possible, replaces the existing Maclay Bridge to consolidate crossings, and provides separated bicycle and pedestrian facilities to enhance safety while limiting disturbance to the Bitterroot River corridor.

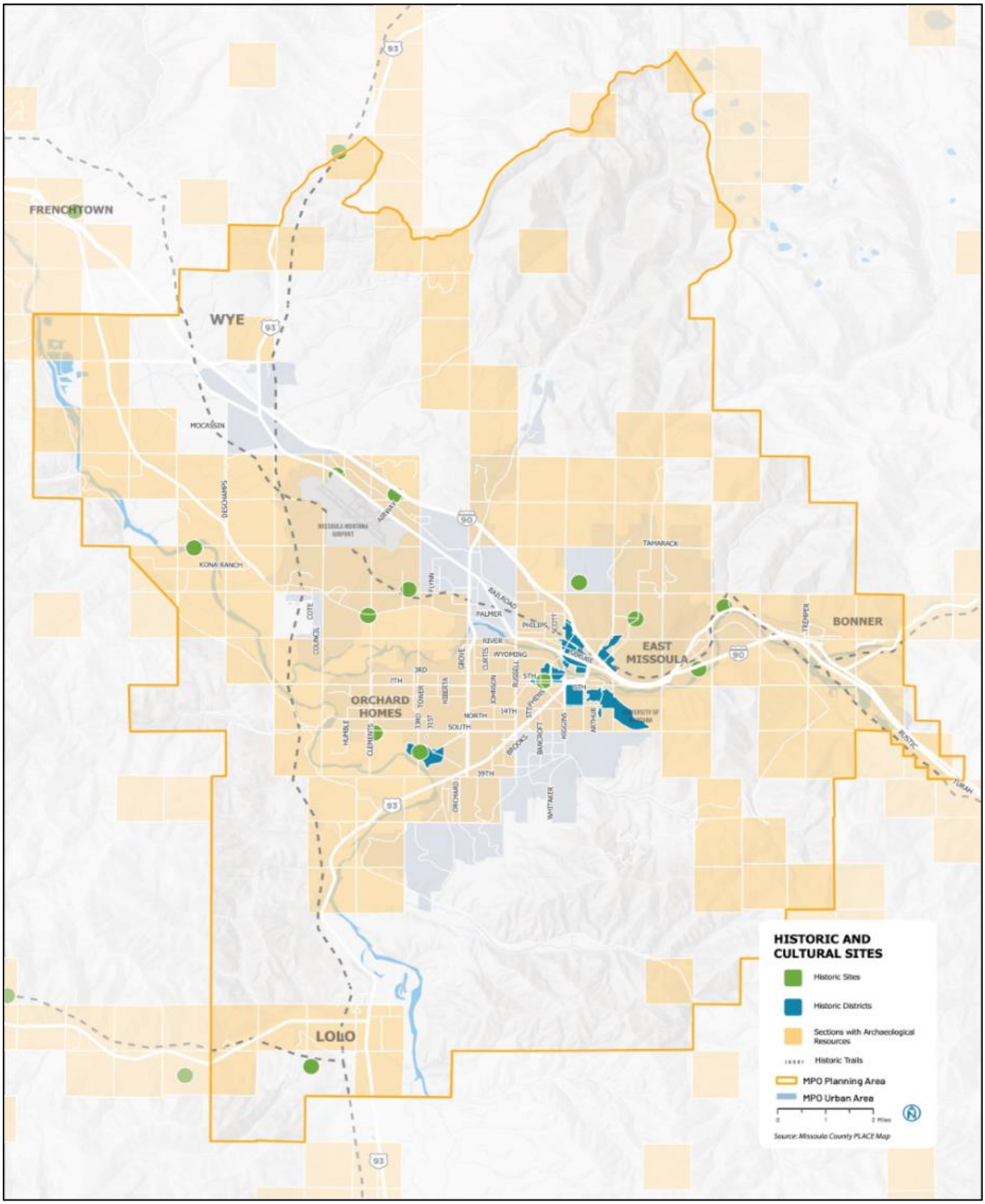
Grant Creek Restoration

The proposed Grant Creek restoration project demonstrates how environmental mitigation can be integrated with transportation improvements. As growth continues in the Grant Creek watershed, accelerated by the adoption of the Mullan Area Neighborhoods Master Plan and the Mullan BUILD grant, Missoula City and County have prioritized restoration efforts to address existing impairments and protect the stream's future health. Restoration activities, including stream channel reconstruction, riparian replanting, and flood control improvements, are being coordinated alongside transportation planning and development. This integrated approach helps balance transportation infrastructure needs with environmental mitigation.

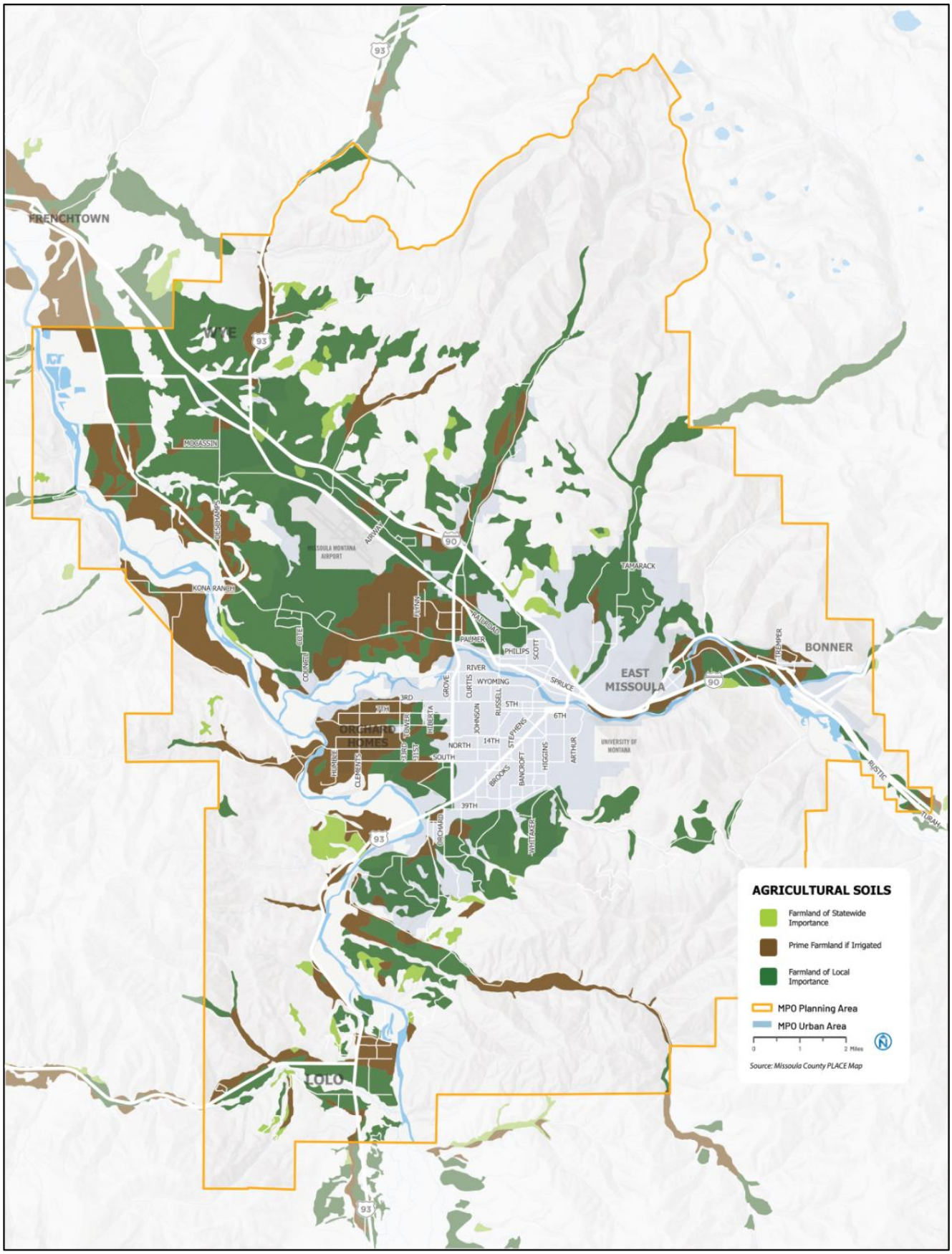
Environmental Conditions Maps:

The following maps reflect the environmental scoring criteria. They are intended to illustrate the general considerations and factors evaluated during the project prioritization process, specifically as they relate to the plan goal of advancing sustainability and community resilience in order to protect natural resources and address climate change.

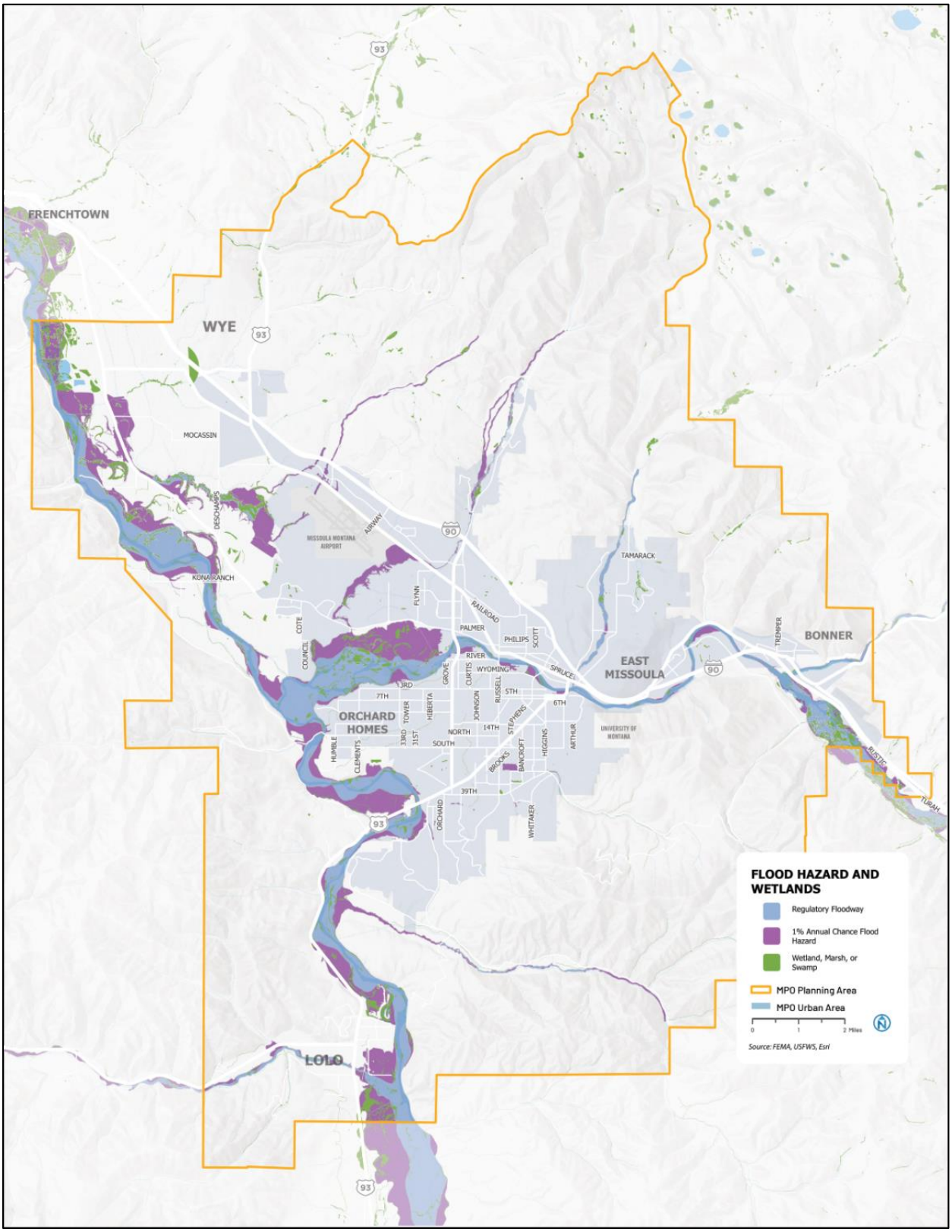
Map 1 - Historic and Cultural Sites, *Missoula County PLACE Map*



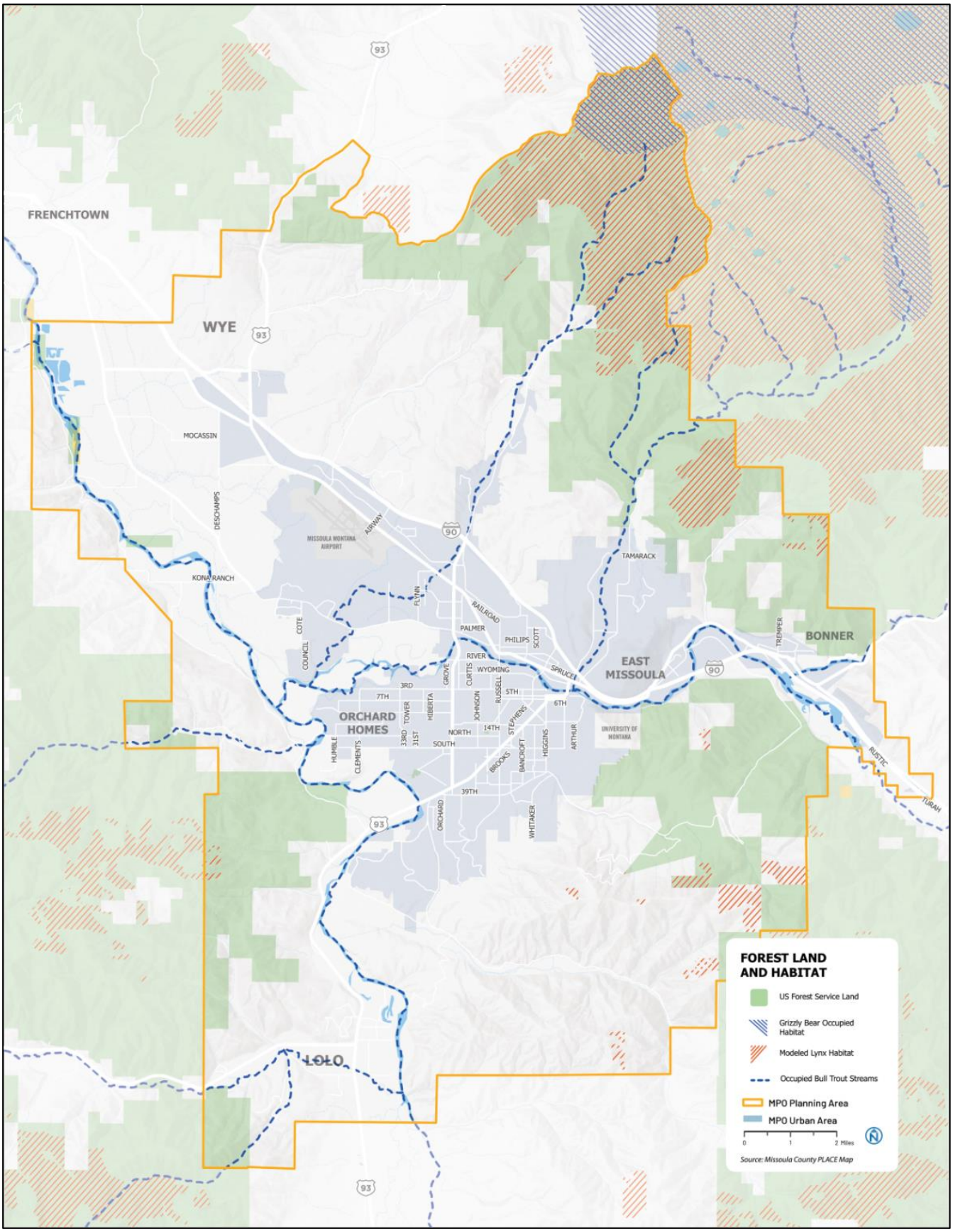
Map 2 - Agricultural Soils of Importance, *Missoula County PLACE Map*



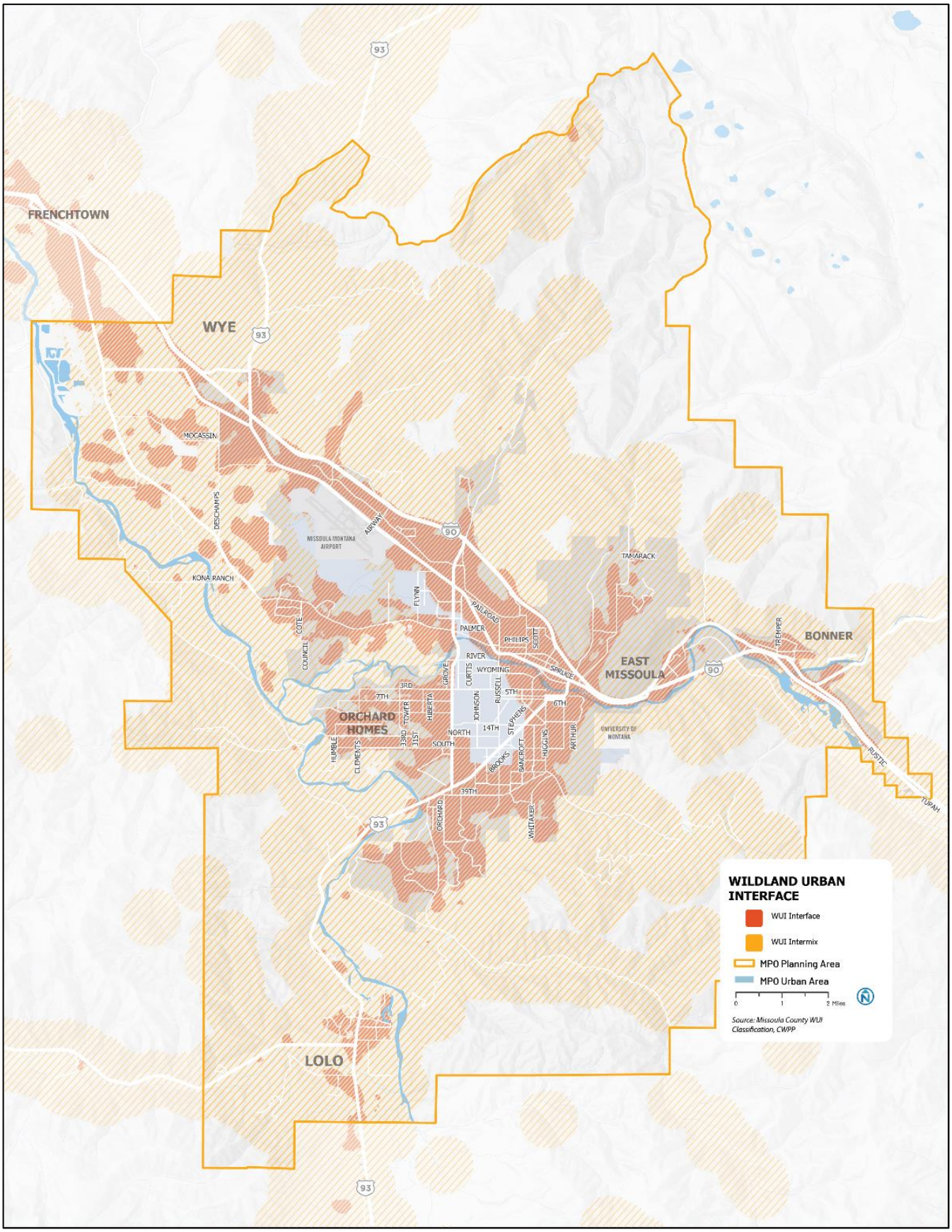
Map 3 - Flood Hazard Areas and Wetland, Marshes and Swamps, *FEMA, USFWS, ESRI*



Map 4 - US Forest Land and Critical Species Habitat, *Missoula County PLACE Map*



Map 5 - Wildland Urban Interface, Missoula County WUI Classification, CWPP



Appendix H

Disposition of Public Comments

Theme	Resolution
Fiscal Constraint	Fiscal constraint elements of the plan were updated to better reflect federal requirements, clarity for the reader, and to address errors in revenue projections. Changes include: updates to revenue projections and summaries; revision of project list details such as identification of eligible funding sources and added detail on near-term project sources and amounts; updates total plan project costs and revenues for tables in Chapter 8; addition of tables describing transit, programs and MDT-programmed funding; and, updated detail on federal, state and local funding sources. Changes to recommended projects due to revenue changes include shifting between near, medium and long term, and removal of 6 projects from recommended to illustrative.

Performance Measures	The Performance Measures section has been updated to provide greater clarity and alignment with federal and state requirements. New language reflects that the Air Quality Conformity Analysis will be completed following the plan's adoption. A more integrated narrative has been developed across Chapter 10, Achieving Success, and the Performance Measures appendix to explain how federal performance measures and state-adopted targets are addressed through project prioritization, programs, and policies. Clarifications have been added regarding the limitations of the travel demand model in representing mode split and how its outputs support the plan's intended outcomes. Additional language outlines the fiscal constraints on including capacity expansion projects and describes the plan's approach to congestion mitigation and system reliability. The section now integrates both the prior LRTP adoption year and current year state targets across all federal performance measures. A table from the existing conditions report has been added to show how the transportation system performs relative to federal and state targets, as well as Missoula Connect–specific goals and measures. The section also includes the latest adopted Transit Asset Management Plan targets, Public Transit Agency Safety Plan tables and narrative, and language describing progress toward the adopted strategic growth scenario from the 2020 LRTP update.

Appendix	Updates have been made to the Appendix to include missing materials, address public comments, and provide greater clarity and detail. These additions and revisions aim to directly respond to many of the issues raised by commenters during public review. The Public Engagement Summary now includes a record of agency meeting attendance and committee memberships. The Project List revised to include all projects, with added information on project extents, funding sources, and descriptions. A separate table has been created to distinguish between near-term committed and recommended projects, as well as to categorize MDT, Transit, and Program-related projects. The Existing Conditions appendix was expanded to include the full existing conditions report. Appendix maps were updated to show the entire planning area, with the exception of some bicycle and pedestrian facility maps, which remain focused on the urban area. A new "Projected Conditions" section was created in Appendix C to illustrate what the transportation system could look like in 2050 under a "build" vs "no-build" scenario and if current travel behaviors and trends continue. This includes population and employment growth projections, land use allocations by traffic analysis zone (TAZ), and model outputs such as future traffic volumes, level of service (LOS), vehicle miles traveled (VMT), mode splits, and travel times. This information was also included in Chapter 2 "How We Travel." Additional narrative highlights Missoula's role as a regional hub, with growing economic activity, tourism, air travel, and daily commuting from surrounding communities. Appendix C was also expanded to include a more detailed discussion of functional classification, and a two-page spread of maps were added in Chapter 1. The MPO Projected Revenue now includes a list of funding sources with linked definitions, and a new revenue table has been added to show each funding source alongside its description. The Travel Demand Model Documentation has also been added. The Performance Measures have been widely expanded (see above). The Transit Service Plan has also been added as an appendix to highlight the connection between the LRTP and TSP.

Page/Location	Comment	Source	Resolution
1	perhaps in parenthesis, it would help to add a phonetic spelling, so people reading the doc will know how to pronounce this word.	MDT	The final document was revised to incorporate the full phonetic spelling of Sx̌ʷtpqyen (S-wh-tip-KAYN).
2	continuing, cooperative, and comprehensive per 23 CFR 450.300(a)	MDT	The final document was updated so the text reads "continuing, cooperative, and comprehensive."
2	3-C's planning process is comprehensive, cooperative, and continuing	MDT	The final document was updated so the text reads "continuing, cooperative, and comprehensive."
2	missing any reference to transportation	MDT	Text was revised to read "transportation projects."
2	and the area expected to be urbanized within the 20-year planning horizon - 23 CFR 450.312(a)(1)	MDT	The final document was revised to include "the area expected to be urbanized within the 20-year planning horizon"
3	un-introduced acronyms. an acronym guide could help.	MDT	The final document was revised to introduce the acronym: "Bus Rapid Transit & Transit-oriented development."
4	25 years?	MDT	The final document was revised to read "25 years" which is the time horizon of this LRTP.
4	Highlighted: "short-term, medium-term, long-term, and illustrative."	MDT	The text now reads "we prioritized projects into a committed and recommended project list with short-term, medium-term, long-term, and illustrative identified."
4	Plan area map (Pg 4): How does the MPO boundary and urbanized area relate to the County, City and Land Use Plan areas? Would be helpful to include those in the Plan map.	CPDI	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2. A map of the MPO Planning and Urban areas was added to Chapter 1. Links to the land use plans were also included for the reader to find more information.
4	Suggest making a point of being specific when referring to Missoula (i.e. between city, county, region. For example on pg 4: A strong transportation plan is critical to the success of Missoula's growth policy…')	CPDI	The text was changed to "the City of Missoula Land Use Plan and the Missoula County Growth Policy."
6	Recommended and Committed projects list with short, mid, long-term identified.	MDT	The text now reads "we prioritized projects into a committed and recommended project list with short-term, medium-term, long-term, and illustrative identified."
7	FHWA and FTA non-voting members	MDT	The final document was revised to show FHWA and FTA as non-voting members.
7	specify jurisdiction	MDT	The final document was updated to reference the Missoula Consolidated Planning Board.
8	un-introduced acronym	MDT	The Transit Strategic Plan (TSP) referenced in the draft document has been updated to Transit Service Plan. This plan is introudced, discussed in greater detail, and attached as an appendix. The appendix is referenced in the document in Chapter 2 and Chapter
8	Community Partner Presentations > Do you define TSP earlier in the plan? I'm not seeing it	CPDI	The Transit Strategic Plan (TSP) referenced in the draft document has been updated to Transit Service Plan.
9	last paragraph on previous page refers to the previous plan as Missoula Connect 2050, which is also the title of the current plan. Using these terms interchangeably is somewhat confusing for the reader	MDT	Updated the plan title to "Missoula Connect 2050 Long-Range Transportation Plan Update" and revised all references to use "2021 Missoula Connect" and "2025 Missoula Connect Update" as appropriate.
10	other transportation mode demands are also increasing, not only transit and active transportation	MDT	The final document was revised to offer more detailed and clearer insights into travel behavior in Missoula. Updated text is included in Chapter 2 in the "How We Travel" section. Additional information also added to appendix C "Existing and Projected Conditions"
10	what percentage of the increase in goods transportation demand is accomplished by transit and active transportation?	MDT	The final document was revised to offer more detailed and clearer insights into travel behavior in Missoula. Updated text is included in Chapter 2. The language noted in this comment has been changed.
10	A Growing Region > The last two sentences in the first paragraph confuse me some; it makes it sound like demand for transit and active transportation is what is stressing the system	CPDI	The final document was revised to offer more detailed and clearer insights into travel behavior in Missoula. Updated text is included in Chapter 2. The language noted in this comment has been changed.
11	are housing costs the only expense that make Missoula affordability a challenge?	MDT	This text, now on page 23, was updated to read "Like many metropolitan areas across the United States, the Missoula region is experiencing a rise in housing costs that outpaces wage growth, making it increasingly difficult for many residents to find affordable housing. Because transportation is typically the second-largest household expense, reducing transportation costs can play a key role in lowering the overall cost of living. This highlights the importance of providing accessible, affordable, and reliable transportation options that connect Missoula-area residents to jobs, schools, essential services, and recreational opportunities. As we grow, we must ensure that everyone in the Missoula area has access to high-quality transportation options that connect us to the places we go. About half of our region's residents make less than $40,000 per year. Providing affordable options—like Mountain Line, which is fare-free—can increase access to jobs, schools, and services for everyone."

11	Changes in Affordability; 2nd paragraph: "..a household's second highest expense." This is a key component: helping families, residents have more affordable options is a key component. Who uses the Mountain Line mainly? working class, college students, young people, retired? When the commenter has promoted different forms of transportation in Missoula, he has heard people question if the system is safe for women and young people to use? How is the security in both inside buses and at bus stops, are there many incidents reported? This is just for the commenters knowledge and to share the information when questions from the public come up.	MDT	An assessment of current Mountain Line ridership trends is outlined in the Transit Conditions analysis in Appendix C. Additionally, the Tranist Service Plan is attached as Appendix J.
10	There are some characterizations in the existing conditions chapter that we are wondering if they might be worth considering aligning some more with the land use plan and the community profile, including: Characterization of the 'economy being more diversified' (i.e. pg 10) We didn't see that to be the case especially in the community profile. Missoula hasn't became a hub of a new industry. Its lost some industries and gained in other industries (following what has been going on for several decades). The data may even suggest that over the past couple decades the economy is becoming less diversified.	CPDI	No text was changed, as the plan specifically refers to the last several years rather than the past few decades.
11	Affordability section (pg 11): we are wondering if the language/points made in this section could this be stronger? Affordability in Missoula has been a key issue and driver of the land use plan update. Do the median home sale price numbers look representative of Missoula? You probably have done this already but if not, it might be worth running this section by the CPDI housing team.	CPDI	This topic is addressed in more detail in Existing Condtions pg 2-16. In addition the chart in the final plan has been corrected, our Montana Regional MLS 2024 is in line with the link provided, where the top end is below $600k
12	are there other potential factors? If anything one would expect walking and biking to be up compared to carpooling & transit when considering lingering social distancing or issues related to the pandemic.	MDT	The text was revised to note that "Due to the lasting impacts of the COVID-19 pandemic on commuting patterns, more people are working from home than ever before. As a result, carpooling, walking, biking, and transit use have all declined slightly as modes as those commuters transitioned to telework." This text is now on page 12.
12	relating to a previous comment about title's of this and the previous LRTP, this feels more appropriate then calling them both Missoula Connect 2050	MDT	In response to this comment the plan title was updated to "Missoula Connect 2050 Long-Range Transportation Plan Update" and revised all references to use "2021 Missoula Connect" and "2025 Missoula Connect Update" as appropriate.
12	this is a very hard metric to measure via statistically valid methods without a household travel survey, what is the data source?	MDT	The MPO conducted a household survey. More information is included in the Existing Conditions appendix. Final plan updated for source and reference to Appendix C.
12	The "What are our mode split goals" graphic is confusing. Should it be 'what 'were' our goals'? The icons don't convey the findings. Also related to the findings, is it worth calling out more that we have met our goal to 'achieve a small increase in carpool and work from home' (because of Covid)? And is that goal altered in the new plan?	CPDI	The final document was revised to incorporate the recommendation provided in this comment. The section heading was hcanged to "Our Mode Split Goals" and an additonal smaller heading, below the graphics,was added that says "Progress since 2021 Missoula Connect LRTP".
13	Why?	MDT	The text referenced here, realted to the the cost of operating both fixed-route and paratransit services, has been removed from the plan document.
14	how were these variables weighted and measured? presence/absence? % threshold? some other combination of variables together or alone?	MDT	This is covered in more detail in Existing Conditions pg 2-17 "Using the three variables, the percentage of households/population in each block group was computed. From there, each variable for each block group was given a score from 0 to 10 based on the distribution of percentages. The three scores were then added together to get a final, combined score
14	Focusing on Equity (pg14): This map doesn't seem to support the 'Urban vs non-urban' statement on pg 18 that people further out from the downtown core most need affordable and efficient transportation.	CPDI	Clarified to highlight the transportation needs of residents in outlying areas such as the Wye and Lower Miller Creek. Text was added on page 21: "Many of the people living in areas further out from the downtown core, like the Wye and Lower Miller Creek, need access to affordable and efficient transportation."
14	In Chapter 2, Focusing on Equity, I'm really struggling to believe that zero neighborhoods outside of the city didn't meet any of the equity criteria (low-income, non-white population, zero vehicle households). In the screenshot below, the percentage (0-1) of low to moderate income households are shown using census block groups. Data from ACS. Darker colors indicate higher percentages.	Missoula County PDS	This is covered in more detail in Existing Conditions pg 2-17, a more expansive index (Transit Propensity) is included following that in the ECR, this six variable analysis shows additional areas of need outside the core
15	MDT?	MDT	The final document was revised to correct the typo to "MDT"
17	What about visitors/non-residents? How does this plan ensure they too can get around in the MPO area?	MDT	The final document was revised to offer more detailed and clearer insights into travel behavior in Missoula. Updated text is included in Chapter 2 in the "How We Travel" section, on page 11 and 12. A refernce to the 2024 Destination Stewardship Plan was aaded. Additional information also added to appendix C "Existing and Projected Conditions"
18	Connecting Urban and Rural; 3rd sentence: "..people who most need affordable and efficient transportation..." Do people in these areas most need affordable transportation systems because of income reasons or because of the lack of public transit? What is the main reason that people in these areas can be categorized as "people who most need affordable and efficient transportation"	MDT	Clarified to highlight the transportation needs of residents in outlying areas such as the Wye and Lower Miller Creek. Text was added on page 21: "Many of the people living in areas further out from the downtown core, like the Wye and Lower Miller Creek, need access to affordable and efficient transportation."
18	Urban vs non-urban (pg 18): -See comment above related to equity map on pg 14. -The Land Use Plan built on previous transportation planning work to recognize the differences in built environment, based on mobility options over time, between urban, limited urban (suburban) and rural places, and what the mobility and transportation implications are between them; would be cool to call that out here (it's foundational to how the place and street types were developed.)	CPDI	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2 on page 24.
19	The Land Use Plan encompasses 63 square miles while the MPO planning area is 263 square miles. How are the additional 200 square miles of the MPO area considered and addressed in the context of integrating land use and transportation??	MDT	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2. A new section on the County Growth Policy and Land Use Element has been added. This text is on page 26. "The planning in the LRTP extends beyond the Missoula city limits to include the adjacent urbanized areas of Missoula County. The One Community approach, central to the Missoula County Growth Policy, recognizes that while the city and county are governed separately, they form a single, interconnected community. Residents in the County rely on a seamless and consistent network as they move between jurisdictions, whether walking, biking, driving, or taking transit. This perspective guided the LRTP to ensure that projects in both jurisdictions reflect a unified vision for how the Missoula area grows and moves."
19	only for the 63 out of 263 square miles of the MPO planning area...	MDT	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2 in order to address the full extent of the MPO Planning Area. A new section on the County Growth Policy and Land Use Element has been added. This text is on page 26.
19	not for the whole MPO region, see above comment	MDT	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2 in order to address the full extent of the MPO Planning Area. A new section on the County Growth Policy and Land Use Element has been added. This text is on page 26.

19	Integrating land use and transportation (pg 19-20): -Why not make a connection here to the street types (if not also the place types)? That is the area of the land use plan that is most directly related to connecting land use and mobility. -Either in this section or in the 'Focusing on Equity' section, it seems like it would be worth making a connection to the equity in land use evaluation that informed the land use plan. -Re; focus inward: The Land Use Plan modifies our understanding of 'focus inward' and generally raises housing capacity and distributes it more broadly throughout the planning area, not just the urban core, which will impact transportation considerations.	CPDI	This comment was addressed by expanding the Integrating Land Use and Transportation section in Chapter 2, on page 24. "In the City of Missoula, inward growth is achieved by concentrating development within the urban core, while Missoula County supports targeted growth by directing development toward existing communities and designated growth areas."
20	Due to mention of scenario planning, compliance with 23 CFR 450.324(f)(4)(ii) is required	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See description of changes at the top of the table for additional context.
21	What We Heard > I don't love the "key theme" under 1, 2, and 3. It seems like you'll be pulling out three key themes from the entire process, not one theme per phase. Consider omitting "key theme" or maybe replacing it with a name for each phase of engagement, or add phase before the number. It may be nice if this closer resembles the titles in "How We Engaged," e.g., using roman numerals and using the phase titles.	CPDI	We appreciate this comment and its recommendation for increased clarity. However, as no other comments were directed to this section, we focused our efforts on areas that received more feedback.
22	Transit strategic plan?	MDT	The Transit Strategic Plan (TSP) referenced in the draft document has been updated to Transit Service Plan.
32	Highlighted: "network connectivity"	MDT	The final document was revised to remove the text gap that was highlighted.
32	Goals (pg 32): For the Goal to 'Expand mobility choices to improve efficiency and accessibility for people and goods', this seems like the goal that would be most relevant to the integrating consideration of the street type concept.	CPDI	Clarified the role of street types in the "Integrating Land Use and Transportation" section. While street types are important to Missoula's transportation network, implementation will occur through future code updates—LRTP projects remain conceptual and do not prescribe specific designs.
35	all projects expected to be funded by title 23 or title 49 funds within the MPO area are required to be on the list	MDT	The final document was revised to incorporate the recommendation provided in this comment.
37	Tiny note, but under goal 2 I think I prefer "Emergency Management" over emergency response so that it aligns with OEM and the flashing light icon + response makes me think just of ambulances and fire trucks, but not the system. Management seems to have more of a long-term focus too.	CPDI	The final document was revised update text to "Emergency Management"
40	how?	MDT	Additional language has been added throughout the document to reference the role of Performance Measures in evaluating scenarios. It also clarifies that project prioritization emphasized support for the Strategic Growth scenario—particularly projects that promote increased infill development.
40	Due to mention of scenario planning, compliance with 23 CFR 450.324(f)(4)(ii) is required for this plan and the future plan	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See description of changes at the top of the table for additional context.
43	All near term projects need to be fiscally constrained with specific funding sources identified. Not all projects are eligible for all funding sources due to project scope or location	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
43	How can the project list be fiscally constrained if multiple sources of funding are considered for each project? How does the plan ensure revenues match expenditures on a per funding source basis?	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
45	The maps on pages 45-48 (recommended projects by category). Why doesn't this map show the entire MPO area? I understand the need to put an inset map to highlight core areas of the city but this map doesn't even show the entire MPO region.	Missoula County PDS	A map of the MPO planning area is included in both the Plan Introduction and Existing Conditions sections. Project maps are limited to the extent of included proejcts to maintain legibility. However, an online interactive map showing all projects across the entire planning area is available [https://cityofmissoula.maps.arcgis.com/apps/webappviewer/index.html?id=2f7daab0a5d545d89540ff48a4bb8563].
49	This projects list is not fiscally constrain-able without identifying funding sources and amounts for each project so costs can be aligned with revenues	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
49	Projects (pg 49): I probably missed it, but an explanation of why some project don't have ID numbers or info on where to where would be helpful.	CPDI	Projects without IDs are those programmed in the TIP but not included as LRTP projects.
56	C91 is such an important multi-modal connection between the urban core and the rapidly developing Mullan area. There is not a better alternative for safe comfortable active transportation than this connection. Unfortunate for the thousands of people moving there that this isn't a higher priority. Where is the list of illustrative projects? It's hard to tell from the map what exactly a project is referring to.	Missoula Parks & Recreation	We agree that this is an important project for the region. The LRTP scoring and financial constraints guided project prioritization, but this project remains a high priority for grant funding.
63	what is the bitterroot trail improvement project #?	Missoula Parks & Recreation	Added project C266 for the Bitterroot Trail to the graphic.
65	I appreciate that you included "Reconnecting East Missoula" as a case study on page 65.	Missoula County PDS	No changes needed.
69	Didn't see this in Appendix H unless I missed it?	MDT	The appendix was updated to include missing information and references were revised accordingly throughout the document.
69	This critically important appendix appears to be missing. Also may not be the correct appendix reference as App H is performance measures. There are some details on state funds here but there should be a definitive list of funding sources with appropriate definitions.	MDT	The appendix was updated to include missing information and references were revised accordingly throughout the document. MPO Funding Sources and Projected Revenue has been added as Appendix E.
71	How are programs funded? How included in fiscal constraint determination?	MDT	Added a description explaining that programs and policies are funded through various sources. Page 79 "Programs and policies will be funded through various sources including unallocated federal funds (where eligible), dedicated City or County funding (ex. NTMP), and PL funds for planning activities."
73	What does this process look like and how is it different then current practice? How many of these programs are committed, recommended, or illustrative based on available funding?	MDT	No change to language in the plan needed; the reference to MDT as a partner is to reflect the need for close coordination on any efforts that affect the region's primary arterial corridors that are within MDT ROW. However, a description explaining that programs and policies are funded through various sources has been added. Page 79 "Programs and policies will be funded through various sources including unallocated federal funds (where eligible), dedicated City or County funding (ex. NTMP), and PL funds for planning activities."

76	May not align with MDT's corridor study prioritization process and selection criteria	MDT	MDT is listed as partner for MPO initiated corridor studies, which may have a different prioritization than the statewide process. Many of the regional corridors requiring additional study in Missoula are along MDT ROW, hence the need for partnership and coordination in the planning process. The final document was revised to read: "Prioritize a list and seek funding to support multimodal studies of key regional corridors to improve design documentation for grant pursuits. The MPO will need to coordinate with MDT on the prioritization and selection process of recommended corridors. Potential corridors of regional significance to consider include Broadway Street, Orange Street, and Mullan Road. "
78	Funding?	MDT	Added a description explaining that programs and policies are funded through various sources. Page 79 "Programs and policies will be funded through various sources including unallocated federal funds (where eligible), dedicated City or County funding (ex. NTMP), and PL funds for planning activities."
79	What role does MDT play? Does it align with MDT CN and maintenance practices?	MDT	The final document was revised to read: "Identify priority improvement areas from other plans and develop guidelines for encouraging new development to expand landscaping plans using native vegetation, street shading, and stormwater management. The MPO can assist with implementing relevant code actions of the Land Use Plan such as developing standards for tree planting and health, and protection requirements during construction activities. Additional coordination could be required on MDT right-of-way to ensure these improvements meet state construction requirements."
79	We've had numerous conversations MDT about the need for a traffic light and some improvements at Waldo Road and Highway 93 N, on the north end of the Wye. Apparently, there's a signal warrant for this. They're actively trying to put together funding for this using various mechanisms- RSID, TEDD funding, etc. Why doesn't something like this make the recommended project list? I see that it's mentioned on page 79, but that's about it.	Missoula County PDS	Projects included in the Wye Infrastructure Plan will be incorporated into the LRTP after the Wye Plan is formally adopted and were not included at this time. Regional Development Coordination trext was revised on page 89 to read: "WHY IT MATTERS: Missoula Connect's preferred scenario emphasizes inward growth, and the County supports this approach in the region by accommodating planned development in areas like the Wye through its Land Use Element and targeted land use planning. These growth areas, identified in past planning efforts, require improved transportation connectivity to support changing travel patterns, meet countywide housing needs, and reduce development pressure on rural and environmentally sensitive areas. WHERE ARE WE NOW? The MPO regularly coordinates with Missoula County to ensure transportation planning accounts for future growth in outlying areas and aligns infrastructure investments with regional mobility priorities. One example is the Wye area near the intersection of I-90 and Hwy 93. Currently, there are approximately 3,500 homes and 1.5 million square feet of residential and industrial projects planned for the next 20 years. The theoretical build out is significantly more, up to 15,000 new homes in planned residential neighborhoods and more than 1,000 acres of land for economic development. To identify the infrastructure upgrades needed to support this growth, including traffic operations and non-motorized circulation, Missoula County produced the 2024 Wye Infrastructure Plan. NEXT STEPS: Develop a program oriented towards completing transportation area plans surrounding development hot spots within the City and County and support implementation of recommendations. The Wye Infrastructure Plan identifies numerous multimodal needs to accommodate future growth, including key intersection improvements such as upgrades to the I-90 westbound ramps and a new traffic signal at Hwy-93 and Waldo Rd. Following adoption of the Wye Infrastructure Plan, these recommended projects will be more fully integrated into the LRTP."
79	I'm really not comfortable with the language used under the Regional Development Coordination on page 79, "Despite adopting a grow inward scenario as part of Missoula Connect and City of Missoula Growth Policy, the region continues to grow outward transportation connectivity and capacity pinch points and within the county and city resulting a shift in travel patterns across the region." The passive aggression here is off the charts. Much of the development north of the Wye is entitled growth, meaning that it was approved sometimes a decade or more ago which means it should have been factored in in previous LRTPs. Large PUDs like Grass Valley Gardens were identified for development in our 2019 comprehensive plan update, the Missoula Land Use Element. That plan was predated the last LRTP update. One of the most important elements of planning for greater residential and non-residential density at the Wye requires some regional context. By creating opportunities for development in a place where infrastructure is either in place or where there's a plan to provide it, the County has an opportunity to reduce the amount of new development in areas where it 1) consumes valuable open space and agricultural lands 2) is more expensive for the County and schools districts to provide services 3) creates greater travel demand (i.e., higher VMT and higher vehicle emissions) 4) is at higher risk of flooding and wildfire. In short, we're encouraging development at the Wye in order to reduce rural and suburban sprawl in other areas of unincorporated Missoula County. The Wye plan is just one component of a larger strategy to reduce urban sprawl in the County, which includes tools such as zoning. The city recently developed a forecast of population and housing that includes both the city and the county. According to this forecast, the total county population will grow by 48,731 people by 2045. In its preferred population forecast, the City will grow by 37,377. Using that population projection, that leaves 11,354 people (approx. 4,500	Missoula County PDS	This comment was addressed by expanding the "Integrating Land Use and Transportation" and "Regional Development Coordination" sections of the LRTP to incorporate the County's perspective and feedback. Missoula Connect's preferred scenario emphasizes inward growth, an approach supported by the County through its Land Use Element and targeted planning in areas such as the Wye. These planned growth areas, identified in previous planning efforts, require enhanced transportation connectivity to support evolving travel patterns, address countywide housing needs, and reduce development pressure on rural and environmentally sensitive areas. New text can be seen on page 24 and page 89.
82	Street types is a recommended policy. Please also add/include trail types and reference the PROST. You could modify this policy "street and trail types"	Missoula Parks & Recreation	A reference to Trail Types has been added on page 92. Following the formal adoption of the PROST plan, Trail Types can be integrated more fully into the LRTP.
89	changing roadway design through routine maintenance efforts? How can this be accomplished while also ensuring safety for all users and maintaining design standards for federal aid eligibility?	MDT	The final document was revised to change "implement better roadway design" to "ensure safety for all users."
89	I don't believe these are county departments...	MDT	The final document was revised to incorporate County Public Works and County Parks & Trails.
90	I think this paragraph discusses a different subject, not related to rail at grade crossing safety - as the title discloses. Quiet zones typically don't improve safety at crossings. I recommend relocating this paragraph or find a way to better link it to the discussion. For instance, how could a quiet zone improve safety at the Spruce/Madison st crossing.	MDT	The final document was revised to inlcude a heading called "Freight & Rail Quiet Zones."
90	As I read this sentence, it implies that BNSF purchased the 900 miles of track from MRL. This is not the case. BNSF owned the line MRL operated on and MRL ended the lease (its right to operate on the line) early.	MDT	The final document was revised on page 100 to read "In January 2024, BNSF Railway Company resumed direct operations of more than 900 miles of track from Billings to Spokane after the early termination of Montana Rail Link's (MRL) lease. MRL, a Missoula-based Class II freight railroad, had operated on BNSF-owned tracks under a long-term lease agreement."

91	BSPRA did not commence a study but received a CID grant designed to facilitate passenger rail planning and development.	MDT	The final document was revised on page 100 to read "In summer 2024, BSPRA was awarded funding through the Federal Railroad Administration's (FRA) Corridor Identification and Development (CID) Program to support planning and development efforts for future passenger rail service along the Big Sky North Coast Corridor, which includes Missoula."
91	I would encourage sensitivity in this statement. The long distance study was meant to evaluate restoration of discontinued long distance routes and was not necessarily designed to direct Congress to consider funding but to inform Congress. The study included estimated route costs, but its at the discretion of Congress to consider funding for any of the preferred routes identified. The study is also clear in stating that the preferred routes are not a proposal for service.	MDT	The final document was revised on page 101 to read "In January 2025, FRA released its final report on the Amtrak Daily Long-Distance Service Study, which identified the Big Sky North Coast Corridor as one of 15 discontinued long-distance routes with potential for restoration. The study is intended to inform Congress by providing data, analysis, and estimated costs, but does not propose new service or direct funding decisions. Any consideration of restoring service remains at the discretion of Congress."
91	BSPRA was not established by the legislature in 2020. Existing MCA code (MCA 7.14.16) already provided for the establishment of rail authorities. BSPRA was simply formalized or established in 2020.	MDT	The final document was revised on page 101 to read "There has been ongoing advocacy to bring passenger rail back to southern Montana. The Big Sky Passenger Rail Authority (BSPRA) was formally established in 2020 under existing state law, following a joint resolution by 12 counties."
94	and state government... see the multiple bills in the 2025 MT Legislative Session addressing or attempting to address AVs, autonomous commercial vehicle platooning, etc..	MDT	The final document was revised on page 104 to read "Many policies, practices, and requirements are established by the federal and state government."
96	•below issues on p. 96 may be due to rounding. I'm not sure, but maybe double check and/or consider adding a footnote about rounding op.96 > the near-term column adds up to 255M, not 252? op.96 > I'm getting a total of 523.9M for the medium-term column op.96 > I'm getting a total of 612.1M for the long-term column op.96 > I'm also getting inconsistent numbers when adding the rows	CPDI	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
97	This is not the correct method to fiscally constrain an LRTP in alignment with federal regulations - 23 CFR 450.324(f)(11). The fiscally contstrained project list needs to be time bound and must account for ALL projects and programs proposed for funding under title 23 and title 49 chapter 54, not just those deemed to be "discretionary".	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
97	Appendix XX?	MDT	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context. This specifc error on page 97 was corrected.
97	another small thing. the bottom row of the chart says 2026-2050, when near term starts at 2025.	CPDI	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
98	seems weird to say federal funding is a local funding source	MDT	The final document was revised to delete the reference to federal funding as a local funding source
98	Not mentioning or prioritizing the importance of the NH and IM programs (Interstate and Non-Interstate National Highway System Funding) is an unfortunate miss and potential deviation from 23 CFR 450.324(f)(2)	MDT	A detailed list of funding sources and descriptions is included in Appendix E - MPO Projected Revenue
103	I know this section is referring to more local revenue streams, but it feels important to mention that there are already additional fees for EVs based on their heavier weight, as well as a tax of $0.03 per kWh on electricity sold at charging stations. I'm not an expert on where money flows, but it's my understanding these measures are already in place to offset loss of gas tax revenues. Maybe there could be some clarification that local entities aren't seeing the funds from these additional fees?	CPDI	Updated Fleet Pricing and Weight Charge tax
105	naming convention	MDT	Updated the plan title to "Missoula Connect 2050 Long-Range Transportation Plan Update" and revised all references to use "2021 Missoula Connect" and "2025 Missoula Connect Update" as appropriate.
106	Confirm these facts and figures align with statements made on page 12 (PDF page 8)... there appear to be discrepancies currently	MDT	The final document was revised to change language to "mostly constant."
106	spelling	MDT	The final document was revised to correct typo.
107	missing	MDT	Appendix F - Model Documentation has been added which addresses this comment.
107	I've chatted a few times with Aaron Wilson about the growth scenarios and updates to the TAZ data. It's not clear to me what happened to the growth scenarios during this LRTP update. Were the population forecasts updated to reflect the best available data? Was committed, planned or approved development included in this update? Those are routine steps in updating a TDM, in my professional experience. In the discussion of the TDM on page 107, I don't see any of this addressed.	Missoula County PDS	Appendix F - Model Documentation has been added which addresses this comment.
108	I was under the impression the MPO was also looking at air quality for potential PM 2.5 non-attainment designation	MDT	Air Quality section has been updated in Appendix C - Existing and Projected Conditions.
108	Missing and incorrect references (reversed)	MDT	The refrence tothe correct appendix has been added
108	MOVES 5 now available, this version may be quite outdated	MDT	The final document was revised to update text to "MOVES 4"
109	this is not detailed below	MDT	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context.
109	Only lists 6 and missing project delivery	MDT	The final document was revised to include "Project Delivery: 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."
109	Transportation performance measures are specifically designed around numeric quantifiable metrics. It is unfortunate to not share any numbers about targets and progress towards the targets in the main body of the LRTP when the program was specifically intended to center around numeric measures.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
112	Writing error?	MDT	The final document was revised change the typo to "Freight and Goods Delivery Management"
112	450.324(f)(5) – Page 112, under the Freight Movement and Economic Vitality Performance Management section – what is the Freight and Gandy Management Program? Not seeing robust analysis on the operational and management strategies to relieve vehicular congestion beyond mode shift goals.	FHWA/FTA	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context.
116	without numbers the magnitude of the target trajectory is completely lost... are we talking 0.1%, 1%, 10%, or 100% changes for each target?	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 22	this list should better identify from/to points (i.e., what is the beginning and end point of C100 Mullan Rd Widening?)	MDT	The proejct list in Appendix B was updated to include project list extents and descriptions.
Appendix: 23	what is the difference between C59, C58 and C77?	MDT	The proejct list in Appendix B was updated to include project list extents and descriptions.

Appendix: 25	An overview of completed and ongoing plans is not a comprehensive analysis of existing conditions especially when only select plans are included. What about other agencies plans including Missoula County and MDT and resource agencies?	MDT	The Appendix C now includes the full existing and projected conditions report.
Appendix: 29	?	MDT	The final document was revised to remove "Draft"
Appendix: 38	These revenues need to be directly assigned (for near term projects at a minimum) to specific projects to show fiscal constraint	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 38	What are the asterisks for?	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 38	These time frames do not align with those in the main body of the final plan i.e. near term 2025-2029	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 38	how does this compare/include the 10M above?	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 39	total revenue shows 1.3 billion, page 39 the final plan shows 1.4 billion in expenses on page 96	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 42	It would be beneficial if this table was revised to better align with the funding programs and their names as found in the Missoula TIP… STP in particular is not clear due to its many set asides	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See description of changes at the top of the table for additional context.
Appendix: 42	this statement is incorrect	MDT	The final document was revised to reference using "MOVES 4"
Appendix: 42	Moves5 released Nov. 2024; Guidance allows Moves3 to be used until May8, 2025 and additional guidance allows Moves4 to be used until September 12th,2025	MDT	The final document was revised to reference using "MOVES 4"
Appendix: 43	where is the data to show the results described in the paragraphs below? This appendix appears to be substantially incomplete	MDT	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context.
Appendix: 43	When will this information be provided?	MDT	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context.
Appendix: 44	Appendix H appears to be outdated, no references to the most recent highway authorization, only references MAP-21 and FAST Act. The material in this appendix is a blend of local and national performance measures, with a lack of a focused discussion on the requirements. Ex: pointing to safety goals established in the Community Safety Plan - the MPO has adopted the State targets, for the purposes of meeting regulations, the goals of the CTSP are somewhat irrelevant.	FHWA/FTA	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 44	it is impossible to review the LRTP for regulatory compliance without this information, additional review time should be provided	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 46	The Appendix mentions that pavement condition for the Missoula area utilizes a PCI value. It is unclear what PCI means and how it is utilized.	MDT	The final document was revised to incorporate a definition for PCI.
Appendix: 47	450.324(f)(11)(i) – Page 47 of the appendix includes a table by road classification, not system. Was cost analysis completed at the highway system level to operate and maintain the fed-aid highway and public transportation?	FHWA/FTA	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 48	this appendix does not currently meet the requirements of 23 CFR 450.324 for system performance reporting. Substantial changes are needed to become compliant	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 48	It may be helpful to define what reliability is, in the context of federal reporting, so that the reader can understand what the values in the table mean.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 49	Propose revising this statement to read something like this: "MDT is required to set 2- and 4- year reliability targets pursuant to the Code of Federal Regulations Title 23 Part 490. The 2- and 4- year targets for the 2022 to 2025 performance period are identified in the table below."	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 49	What do these values compare and how are they meaningful? Because these values are a ratio there are no units. They have no meaning without context.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 49	Suggest making this statement the last sentence of the first paragraph in this section.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 49	freight performance measures and targets are required only for interstates on the NHS, not the entire National Highway Freight Network. Suggest revising this statement.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
Appendix: 49	Is this correct? Should it be "Gandy"?	MDT	The final document was revised to change this typo to "Freight and Goods Delivery Management"
Appendix: 49	Propose revising this statement to read something like this: "MDT is required to set 2- and 4- year reliability targets for freight, pursuant to the Code of Federal Regulations Title 23 Part 490. The 2- and 4- year targets for the 2022 to 2025 performance period are identified in the table below."	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
CFR	450.324(e) - Draft does not include supporting documentation on estimates and assumptions for population, land use, travel, employment, congestion, and economic activity	FHWA/FTA	Travel Demand documentation has been added as Appendix F and projected future conditions are discussed in Appendix C.
CFR	450.324(f)(1) - Draft does not include supporting documentation on the demand of movement of people and goods within the planning area	FHWA/FTA	Travel Demand documentation has been added as Appendix F and projected future conditions are discussed in Appendix C.
CFR	450.324(f)(2) - Plan lacks a discussion on how the transportation system operates as a whole and where the needs are. No discussion on systems or facilities that serve national or regional transportation functions. oPlan lacks a map and description of the highway systems, functional classification, etc.	FHWA/FTA	This LRTP includes a detailed representation of existing facilities and transit service within Chapter 2 and the Existing Conditions Appendix C. The plan also includes proposed facilities through representation of the recommended project list across maps and list, and graphical representation of the future transit service network resulting from the Mountain Line Transit Strategic Plan (2025).
CFR	450.324(f)(3) – o inclusion of performance measures/targets from 49 U.S.C. 5326(c) (Transit Asset Management) and 49 U.S.C. 5329(d) (Public Transportation Agency Safety Plan). The Appendix has TAM discussed, but seems out of date, and the main document doesn't include transit performance measures/targets.	FHWA/FTA	The Missoula MPO integrates transit performance measures into the LRTP through inclusion in Appendix H, and analysis of existing transit operations in the Existing Conditions Analysis.
CFR	450.324(f)(4) – System Performance report missing entirely from the plan	FHWA/FTA	This LRTP includes a detailed representation of existing facilities and transit service within Chapter 2 and the Existing Conditions Appendix C. The plan also includes proposed facilities through representation of the recommended project list across maps and list, and graphical representation of the future transit service network resulting from the Mountain Line Transit Strategic Plan (2025).

CFR	450.324(f)(4)(i) – Need to include estimated progress toward achievement of performance targets, this is missing entirely from the plan	FHWA/FTA	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
CFR	450.324(f)(8) – Transit elements are missing from the plan.	FHWA/FTA	The Tranist Service Plan has been added as appendix, and refrences to it are inluded throughout the plan document. Concerns regarding federal requirements have been addressed through the completion of a Federal Requirements Checklist, which has been incorporated into the Appendix.
CFR	450.324(f)(10) – Environmental mitigation activities are missing from the plan. Consultation with land management agencies, did this occur?	FHWA/FTA	The required cordination with local agencies responsible for land use management is now discussed in Appendix G. Concerns regarding federal requirements have been addressed through the completion of a Federal Requirements Checklist, which has been incorporated into the Appendix.
CFR	450.324(f)(11) – The entirety of the recommended project list/Near Term improvements needs to be fiscally constrained, not just the funding allocations the MPO receives. The plan is missing fiscal constraint on the categories the MPO is referring to as 'MDT Allocated Capital Projects, Maintenance and Preservation, Transit Service and Capital Projects, and Programs' oEligible funding sources need to be identified for the near term recommended project lists oFinancial Plan doesn't include transit funding available, just projected need, needs to include to comply with fiscal constraint.	FHWA/FTA	The plan has been revised to inlcude MDT Projects, Maintenance, and Transit Service and Capital Projects. Eligible funding sources have been identified for the near term recommended project lists.
CFR	450.324(g) – Plan is missing the required analysis with local agencies responsible for land use management, natural resources, environmental protection, conservation, and historical preservation.	FHWA/FTA	The required analysis with local agencies responsible for land use management, natural resources, environmental protection, conservation, and historical preservation is now inlcuded in Appendix G. Concerns regarding federal requirements have been addressed through the completion of a Federal Requirements Checklist, which has been incorporated into the Appendix.
CFR	While not required, recommend adding a federal requirement checklist in the appendix to simplify how federal requirements are being addressed, something similar to Great Falls MPO or others.	FHWA/FTA	Concerns regarding federal requirements have been addressed through the completion of a Federal Requirements Checklist, which has been incorporated into the Appendix.
General	There is a minimal amount of information dedicated to certain MDT roles and responsibilities– especially in the areas of federal funding and/or performance.	MDT	A number of changes have been made to the document and appendix specifically to address MDT's concerns and comments. We believe these revisions bring the LRTP into alignment with MDT's priorities and expectations.
General	Regarding federal funding sources, the main body of the documents seem wholly inadequate in describing funding sources and summarizing available amounts – with little linkage to other documents.	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
General	The linkage between federal funding sources and MDT programs/projects doesn't appear to be established in the documents.	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
General	The linkage between MDT programs/projects and performance objectives is nebulous.	MDT	A number of changes have been made to the document and appendix specifically to address MDT's concerns and comments. We believe these revisions bring the LRTP into alignment with MDT's priorities and expectations.
General	The linkage between local performance measures/goals and higher level (federal, state, etc.) performance measures/goals is unclear. At times, objectives appear to be contradictory.	MDT	Comment addressed through revision and expansion of the Performance Measures content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
General	The FHWA performance targets that are listed in the Appendix appear to be dated (i.e. incorrect).	MDT	The FHWA performance targets that are listed in the Appendix were corrected.
General	There is a fair amount of inconsistency in the way federal funding / MDT programs are represented – especially when compared to the Missoula TIP document. Much information is omitted and/or inconsistent with other data sources.	MDT	Comment addressed through revision and expansion of the Financial Constraint content in both the main document and appendix. See the description of major changes at the top of the table for additional context.
General	The plan is inequitable with its lack of emphasis on the majority (72% per Page 12) of transportation users (people in cars) who want to be able to get around town more efficiently.	MDT	The LRTP includes a wide range of projects intended to meet the needs of travelers of all modes. A significant portion of near-term projects specifically address the safety and operations of vehicle travel. At the same time, projects that improve the bicycle and pedestrian network are intended to mitigate congestion for drivers by encouraging mode shift, while also improving safety and reducing conflicts for all users. The LRTP was developed with the guidance of both a technical and policy committee that includes representation from MDT, and these concerns were not raised. Additionally, the plan was shaped by extensive public engagement, during which community members repeatedly affirmed their support for the included projects and their alignment with Missoulian's needs. Without additional detail or context, this comment from MDT appears inconsistent with the feedback the MPO has received over the extended LRTP planning process.
General	This is pretty subjective, but…for what it's worth: the graphic decorations used in the plan don't look like Missoula's mountains, they look like the Rocky Mountains. Can we make them more green, and add more trees and parks in the picture? (Worth a shot 😉)	CPDI	While we are unable to change the graphics at this time, we will take this into consideration when we begin work on the next LRTP.
General	Missoula writes about using MOVES2014b for the budget analysis due to a grace period before use of MOVES3 is required for conformity purposes. However, the current MOVES release is MOVES5. MOVES3 was released in 2021 and the grace period for that model version ended in early 2023. The MPO shouldn't be using MOVES2014b, or probably even MOVES3 at this point.	EPA	The document and appendix have been updated to consistently reference MOVES.
General	Regardless, Missoula is under limited maintenance plans for both CO and PM. The MPO identifies this in the Appendix, but only (correctly) states for PM10 that having an LMP essentially means that emissions are essentially unconstrained and that there is no budget for a conformity test. I think the MPO has said something similar in the past, and I'm not sure why they correctly state that they don't need to run a regional emissions analysis for PM10, but still do for CO. In light of point 2, point 1 is kind of moot.	EPA	The document and appendix have been updated to consistently reference MOVES.
General	General comments-there is a lot of recycling content from previous plans, especially in the appendices, without updating to reflect current and/or changing conditions. The appendix on Existing and Project conditions is just a table of existing plans, the Conformity appendix doesn't appear to have been updated, the travel demand appendix is blank (just a placeholder), as examples.	FHWA/FTA	The appendix was updated to include missing information, and references were revised accordingly throughout the document. See the description of major changes at the top of the table for additional context.

General	I support our City's efforts to improve air quality, reduce congestion, and provide options for safe, multi-modal transportation. However, there are some critical gaps in our bike-ped infrastructure that are not addressed in the plan. First, there is a complete street planned for Rattlesnake Dr but not for Duncan and Greenough. These two streets are quite similar, in my estimation, except that Rattlesnake Dr already has a bike lane and Duncan does not (Greenough bike lanes are interrupted and frequently used by pedestrians because there is no other safe option). Second, near-term projects would install greenways on Wylie Ave and Alvina Drive. These are critical bike/ped throughways, however, they are also dead-end, short residential streets. How much traffic calming is really required on such a street? These two projects will do nothing to address the most glaring issues nearby; i.e., no bike lanes on Lolo St and no safe pedestrian corridor from Alvina anywhere north.	Public	The Complete Streets project planned for Rattlesnake Drive is specifically intended to address gaps in the active transportation network and improve safety in areas with a history of crashes. Wylie Avenue and Alvina Drive were included because they are part of the greenway network identified in the adopted Bicycle Facilities Master Plan. These projects received higher prioritization due to their relatively low cost and the limited scope of work required to implement them.
General	I understand that the plan isn't finished yet- the public review closed a month or so ago- but there's no mention anywhere of MDT's Highway 93 plan. That's a major corridor in the region and I would think that it would warrant a mention?	Missoula County PDS	This project is referenced in the MDT Maintenance & Safety Projects section of the plan and following the completion of that study its findings can be more fully ingenerated into the LRTP.
General	I don't see much if any discussion of the impact of vehicle trips originating from outside of the MPO, from Ravalli or Lake County. As a regional hub, Missoula has a huge (and growing!) number of trips go through the metropolitan area that originate from outside it. Much of this growth is occurring in areas outside of our respective jurisdictions. There's a huge amount of growth forecast for the Bitterroot valley, for example, and it will have transportation impacts on the MPO. I don't see that issue described or quantified anywhere nor how will the plan better address it (apart from the regional vanpool). I think that's something that the regional transportation plan should address.	Missoula County PDS	The Travel Demand Model used for the LRTP considers three sub-regions: (1) within the MPO, (2) Missoula County outside the MPO, and (3) Ravalli County. For Ravalli County, countywide growth data from 2018 to 2022 was incorporated using American Community Survey (ACS) estimates. Additionally, the Existing Conditions report includes analysis of Vehicle Miles Traveled (VMT) and Average Annual Daily Traffic (AADT), which help quantify travel demand and traffic flows affecting the MPO. While the LRTP focuses within the MPO boundary, some of these regional travel impacts are further addressed through targeted corridor planning efforts, such as the Reserve Street Safety Action Plan.
General	I'd like to see some additional metrics on the recommended projects, Are there not any projects in places like Lolo or the Wye? How many end up in the City versus the County? How many end up in the equity areas? I'm not trying to be a brat here; I genuinely think it's a good idea to communicate where these end up and if they're meeting goals that have been stated earlier in the document.	Missoula County PDS	While the project list does not currently categorize projects by location, the majority of projects are concentrated within the urbanized area where funding is available for the MPO to program.
General	We would have liked to see a more and a higher prioritization/discussion regarding the importance and role of regional, community, and NHD connecting trails.	Missoula Parks & Recreation	We acknowledge the importance of regional and community trails. Commuter trails remain a priority in our project list and funding. Following the adoption of the PROST, we can continue to integrate trail projects and update their descriptions and proejct extents.
Project List	Project C221 Eliminate illustrative Sawmill Gulch "Illustrative" proposal C221 from LRTP lists entirely. Is not an "Active Transportation" item. It would be a roadway project and hence a reward for a small number of rural residents' decision to sprawl into the wildland urban interface. The public should not be responsible for upgrading and / or maintaining what is essentially their driveway. It would also be contrary to good conservation practices.	Public	Project C221 remains listed as "illustrative" based on LRTP scoring, which reflects many of the concerns raised in this comment. With the upcoming adoption of the PROST Plan, the project list will be reviewed prior to the next LRTP update to determine if removal of this project is appropriate.

Appendix I

Federal Requirement Checklist

Federal Requirements	Long-Range Plan Requirement Details
General Plan Requirements:	
(a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In formulating the transportation plan, the MPO shall consider factors described in § 450.306 as the factors relate to a minimum 20-year forecast period. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.	The time horizon for this Long-Range Plan is 25 years meeting the 20 year planning horizon requirement.
(b) The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.	The long-range plan includes a fiscally constrained project list with near-term (5 years) medium-term (15 years) and long-term (25 years) time horizons. The project list includes a diverse representation of projects as well as programs and policies prioritized by near, medium and long-term that are oriented to fulfill both federal Performance Management and Environmental Mitigation (detailed in Appendix g) and the five adopted LRTP goals (detailed in Chapter 4). This is detailed in the project list chapter, project list (detailed in Chapter 6 and Appendix B) and Programs and Policies (detailed in Chapter 7), with further support in Chapter 9 - Achieving Success.
(c) The MPO shall review and update the transportation plan at least every 4 years in air quality nonattainment and maintenance areas and at least every 5 years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The MPO shall approve the transportation plan (and any revisions) and submit it for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.	This LRTP update is planned for adoption in July 2025, with the conformity period ending July 2025.
(d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).	The MPO area is currently under a limited maintenance plan available here for review: https://www.federalregister.gov/documents/2019/03/05/2019-03867/approval-and-promulgation-of-air-quality-implementation-plans-state-of-montana-missoula-pm10
(e) The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.	This LRTP update involved development of a Transportation Demand Model that implemented data with the latest data available using 2022 as the base year for travel, employment and housing data. Further the model introduced data from the Our Missoula Land use Plan (2024) and Mountain Line Transit Service Plans (2025) to represent future land use growth strategies and transit service. This is detailed in the Appendix F Transportation Demand Model Documentation and additional model results are contained within Appendix C - Existing and Projected Conditions Report.
(f) The metropolitan transportation plan shall, at a minimum, include: (1) The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;	The plan describes current and future transportation needs in Chapter 2, as well as additional demand detailed in Appendix C - Existing Conditions, and Appendix F -Transportation Demand Model Document.

(f) The metropolitan transportation plan shall, at a minimum, include: (2) Existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities (e.g., pedestrian walkways and bicycle facilities), and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan.	This LRTP includes a detailed representation of existing facilities and transit service within Chapter 2 and the Existing Conditions Appendix C. The plan also includes proposed facilities through representation of the recommended project list across maps and list, and graphical representation of the future transit service network resulting from the Mountain Line Transit Strategic Plan (2025).
Performance Management and Environmental Mitigation Requirements:	
(f) The metropolitan transportation plan shall, at a minimum, include: (3) A description of the Performance Management and Environmental Mitigation and performance targets used in assessing the performance of the transportation system in accordance with § 450.306(d)	All federal Performance Management and Environmental Mitigation are introduced with narrative in Chapter 9 Achieving Success and updated with additional detail in Appendix G.
(i) Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and	Progress in relation to the federal Performance Management and Environmental Mitigation is updated with additional data and details in Appendix G.
(ii) For metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.	Progress in relation to the adopted strategic growth scenario from the 2020 LRTP update through a graphic in Chapter 9 Achieving Success. This graphic represents the number of projects completed and their relationship to the strategic growth scenario's intended geography. Additional detail included in Appendix G.
(d) ***Performance-based approach.***	
(1) The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decisionmaking to support the national goals described in 23 U.S.C. 150(b) and the general purposes described in 49 U.S.C. 5301(c).	The approach for supporting for federal Performance Management and Environmental Mitigation, adopted state targets for federal Performance Management and Environmental Mitigation to support and monitor progress towards national and the LRTP goals. This is detailed in both the Chapter (Achieving Success and Performance Management and Environmental Mitigation Appendix G.
(2) ***Establishment of performance targets by metropolitan planning organizations.***	
(i) Each metropolitan planning organization shall establish performance targets that address the Performance Management and Environmental Mitigation or standards established under 23 CFR part 490 (where applicable), 49 U.S.C. 5326(c), and 49 U.S.C. 5329(d) to use in tracking progress toward attainment of critical outcomes for the region of the metropolitan planning organization.	The Missoula MPO has adopted state targets for the federal Performance Management and Environmental Mitigation and tracks progress towards these targets since the previous 2020 LRTP. This is detailed in both the Chapter 9 Achieving Success and Performance Management and Environmental Mitigation Appendix G.
(ii) The selection of targets that address Performance Management and Environmental Mitigation described in 23 U.S.C. 150(c) shall be in accordance with the appropriate target setting framework established at 23 CFR part 490, and shall be coordinated with the relevant State(s) to ensure consistency, to the maximum extent practicable.	The Missoula MPO has adopted state targets for the federal Performance Management and Environmental Mitigation and tracks progress towards these through use of state reported targets as a proxy for planning area scale progress. This is detailed in Performance Management and Environmental Mitigation Appendix G.
(iii) The selection of performance targets that address Performance Management and Environmental Mitigation described in 49 U.S.C. 5326(c) and 49 U.S.C. 5329(d) shall be coordinated, to the maximum extent practicable, with public transportation providers to ensure consistency with the performance targets that public transportation providers establish under 49 U.S.C. 5326(c) and 49 U.S.C. 5329(d).	The Missoula MPO integrates transit Performance Management and Environmental Mitigation specifically MUTD's Transit Asset Performance Targets and Public Transportation Agency Safety Plan into the LRTP through inclusion in Performance Management and Environmental Mitigation Appendix G, and analysis of existing transit operations in the Existing and Projected Conditions Appendix C.

(3) Each MPO shall establish the performance targets under paragraph (d)(2) of this section not later than 180 days after the date on which the relevant State or provider of public transportation establishes the performance targets.	The Missoula MPO has adopted state targets for the federal Performance Management and Environmental Mitigation and tracks progress towards these through existing conditions analysis.
(4) An MPO shall integrate in the metropolitan transportation planning process, directly or by reference, the goals, objectives, Performance Management and Environmental Mitigation, and targets described in other State transportation plans and transportation processes, as well as any plans developed under 49 U.S.C. chapter 53 by providers of public transportation, required as part of a performance-based program including:	All relevant state plans, processes and associated performance targets are referenced in the Performance Management and Environmental Mitigation Appendix G.
(i) The State asset management plan for the NHS, as defined in 23 U.S.C. 119(e) and the Transit Asset Management Plan, as discussed in 49 U.S.C. 5326;	The Performance Management and Environmental Mitigation Appendix G details the asset management targets and how the regions system meeting and does not meeting the adopted MDT target.
(ii) Applicable portions of the HSIP, including the SHSP, as specified in 23 U.S.C. 148;	The Missoula MPO has adopted state targets for the federal safety Performance Management and Environmental Mitigation that are detailed in Performance Management and Environmental Mitigation Appendix G.
(iii) The Public Transportation Agency Safety Plan in 49 U.S.C. 5329(d);	The Performance Management and Environmental Mitigation Appendix G Item details MUTD's Public Transportation Agency Safety Plan.
(iv) Other safety and security planning and review processes, plans, and programs, as appropriate;	
(v) The Congestion Mitigation and Air Quality Improvement Program performance plan in 23 U.S.C. 149(l), as applicable;	The LRTP addresses CMAQ Performance Management and Environmental Mitigation as detailed in Performance Management and Environmental Mitigation Appendix G and with supporting information Chapter 9 Achieving Success.
(vi) Appropriate (metropolitan) portions of the State Freight Plan (MAP-21 section 1118);	The Missoula MPO has adopted state targets for the federal Performance Management and Environmental Mitigation for Truck Travel Time Reliability and tracked progress towards these through use of state reporting to understand progress at the scale of the planning area. This is detailed Performance Management and Environmental Mitigation Appendix G.
(vii) The congestion management process, as defined in 23 CFR 450.322, if applicable; and	Congestion Management approach is detailed in Performance Management and Environmental Mitigation Appendix G and Achieving Success Chapter 9.
(viii) Other State transportation plans and transportation processes required as part of a performance-based program.	All supporting state transportation plans involved in production of state performance targets and performance are detailed in Performance Management and Environmental Mitigation Appendix G.
(e) The failure to consider any factor specified in paragraph (b) or (d) of this section shall not be reviewable by any court under title 23 U.S.C., 49 U.S.C. Chapter 53, subchapter II of title 5, U.S.C. Chapter 5, or title 5 U.S.C. Chapter 7 in any matter affecting a metropolitan transportation plan, TIP, a project or strategy, or the certification of a metropolitan transportation planning process.	
(f) An MPO shall carry out the metropolitan transportation planning process in coordination with the statewide transportation planning process required by 23 U.S.C. 135 and 49 U.S.C. 5304.	The Missoula MPO worked with the Montana Department of Transportation to ensure coordination and consistency of this LRTP with the state-wide transportation planning process.

(g) The metropolitan transportation planning process shall (to the maximum extent practicable) be consistent with the development of applicable regional intelligent transportation systems (ITS) architectures, as defined in 23 CFR part 940.	The LRTP projects list do not present any known conflicts with developing ITS systems or forthcoming projects within the region. The MPO has identified ITS and associated signal timing or upgrades as a key priority for future traffic management in the region (Detailed in Chapter 7).
(h) Preparation of the coordinated public transit-human services transportation plan, as required by 49 U.S.C. 5310, should be coordinated and consistent with the metropolitan transportation planning process.	The MPO and the Missoula Urban Transportation District (MUTD) conducted development of the LRTP and Transit Strategic Plan concurrently in a collaborative planning process to ensure consistency and coordination of the LRTP and TSP.
(i) In an urbanized area not designated as a TMA that is an air quality attainment area, the MPO(s) may propose and submit to the FHWA and the FTA for approval a procedure for developing an abbreviated metropolitan transportation plan and TIP. In developing proposed simplified planning procedures, consideration shall be given to whether the abbreviated metropolitan transportation plan and TIP will achieve the purposes of 23 U.S.C. 134, 49 U.S.C. 5303, and this part, taking into account the complexity of the transportation problems in the area. The MPO shall develop simplified procedures in cooperation with the State(s) and public transportation operator(s).	The MPO is not proposing to submit an abbreviated transportation plan or TIP.
(5) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;	The approach for supporting for federal Performance Management and Environmental Mitigation, adopted state targets for congestion management and system performance, safety and mobility or people and goods are details through the Chapter 9 Achieving Success and Performance Management and Environmental Mitigation Appendix G.
(6) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide.	Not applicable
(7) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system.	Details on the MPO's process for evaluating and setting priorities for the preservation of existing and investment in future infrastructure are included in Potential Futures: Project Evaluation and Prioritization Chapter 5 and supporting information in Project Evaluation Appendix D. Detailed information on proposed infrastructure and programmatic investments is included in Recommended Projects Chapter 6 and Recommended Programs and Policies Chapter 7 with supporting details in Project List Appendix B.
(8) Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a), as appropriate;	Details on transit improvements and role in the LRTP and included throughout the plan, including A Strong Foundation Chapter 2 as well as Appendix C Existing and Projected Conditions.

(9) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA's transportation conformity regulations (40 CFR part 93, subpart A). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates;	Details on existing transportation facilities is A Strong Foundation Chapter 2 as well as Appendix C Existing and Projected Conditions. Proposed transportation facilities are detailed in Recommended Projects Chapter 6 and Project List Appendix B.
(10) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation;	The MPO conducted required agency coordination as described in Your Input Chapter 3, and in Public Engagement Summary Appendix A. Additional environmental mitigation efforts are detailed in Performance Management and Environmental Mitigation Appendix G.
Financial Requirements:	
(11) A financial plan that demonstrates how the adopted transportation plan can be implemented.	The LRTP financial plan is detailed in the Project Revenue Appendix E which presents the projected revenue of the 25 year time horizon of the plan. Eligible funding sources for each project are included in Project List Appendix B, along with specific funding amounts for near term projects.
(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).	Projected Revenue Appendix E includes a detailed description of funding sources and projected revenues that will be available for transportation system operations and maintenance and public transportation. The recommended project list, along with transit operations/capital and programmatic investments is inclusive of projected needs across the federal aid highway system and for public transit.
(ii) For the purpose of developing the metropolitan transportation plan, the MPO(s), public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.	Revenue projects were developed in coordination and review with MDT partners. The project revenue build off of adopted Transportation Improvement Programs, both current and past to reflect funding averages for the federal and state funding sources. Local funding sources are representative of local budgets accounting for City and County, Missoula Redevelopment Agency funding sources and tax revenue projects. The LRTP financial plan is detailed in the Project Revenue Appendix E.
(iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.	No new funding sources were included in the required financial plan for recommended projects, however the LRTP does identify potential future sources and includes a list of projects that will require additional federal discretionary grants or other funding. This is detailed in Funding the Plan Chapter 8 and Projected Review Appendix E.

(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).	The estimated project costs include inflation to a "year of construction" using a state-approved rate of 3% per year. All funding sources were considered in developing the recommended project list, as detailed in Funding the Plan Chapter 8 and Projected Revenue Appendix E.
(v) For the outer years of the metropolitan transportation plan (*i.e.,* beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.	Cost estimates for medium and long term projects use a mid-point year of construction to approximate the impact of cost inflation in outer years of the plan.
(vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.	Missoula is currently in attainment for all air quality measures as detailed in Performance Management and Environmental Mitigation Appendix G.
(vii) For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.	Additional illustrative projects are included in Project List Appendix B.
(viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (*i.e.,* by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.	
Other Requirements:	
(12) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).	Recommended Projects Chapter 6 includes many projects that will support pedestrian and bicycle transportation in the region, including Complete Streets, Safety, and Active Transportation investments.
(g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:	This was met through an Interagency Coordination meeting as well as continual engagement with MPO boards such as the Transportation Technical Advisory Committee and Special Transportation Advisory Committee as detailed in Public Engagement Summary Appendix A.
(1) Comparison of transportation plans with State conservation plans or maps, if available; or	This was met through an Interagency Coordination meeting as well as continual engagement with MPO boards such as the Transportation Technical Advisory Committee and Special Transportation Advisory Committee as detailed in Public Engagement Summary Appendix A.
(2) Comparison of transportation plans to inventories of natural or historic resources, if available.	This was met through an Interagency Coordination meeting as well as continual engagement with MPO boards such as the Transportation Technical Advisory Committee and Special Transportation Advisory Committee as detailed in Public Engagement Summary Appendix A.

(h) The metropolitan transportation plan should integrate the priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the HSIP, including the SHSP required under 23 U.S.C. 148, the Public Transportation Agency Safety Plan required under 49 U.S.C. 5329(d), or an Interim Agency Safety Plan in accordance with 49 CFR part 659, as in effect until completion of the Public Transportation Agency Safety Plan, and may incorporate or reference applicable emergency relief and disaster preparedness plans and strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and non-motorized users.	The LRTP goals and recommended projects are in alignment with the HSIP and SHSP, and emergency/disaster preparedness were considered when evaluating needs and recommended investments in infrastructure. This is detailed in the 2025 Missoula LRTP Update Goals and Potential Futures: Project Evaluation and Prioritization Chapter 5 with supporting detailed in Performance Management and Environmental Mitigation Appendix G.
(i) An MPO may, while fitting the needs and complexity of its community, voluntarily elect to develop multiple scenarios for consideration as part of the development of the metropolitan transportation plan.	This LRTP update did not include any additional scenario planning, however it was updated to including a recommended scenario developed in the 2020 LRTP Update. Progress on this recommended scenarios is detailed in Achieving Success Chapter 9.
(1) An MPO that chooses to develop multiple scenarios under this paragraph (i) is encouraged to consider:	Not applicable
(i) Potential regional investment strategies for the planning horizon;	Not applicable
(ii) Assumed distribution of population and employment;	Not applicable
(iii) A scenario that, to the maximum extent practicable, maintains baseline conditions for the performance areas identified in § 450.306(d) and measures established under 23 CFR part 490;	Not applicable
(iv) A scenario that improves the baseline conditions for as many of the Performance Management and Environmental Mitigation identified in § 450.306(d) as possible;	Not applicable
(v) Revenue constrained scenarios based on the total revenues expected to be available over the forecast period of the plan; and	Not applicable
(vi) Estimated costs and potential revenues available to support each scenario.	Not applicable
(2) In addition to the performance areas identified in 23 U.S.C. 150(c), 49 U.S.C. 5326(c), and 5329(d), and the measures established under 23 CFR part 490, MPOs may evaluate scenarios developed under this paragraph using locally developed measures.	Not applicable
(j) The MPO shall provide individuals, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool program, vanpool program, transit benefit program, parking cashout program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a).	This was met through an Interagency Coordination meeting as well as continual engagement with MPO boards such as the Transportation Technical Advisory Committee and Special Transportation Advisory Committee as detailed in Public Engagement Summary Appendix A.

(k) The MPO shall publish or otherwise make readily available the metropolitan transportation plan for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.	This was met through a 45 day public review period as required by the MPO Public Participation Plan: https://www.ci.missoula.mt.us/DocumentCenter/View/27526/PPP_Update_2014?bidId=
(l) A State or MPO is not required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(11) of this section.	Not applicable
(m) In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93, subpart A). A 12-month conformity lapse grace period will be implemented when an area misses an applicable deadline, in accordance with the Clean Air Act and the transportation conformity regulations (40 CFR part 93, subpart A). At the end of this 12-month grace period, the existing conformity determination will lapse. During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93, subpart A. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.	The MPO area is currently under a limited maintenance plan available here for review: https://www.federalregister.gov/documents/2019/03/05/2019-03867/approval-and-promulgation-of-air-quality-implementation-plans-state-of-montana-missoula-pm10. Additional analysis of required air quality conformity is detailed in Performance Management and Environmental Mitigation Appendix G.

Appendix J

Transit Service Plan

Mountain Line

Transit Service Plan

Final Report

January 2025

NELSON NYGAARD

Table of Contents

Appendices

Appendix A: Existing Conditions
Appendix B: Outreach Summary
Appendix C: Phase II Public Engagement Survey Results

Table of Figures

Page

1 EXECUTIVE SUMMARY

INTRODUCTION

The Missoula Urban Transportation District (MUTD), more familiarly known as Mountain Line, has launched the 2024 Transit Service Plan with the goal of developing comprehensive recommendations for Missoula's public transit system to better serve riders, residents, and the broader community. This plan will cover numerous facets of the agency, including service and operations, capital improvements, funding, climate and sustainability goals, equity objectives, and policy issues.

Building on the successes of the 2018 Transit Service Plan and responding to evolving local, national, and global contexts, this new effort will determine MUTD's course for the coming years.

BACKGROUND

Missoulians have a history of supporting transit. Community support enabled Mountain Line to provide additional services and be recognized for its success as the "System of the Year" by the American Public Transportation Association in 2021. Three initiatives have shaped Mountain Line's recent past.

2012 Long Range Transit Plan

This plan provided a blueprint for Missoula expanding its service. Primary service recommendations included higher frequency on key routes (Routes 1 and 2 were branded as "BOLT!") and later span of service. Voters approved funding for service expansion, and improvements starting in 2013.

2015 Zero-Fare Demonstration Project

As part of the Long-Range Transit Plan, the Zero-Fare Demonstration Project explored the possibility of free public transit. A group of public and private entities partnered to fund and make transit accessible to everyone for three years. The demonstration project led to a 70% ridership increase in two years, and that success led to extended partner funding.

2018 Service Plan

This plan built on the previous two efforts to provide a growth plan for improving transit in Missoula. Key recommendations were to improve frequency and span and provide Sunday service. Voters approved funding several key recommendations, including making zero-fare service permanent, running service later in the evening on key routes, and implementing Sunday service for the first time ever.

BENEFITS OF TRANSIT IN MISSOULA

Mountain Line provides safe, sustainable, and innovative transportation solutions. By more than doubling ridership in the past 15 years, Mountain Line has played a major role in accommodating new growth, reducing traffic congestion, and mitigating air quality. Mountain Line has also helped Missoula households reduce transportation costs with the system-wide zero-fare service, representing a hedge against skyrocketing local housing costs.

Growth is projected to continue. Mountain Line is an important way to facilitate Missoula's mobility and provide options for thousands of new residents. Transit will also play a crucial role in helping the city achieve affordability, equity, and sustainability goals.

A robust transit system makes Missoula a better place to live and visit by supporting economic growth and increasing access to opportunity.

STUDY OVERVIEW

In 2024, Mountain Line updated its Transit Service Plan. The objectives of the plan include:

- Assess the existing route network performance and design.
- Actively engage the public and community stakeholders throughout the study.
- Develop a detailed plan to guide service improvements.

The nearly year-long study examined existing transit and market conditions. The study also included robust and dynamic community and stakeholder outreach. The outcome of the study is an implementable near-term and long-term plan to optimize and expand public transit in Missoula.

Project Timeline

EXISTING CONDITIONS

The initial phase of the study was a comprehensive analysis of existing conditions. The goal was to summarize the background conditions in which Mountain Line operates.

Service Analysis

The analysis covered existing route design, schedules, and ridership trends. The service analysis revealed the following key findings:

- **Mountain Line provides extensive coverage**, serving most high-density residential areas, as well as most major employment, education, shopping, and medical destinations.
- Mountain Line has the opportunity to **serve emerging areas of high-density developments**, including Sx̌tpqyen.
- **Sunday service implementation has been successful**. Weekend service productivity on Routes 1 and 2 suggests the need for higher weekend frequency.
- **Ridership has rebounded since early 2020** and is growing back toward pre-pandemic levels. However, certain ridership patterns appear to have changed as result of the pandemic's travel disruptions.
- The **strongest ridership corridors have high-frequency (every 15 min) service**. Some of the high ridership corridors in the system include South Johnson Street, South Avenue, Russell Street, and Broadway Street.

Market Analysis

Local demographic and socio-economic characteristics were examined to identify population groups most likely to use transit and how well they are currently served by transit. This exercise revealed a diverse set of rider types, with unique transit needs and preferences.

Families without a car

Employees without a car

Seniors who do not drive

Students

Commuters

Employment density and commute patterns were also analyzed to highlight corridors that can support transit. Existing conditions were summarized in a report that served as the foundation for the developing service, capital, and policy recommendations.

OUTREACH

Community participation was essential to the development of this plan. Outreach activities were conducted at three stages of the project and consisted of virtual and in-person public meetings, stakeholder discussions, a project website, online surveys, and social media. Input was gathered from a diverse group of residents, employees, and students. Phase I outreach focused on receiving comments about existing transit service and opportunities for improvement. Phase II introduced potential changes to the existing route network. Near- and long-term recommendations were presented during Phase III of community meetings.

Community Feedback

Online outreach activities were extremely successful in obtaining community feedback. Online surveys generated 640 responses. In addition, 16 tabling events, seven Neighborhood Partnership Meetings, two virtual open houses, and one in-person open house allowed us to understand transit priorities. The community expressed the following:

- Support for **additional frequency**
- Support for **additional service**, especially to Sx̌ʷtpqyen
- Request for more **weekend service**

Community feedback was instrumental in developing and refining service recommendations.

Stakeholder Engagement

Representatives of several organizations with an interest in transit were invited to participate in virtual group discussions. Participating stakeholders included:

- Diversity Advisory Council of University of Montana
- Midtown Implementation Committee
- Missoula Neighborhood Councils
- Missoula Infrastructure Coalition
- Missoula City Justice Equity Diversity Inclusion Advisory Board
- Specialized Transportation Advisory Committee
- Community Partner Advisory Groups
- Families in Transition (FIT)
- Hellgate Elementary School District
- Missoula County Public Schools
- Willard High School
- Big Sky High School
- Johnson Street Shelter, Food Not Bombs Service
- Missoula Food Bank
- Young People / Refugee Community Conversations
- Missoula Aging Services Advisory Council

RECOMMENDATIONS

The Service plan's recommendations are organized into two phases: near term and long term. The **near-term plan** focuses on reducing route duplication and meeting emerging ridership trends. The near-term network will serve the same areas as it does today and is cost-neutral, meaning recommendations can be implemented without an increase to Mountain Line's operating budget.

The **long-term plan** calls for an approximate 50% increase in 2025 current service levels. The plan would help meet the travel demands of a rapidly growing region by improving service span (the length of service throughout the day), frequency, and travel speeds, and by providing new service in up-and-coming dense employment centers and housing developments. The plan assumes Mountain Line would develop and implement capital projects that expand service capacity while improving bus speed and reliability.

The goals for the recommendations are described below.

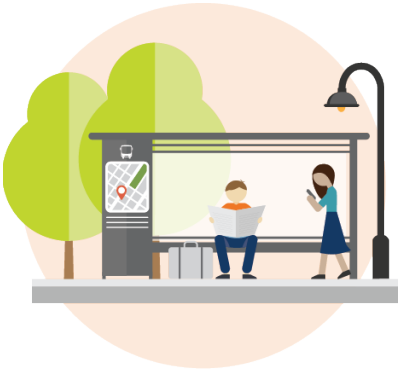
Update and Streamline the Route Network

The recommendations realign bus routes to better serve the needs of existing and potential transit riders by improving access to key destinations and reducing travel times. This includes greater frequency in high-ridership/high-density areas, direct service from Franklin to the Fort to downtown Missoula, and service to Sx̌tpqyen.

Strategically Expand Bus Service

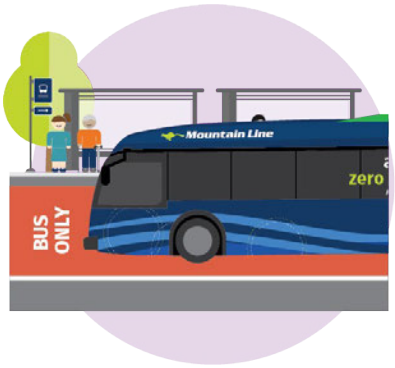
The recommendations extend routes to serve emerging destinations, offer longer hours, and more frequent service on weekdays and weekends. Four new corridors would deliver frequent service, every 15 minutes or better.

Promote Transit-Supportive Land Uses



Missoula is growing. Redeveloping concentrations of population and employment can support additional transit service and reduce car traffic. The plan recommends new fixed-route service to the Sawmill District and Sx̌tpqyen, as well as improved service to the rapidly redeveloping Midtown.

Invest in Capital Projects That Improve Speed and Reliability



The long-term plan targets improvements such as bus lanes, improved stops, transit centers, and transit signal priority, which can make bus travel times more competitive with private vehicles.

- The new **Brooks Street Bus Rapid Transit (BRT) corridor** would deliver fast, frequent, and reliable service between downtown Missoula and Southgate Mall.
- The new Midtown **transit center at Southgate Mall** would foster better connectivity and transfers between routes, including the new BRT service.
- **Completing** the Maintenance, Operations, and Administration Base (MOAB) by 2029 establishes a much-needed storage/maintenance space for operating a larger fleet that could deliver more peak service.

2 INTRODUCTION

INTRODUCING THE ORGANIZATIONS AND PLANS

Who is MUTD?

The Missoula Urban Transportation District (MUTD) operates Mountain Line, the Missoula region's transit network. MUTD was established in June 1976 by voters who authorized the creation of the district. Service operating under the Mountain Line brand began on December 12, 1977. MUTD operates both fixed-route and paratransit services within its service area. Service has evolved over the years, including the introduction of fare-free service, expanding weekend and evening service, transitioning to an electric fleet, and improving frequencies on the highest-ridership routes. Figure 2-1 outlines MUTD's boundaries.

Mountain Line's Mission Statement: "At Mountain Line, our mission is to connect Missoulians to the community through safe, sustainable, and innovative transportation solutions. We are dedicated to expanding access to reliable public transit, which is crucial for supporting a diverse and active community, fostering Missoula's economic vitality, and playing a pivotal role in combating the climate crisis. Our approach includes frequent measurement and improvement of our services, leveraging the latest technologies and industry best practices to ensure excellence in every journey."

Mountain Line's Vision Statement: "We envision a future where robust and accessible public transit is not just an option, but the preferred choice for transportation in Missoula. Our path to achieving this vision involves leading the industry with groundbreaking initiatives, fostering a workplace culture of engagement and wellness, and forming proactive partnerships with government and community stakeholders. We commit to a future-focused approach, anticipating and addressing Missoula's evolving transportation needs while upholding our promise of service excellence."

Missoula's Transit Service Plan

One of MUTD's planning efforts for 2024 was to update its Transit Service Plan. The last Service plan, adopted in 2018 and updated in 2019, laid out a set of phased short-term network changes along with a longer-term network vision. Three out of the four phases of the short-term network have been implemented. In the meantime, the Covid pandemic and continued development in the community created new travel patterns. Further, there are planned transit projects, like BRT on Brooks Street, that may require adjustments to existing service alignments.

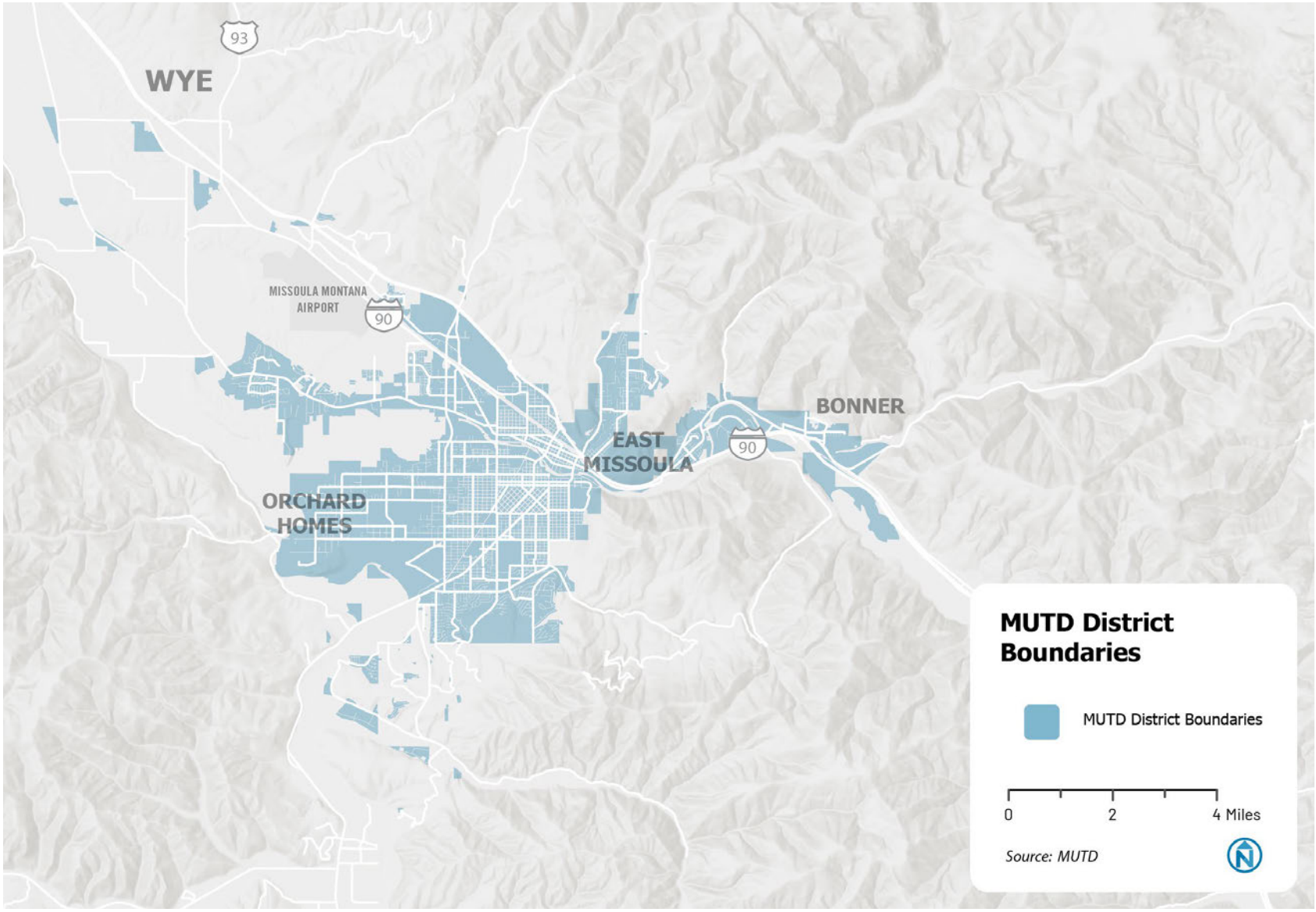
An update to the Service plan would ensure that transit serves these changed travel patterns and destinations in an efficient manner.

MUTD's and MPO's Joint Effort

In January 2024, MUTD and the Missoula Metropolitan Planning Organization (MPO) partnered in engaging the services of Nelson\Nygaard to perform a combined update of MUTD's Transit Service Plan and the MPO's Long-Range Transportation Plan (LRTP). The timing of updating the Transit Service Plan and the LRTP, along with many shared goals, provided a unique opportunity for MUTD and the MPO to collectively identify elements for improving mobility in the region.

The LRTP identified a new traffic signal at the Cregg Lane/South Orange Street intersection that supports the Transit Service Plan's goals for improving accessibility to transit and makes routing changes identified for Route 8 in this Service plan possible. Additional information on the MPO and the LRTP is included in subsequent pages.

Figure 2-1 MUTD District Boundary



Source: MUTD

Who is the Missoula MPO?

The MPO works to plan a safe transportation network for the Missoula area through developing a comprehensive, cooperative, and connected transportation system. The organization was formed more than 40 years ago, after the region surpassed more than 50,000 residents following the 1980 census. Today, the MPO is responsible for long-range planning and programming of federal transportation funds within the Missoula area. Figure 2-2 shows the MPO's boundaries.

MPO Mission Statement: To plan and program a safe and efficient transportation system for the Missoula area that increases access and mobility through multimodal options.

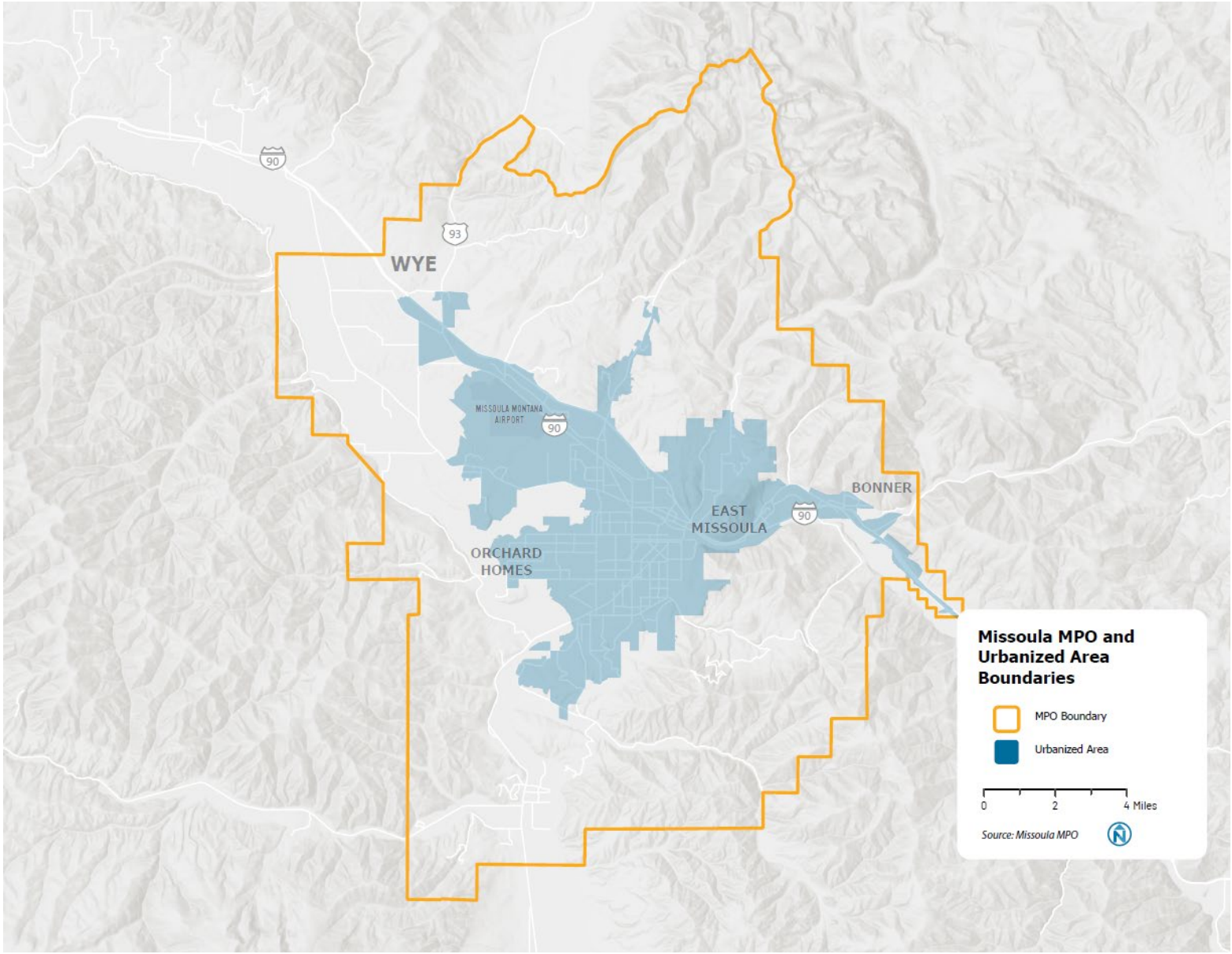
MPO Vision Statement: To provide regional transportation planning services focused on creating a safe, efficient, and sustainable transportation network that will improve the quality of life within Missoula's community.

Missoula's Long-Range Transportation Plan

One of the MPO's primary planning projects in 2024 was to update the LRTP, titled Missoula Connect, a document that reviews all modes of transportation and identifies future priorities for projects and funding.

This action plan will steer the Missoula community toward a healthier, safer, and more sustainable future while preserving and expanding mobility for all residents. Relying on previous planning work and extensive community outreach, Missoula Connect integrates existing plans and projects to create a sustainable transportation future that improves mobility and access across all modes for all Missoula area residents, workers, and visitors. A strong transportation plan is critical to the success of Missoula's growth policy, and Missoula Connect will knit together land use and transportation goals. The Missoula region is on the move, and the MPO needs to not only keep pace but stay ahead.

Figure 2-2 MPO Boundaries



Source: Missoula MPO

PROJECT GOALS

As part of the joint planning process, MUTD and the MPO established shared goals. The Transit Service Plan focuses on transit-specific outcomes in relation to the broader transportation goals established in the LRTP. The goals are as follows:

1. Improve safety and promote health to enhance quality of life
   - Improve transit linkages to active transportation
   - Connect transit to recreational facilities
   - Enhance transit access to lower-income neighborhoods
   - Continue to offer safe and reliable service
2. Maintain assets and invest strategically
   - Continue to improve transit facilities and amenities
   - Target investments that are cost-effective and impactful
   - Provide transit connections to jobs, businesses, and recreation to support the economy
3. Expand mobility choices
   - Provide high-frequency and high-quality transit services
   - Improve access to community resources and services
   - Optimize services to grow transit ridership
   - Pilot new service delivery methods to improve MUTD's service offerings to the community
   - Increase ridership of MUTD and encourage transit as a viable means of local transportation
4. Connect and strengthen communities to create a more equitable region
   - Orient service tailored to land use and transportation infrastructure
   - Reduce household transportation costs
   - Connect people to opportunities
5. Advance sustainability and resilience
   - Continue to shift transit fleet to battery electric buses
   - Reduce emissions by trip-sharing
   - Reduce point-source pollution associated with petroleum
   - Support investment in clean infrastructure and green space

PURPOSE OF THIS DOCUMENT

This document is the final report for updating the Transit Service Plan. It includes information on the existing conditions assessment that was performed, the public outreach that was conducted, and the vision (near- and long-term) for transit in Missoula. Implementation and best practices are also included.

3 EXISTING CONDITIONS

The existing conditions chapter synthesizes key aspects of Missoula's regional planning context, including population and employment patterns, and evaluates the existing transportation network.

- **Missoula Context** examines planning and policy documents to understand previous planning work done in Missoula. It also includes key demographic and employment information.
- **Transit Conditions** document the transit system in Missoula (fixed-route transit and paratransit services), including ridership trends and productivity.

MISSOULA CONTEXT

This section sets the stage for the development of the Transit Service Plan in Missoula. The first half of this section summarizes existing planning and policy documents done in Missoula, including two community surveys administered in the last year. The second half reviews key demographic and employment information, including a discussion of transportation equity and transit propensity for the region. Unless otherwise noted, any demographic and employment data are sourced from the U.S. Census Bureau and is reported at the urbanized area for Missoula.

Overview of Completed and Ongoing Plans

Reviewing current planning and policy documents, and understanding what has been successful in the past, helps set the framework to build on previous momentum. This review summarizes improvements (both funded and unfunded) that have been identified and can be considered as part of the Transit Service Plan. Nine documents, summarized in Appendix A, were reviewed as follows:

- Downtown Safety and Mobility (SAM) Project (2024)
- On-Demand Transit Study (2024)
- Wye Infrastructure Needs Assessment (2023)
- Missoula Annexation Policy (2023)

- Midtown Missoula Master Plan (2023)
- Brooks Street BRT/TOD Planning Study (2021)
- Highway 200 Corridor Plan (2021)
- Reserve Street Community Input Project (2021)
- Our Missoula 2045 Land Use Plan (2024)

Mountain Line 2023 Passenger Survey

Between May 8 and July 5, 2023, MUTD conducted a survey of Mountain Line passengers to gather valuable insights into customer sentiment and identify potential service improvements. This effort was carried out by the University of Montana's Bureau of Business and Economic Research (BBER). Surveyors rode all 12 MUTD bus routes to connect directly with passengers. The BBER collected 456 responses that shed light on how riders feel about MUTD and their experiences. Key findings are as follows.

Passengers Appreciate MUTD Services

Mountain Line riders expressed a high level of satisfaction with the service. A remarkable 76% of passengers said they were very likely to recommend MUTD to others, while an additional 15% reported they would be somewhat likely to do so. Over the past two years, 44% of passengers reported an improved opinion of MUTD, while 51% felt their opinion had stayed the same. Only 5% said their opinion had worsened.

Why Passengers Choose MUTD

Riders highlighted several compelling reasons for using MUTD instead of other transportation options:

- **Environmental benefits**: 83% of respondents cited MUTD's eco-friendly nature as a key factor.
- **Affordability**: 73% said MUTD was more cost-effective than other transportation modes.
- **Relaxation**: 58% preferred the bus because it is more relaxing than driving a car.

Opportunities for Improvement: Increasing Frequency

When asked about ways to enhance service, riders commonly mentioned the need for more frequent buses. On weekdays, 31% of passengers said this would encourage greater ridership. On weekends, the percentage rose to 42%.

Planning Trips with Technology

The **Transit mobile application** was the most popular trip-planning tool, used by 34% of passengers. Among the top three tools (Transit application, route maps and schedules, and Google Maps), **Google Maps** garnered the highest satisfaction, with 74% of users rating it as "extremely" or "very" satisfying.

Why Riders Use MUTD

MUTD services are integral to the daily lives of many passengers. On the day they were surveyed:

- **41%** of passengers were using the bus for personal errands.
- **34%** were commuting to or from work.

This survey highlights the value passengers placed on MUTD services while offering insights into potential growth areas. By understanding these perspectives, MUTD can continue enhancing the experience for riders and make meaningful strides toward a more accessible and sustainable transportation future.

2023 Missoula Area Transportation Survey

The 2023 Missoula Area Transportation Survey presented a comprehensive look at public perceptions and priorities related to the local transportation system. Conducted by the BBER between November 8, 2023, and February 11, 2024, the survey provides a statistically valid analysis of the MPO area. 565 randomly selected respondents participated, sharing valuable insights into their experiences and opinions.

This survey explored several key topics, including perceptions of the transportation system, priorities for future investments, transportation habits, and attitudes toward electric vehicles, e-scooters, and passenger rail services. Below are some of the key findings.

Perceptions of the Transportation System

About 58% of respondents rated the transportation system as "good" or better – a notable 11% decrease compared to the 2019 survey. In addition, traffic congestion emerged as a growing concern, with 48% of the respondents indicating that it had a very large or somewhat large impact on them, reflecting a 12% increase since 2019.

Investment Priorities

The participants designated top investment priorities as road maintenance, passenger rail, and parking.

Commuting and Transit Access

The average commute time for Missoula workers remained steady at 16 minutes, significantly below the 27-minute national average. Most respondents (66%) reported being able to access transit near their homes, with a higher proportion in the City of Missoula (82%) compared to the county (24%).

Barriers to Transit Use

While many respondents recognized the value of public transit, several barriers were noted: the bus not traveling where it is needed (31%), work schedules or family obligations (23%), and limited bus service during needed times (21%).

Active Modes of Transportation

Biking and walking declined slightly: biking decreased from 6% to 3%, while walking decreased from 7% to 6%. Weather was identified as the top barrier for these transportation modes. Support for e-scooters increased, with 44% of participants expressing support in 2023, compared to 33% in 2019.

Interest in Passenger Rail

A significant majority (80%) of respondents expressed support for using passenger rail service in the future, signaling strong public interest in expanded rail options.

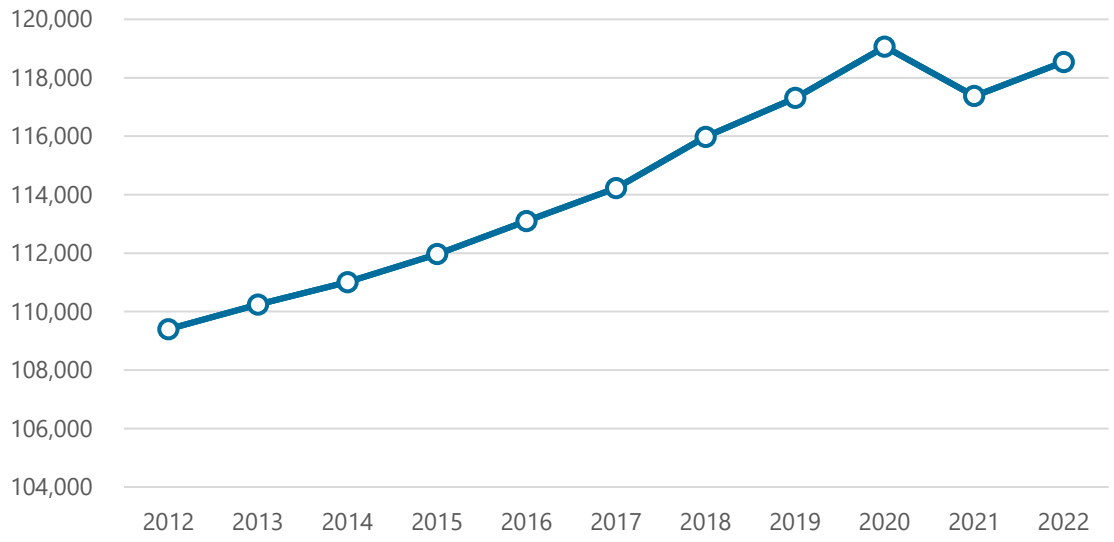
Population and Employment Growth and Trends

The data below represent trends of Missoula's urbanized area, referred to going forward as the Missoula area. The Missoula area has experienced rapid growth over the past decade, with an annual growth rate of 0.81%. As population and employment opportunities continue to grow in the region, high-quality transportation infrastructure and services should be a priority.

Population

Over the past decade, the Missoula area's population increased 8%, from 109,402 residents in 2012 to 118,541 residents in 2022 (Figure 3-1). The Covid pandemic likely caused a dip between 2020 and 2021.

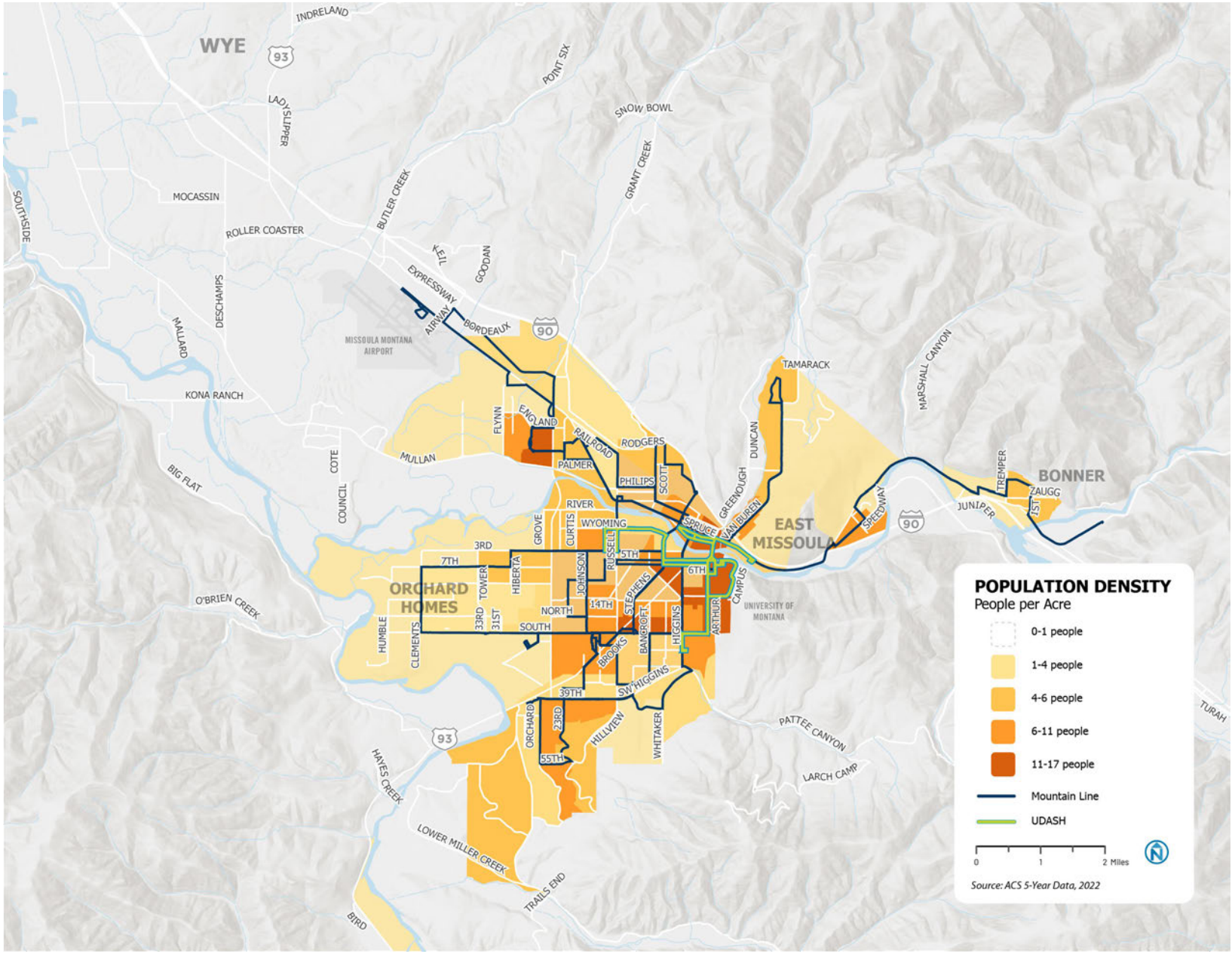
Figure 3-1 Population Growth



Source: American Community Survey (ACS) 5-Year Estimates, 2022

Areas of high population density (about 11 to 17 people per acre) are clustered in downtown Missoula, neighborhoods surrounding the University of Montana, and neighborhoods along Mullan Road. Areas with lower population density are in more rural areas of Orchard Homes and East Missoula, with about one to four people per acre as Figure 3-2 shows. The City of Missoula has set a goal to promote infill growth in the "Our Missoula" City Growth Policy.

Figure 3-2 Population Density

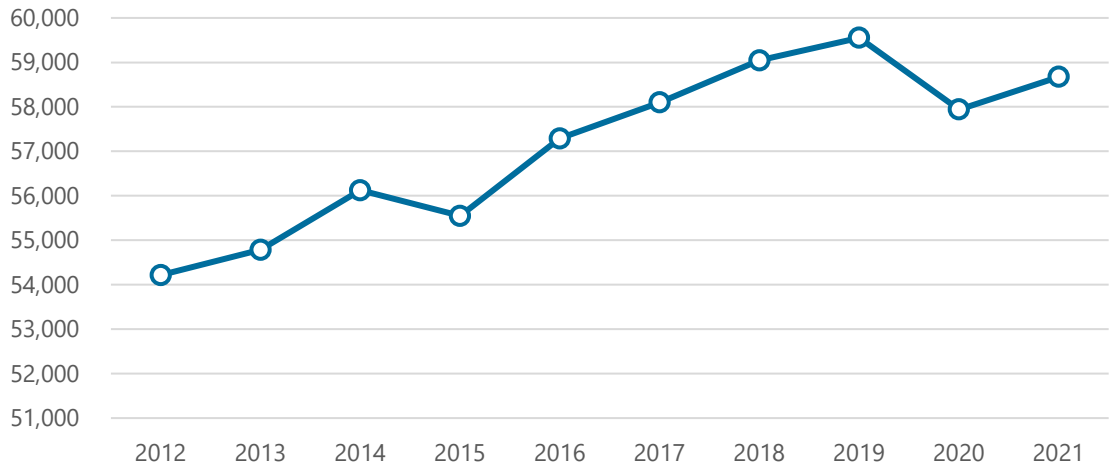


Source: ACS 5-Year Estimates, 2022

Employment

Jobs in the Missoula area increased 8% in the past decade, with a total of 58,675 jobs in 2022. The number of jobs slightly decreased in 2020, likely due to the Covid pandemic (Figure 3-3). A job density map is included in Appendix A. Employment hubs are concentrated in central Missoula. Most of the jobs reside in health care and retail, accounting for about one-third of all jobs in the region. Other jobs (30%) include agriculture, forestry, guiding, public administration, manufacturing, finance and insurance, and wholesale trade (Figure 3-4). As the region continues to grow, transportation options connecting people where they live to jobs in the community need to be considered.

Figure 3-3 Jobs Growth



Source: Longitudinal Employer-Household Dynamics (LEHD), 2022

Figure 3-4 Major Employment Sectors in Missoula

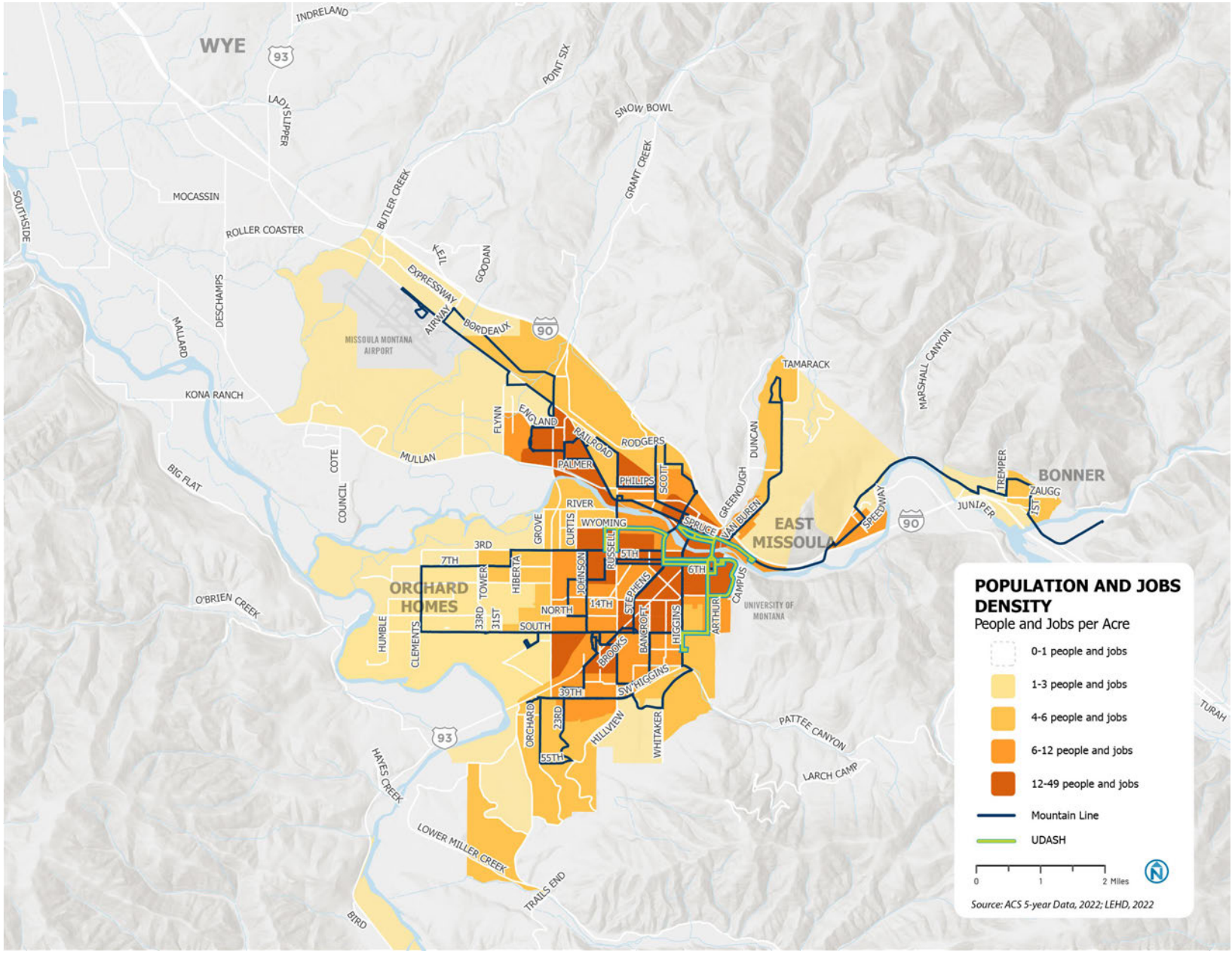
Employment Sector	% of Total Employment Share
Health Care and Social Assistance	18%
Retail Trade	14%
Accommodation and Food Services	9%
Educational Services	9%
Professional, Scientific, and Technical Services	7%
Construction	6%
Public Administration	6%
Other	30%

Source: LEHD, 2022

Population and Employment

Combining population and employment data can better highlight areas where more support for transit service is anticipated. In locations where population and employment densities are higher, transportation investments benefit more people, and transit service is more productive. As shown in Figure 3-5, the areas with the highest combined population and employment density are concentrated in the urban core and already access transit service today.

Figure 3-5 Population and Jobs Density



Source: ACS 5-Year Estimates, 2022 and LEHD, 2022

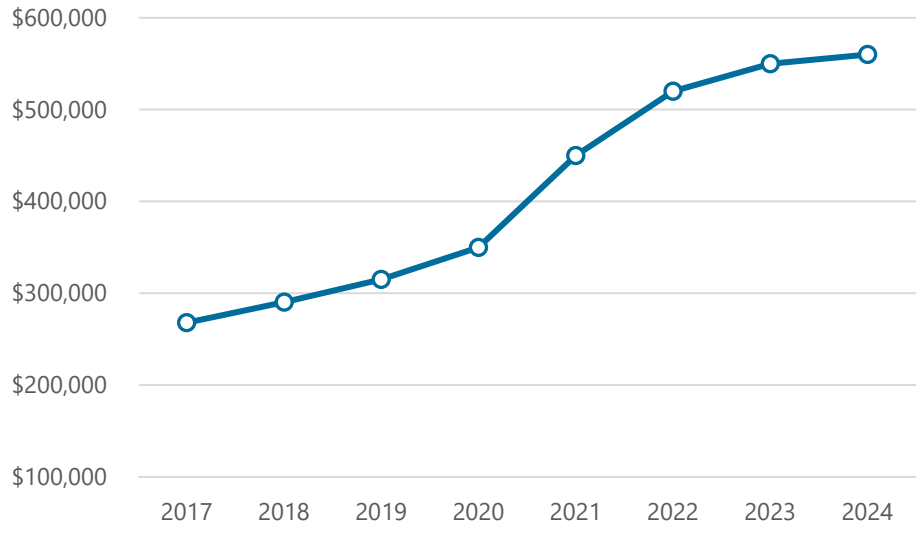
Changes in Affordability and Equity Priority Indicators

As in many regions in the United States, housing costs are rising faster in the Missoula area than wages, making it difficult for many to find housing they can afford. Therefore, affordable transportation options are necessary to connect residents with jobs, schools, various services, and recreational opportunities.

Based on ACS 5-year estimates for 2022, half of workers earn an annual income of less than $40,000. As of 2022, the official poverty rate, as defined by Bureau of Labor Statistics, is $15,225 for an individual, and just over 11% of the United States population reported living below the poverty line in 2022. In the City of Missoula, 14.6% of residents live below the poverty line compared to only 9.2% of Missoula County residents. Additionally, the median home sale price has doubled since 2017, posing a challenge for residents to live comfortably in the Missoula area (Figure 3-6). About 60% of Missoula area residents own and about 40% rent; the percentage of renters and owners has not changed since it was reviewed in the previous LRTP. This percentage may change in the future as housing prices continue to rise and more people rent due to the high price of purchasing a home (Figure 3-7).

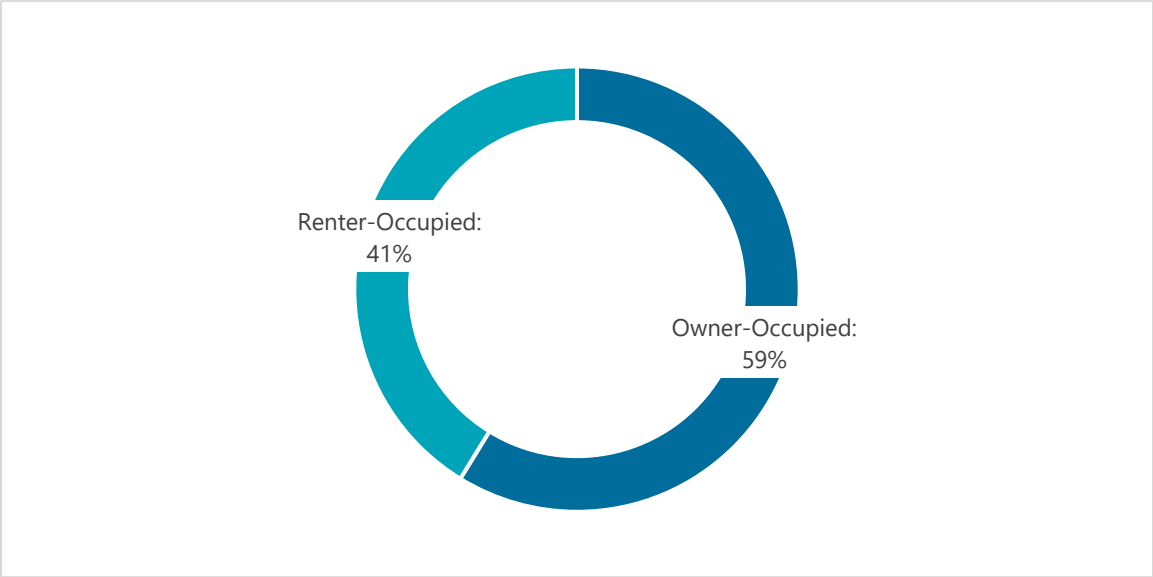
The City of Missoula recently completed an equity in land use report that addresses these affordability issues in greater detail. The project website includes links to the final report and an executive summary.

Figure 3-6 Median Home Sale Price, 2017-2024



Source: Montana Regional MLS, 2024

Figure 3-7 Renter-Occupied vs. Owner-Occupied Housing Units



Source: ACS 5-Year Estimates, 2022

Equity Considerations

In recent years, the topic of transportation equity has been discussed more frequently and with increasing levels of importance. At its core, transportation equity seeks to prioritize resources for those who need them most. Nelson\Nygaard conducted an analysis to identify potential transportation equity areas within the greater Missoula area.

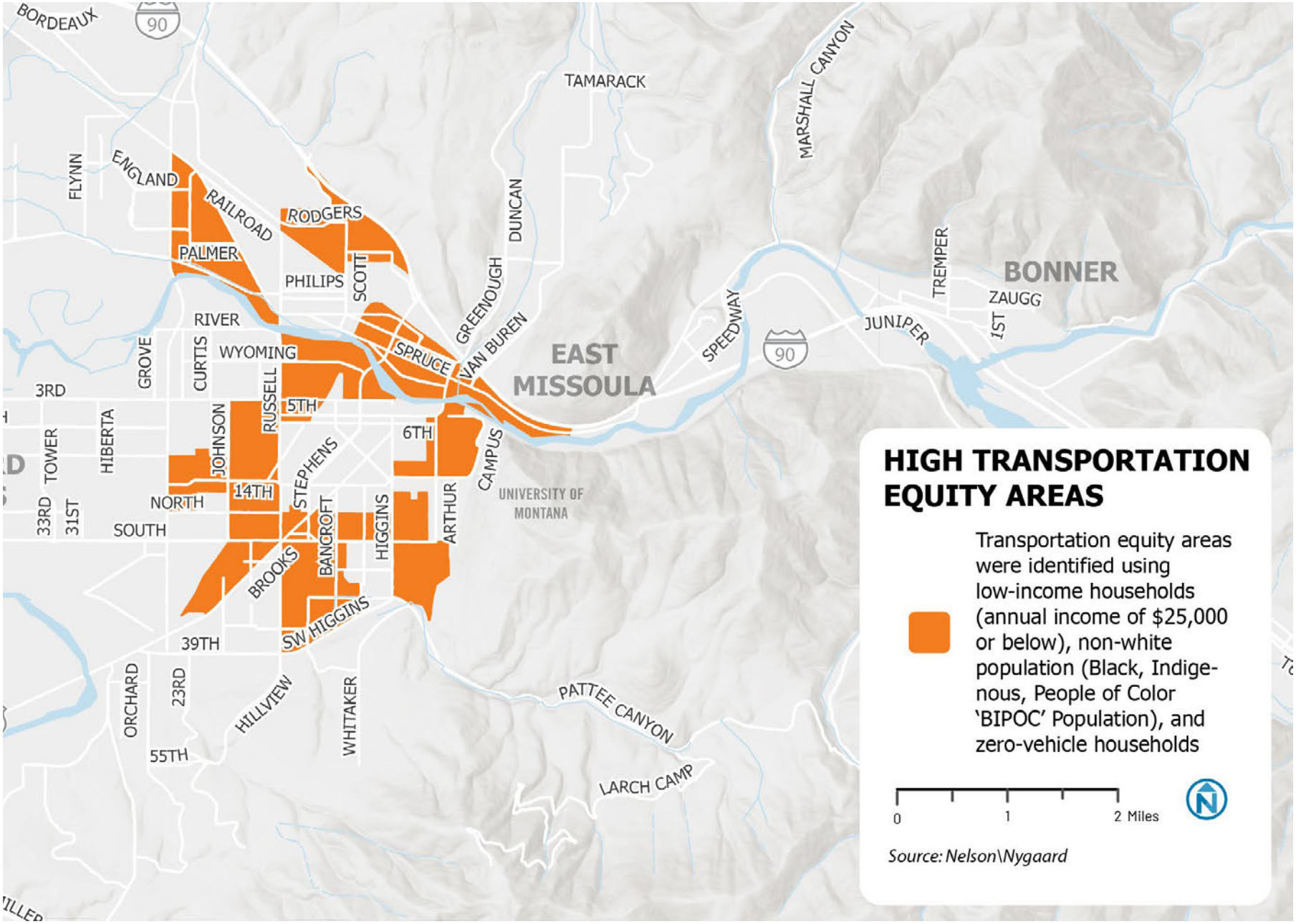
Using the latest census block group data, three variables with strong indicators for high transportation equity needs were examined. These variables were:

- Households with annual income of $25,000 and below (low-income)
- Non-white population (Black, Indigenous, People of Color)
- Zero-vehicle households

Using the three variables, the percentage of households/population in each block group was computed. From there, each variable for each block group was scored from zero to ten based on the distribution of percentages. The three scores were then added together, resulting in a combined equity score. Figure 3-8 shows the results. The darker colors indicate areas with higher equity need.

While older adults (defined as those age 65 and older) were not considered directly in this analysis, the low-income and zero-vehicle household data capture older adults who are on a limited income and/or may not be able to drive. It should be noted that older adults are more likely to take paratransit than fixed-route services.

Figure 3-8 Identified Transportation Equity Areas



Source: Nelson/Nygaard

Transit Propensity

Using select demographic, socioeconomic, and employment data can determine the overall transit need for a given area. Areas of higher propensity, or demand, are more likely to generate ridership and benefit from existing transit services.

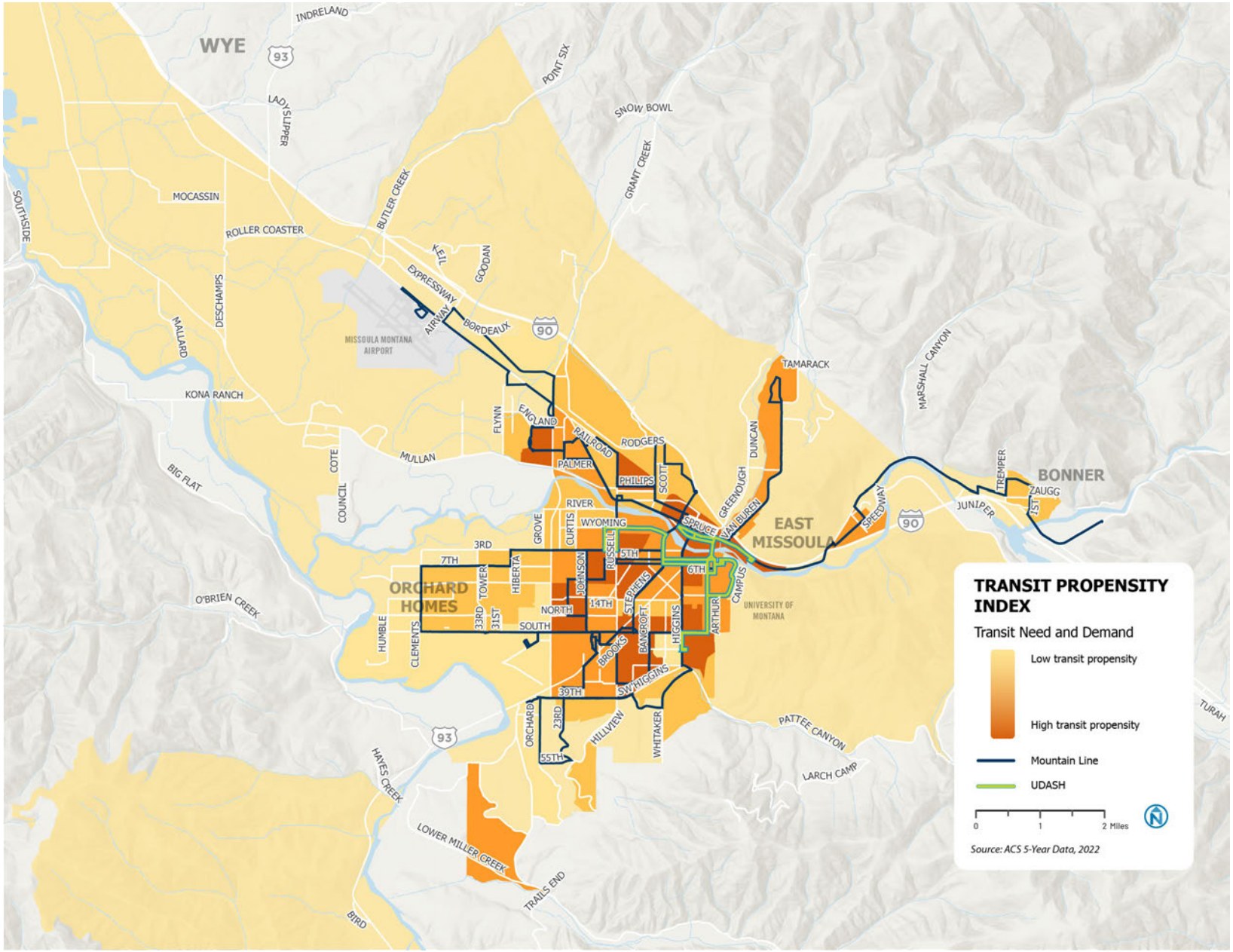
To assess transit propensity, the following demographic and socioeconomic factors were used as individuals from these groups are more likely to use transit:

- Young adults between the ages of 16 to 24
- Non-white individuals
- Individuals born outside the U.S.
- Low-income individuals defined as earning less than 150% of the federal poverty level
- Households without a vehicle
- Households that rent their homes

In the greater Missoula area, using census journey-to-work data, all six variables were associated with a higher correlation of using transit than the overall population. A composite transit propensity score was computed for each block group by totaling the individual percentages of population or households in each block group that met the given criteria. A higher composite score indicates greater transit propensity.

As shown in Figure 3-9, Downtown and northwest Missoula showed the highest propensity to use transit. These areas already have MUTD fixed-route services; however, improving transit service to these areas (e.g. greater frequency, longer service spans) can improve mobility for these residents.

Figure 3-9 Transit Propensity



Source: ACS 5-Year Estimates, 2022

Key Findings

- Population in Missoula **has increased 8%** in the past decade except for a dip in 2020 and 2021, most likely due to the Covid pandemic. Historically, the population grew 0.81% annually.
- Population density is concentrated in Downtown and neighborhoods surrounding the University of Montana and Mullan Road. The City of Missoula is promoting infill growth to meet the growing population needs.
- Jobs **increased 8% in the past decade** except for a dip in 2021, most likely due to the Covid pandemic. Employment is concentrated in central Missoula.
- **MUTD fixed-route services exist in areas with high population density, employment density, and transit propensity**. It is crucial for Missoula's agencies to continuously improve transportation to meet the travel needs of residents in these areas and other areas that are expected to grow in population.
- Most passengers reported that they are **very likely to recommend MUTD** to others, and almost half of passengers said that their opinion of MUTD has **improved over the past two years**.
- Top reasons riders use MUTD over other transportation modes include better for the **environment**, **less expensive**, and more **relaxing**.
- MUTD riders have expressed a desire for more frequent weekday and weekend service.
- Riders use MUTD services for purposes including **medical appointments, work, school, and personal errands.**
- About 60% of survey respondents rated the **transportation system as good or higher**.
- **The top barrier** to riding a bicycle or walking in Missoula is the weather.
- Most survey participants would support future passenger rail service.
- Biking and walking **decreased** in the past six years.[1]
- The average commute time (16 minutes) **has not changed** in Missoula and remains lower than the 27-minute national average.

[1] Note, the two surveys that support this finding were conducted during different times of the year that may have influenced these results (2019 survey was conducted in summer/fall, 2023 survey was conducted in the fall/winter).

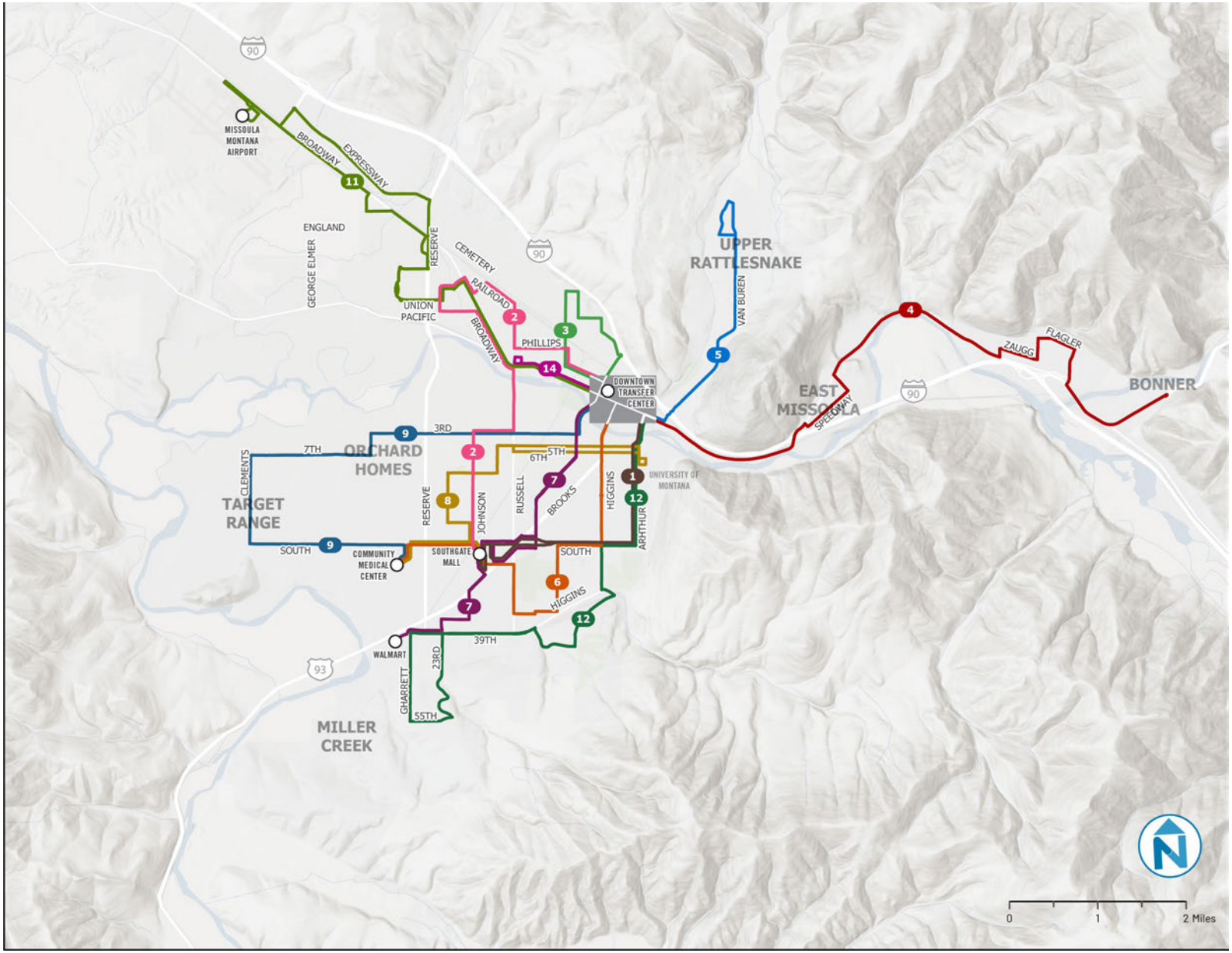
TRANSIT CONDITIONS

This section provides an overview of transit services in Missoula, including those provided by MUTD and the University of Montana's (UM) UDASH.

Mountain Line Current Services

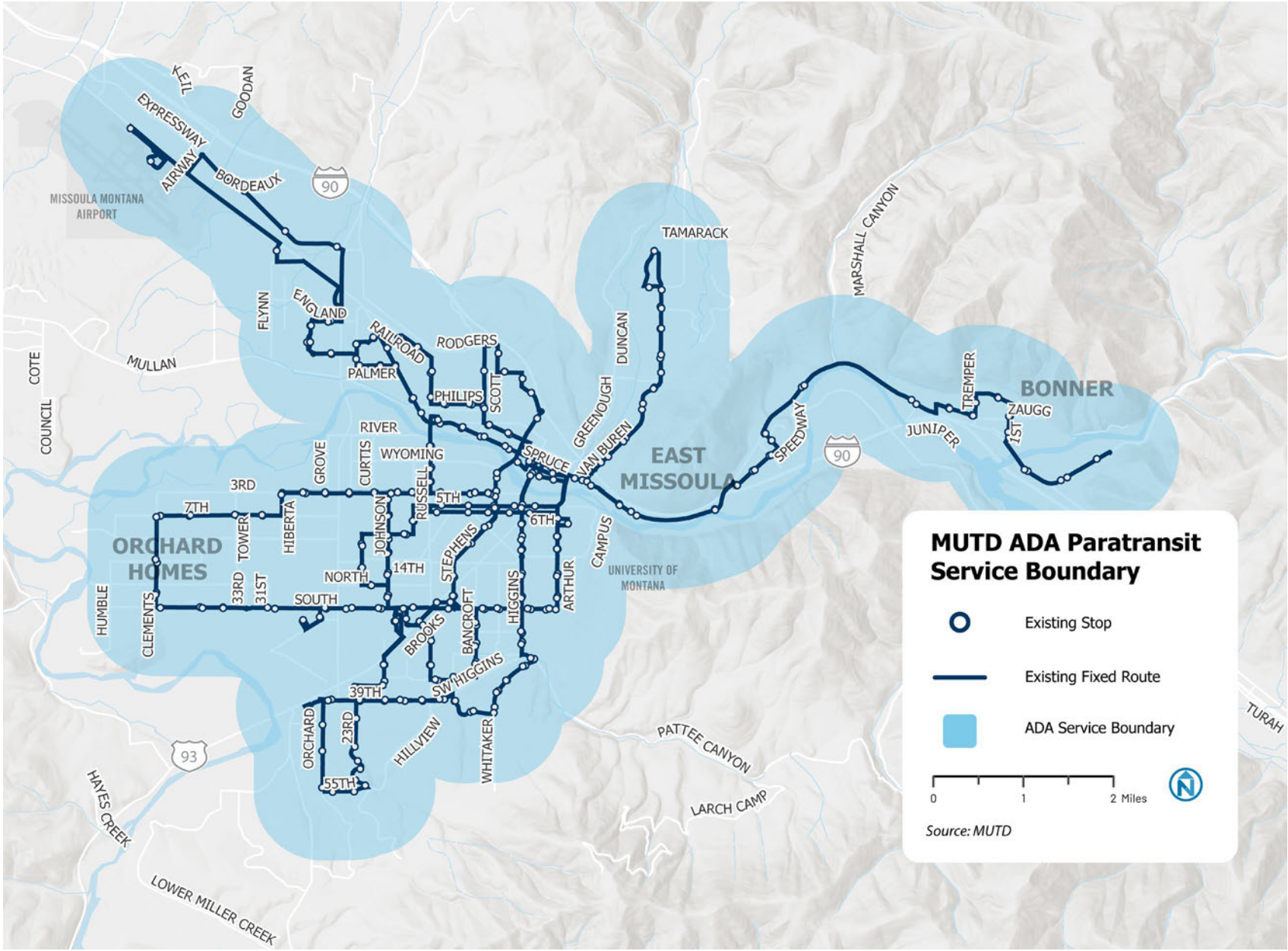
MUTD, also known as Mountain Line, is the primary transit provider in Missoula, operating zero-fare fixed-route bus and paratransit service. Figure 3-10 illustrates the fixed-route network. Figure 3-11 illustrates the paratransit service area, delineated as a three-quarter mile buffer around the fixed-route network.

Figure 3-10 MUTD Fixed-Route



Source: MUTD

Figure 3-11 MUTD Paratransit Service Area



Source: MUTD

Other Regional Providers

UDASH

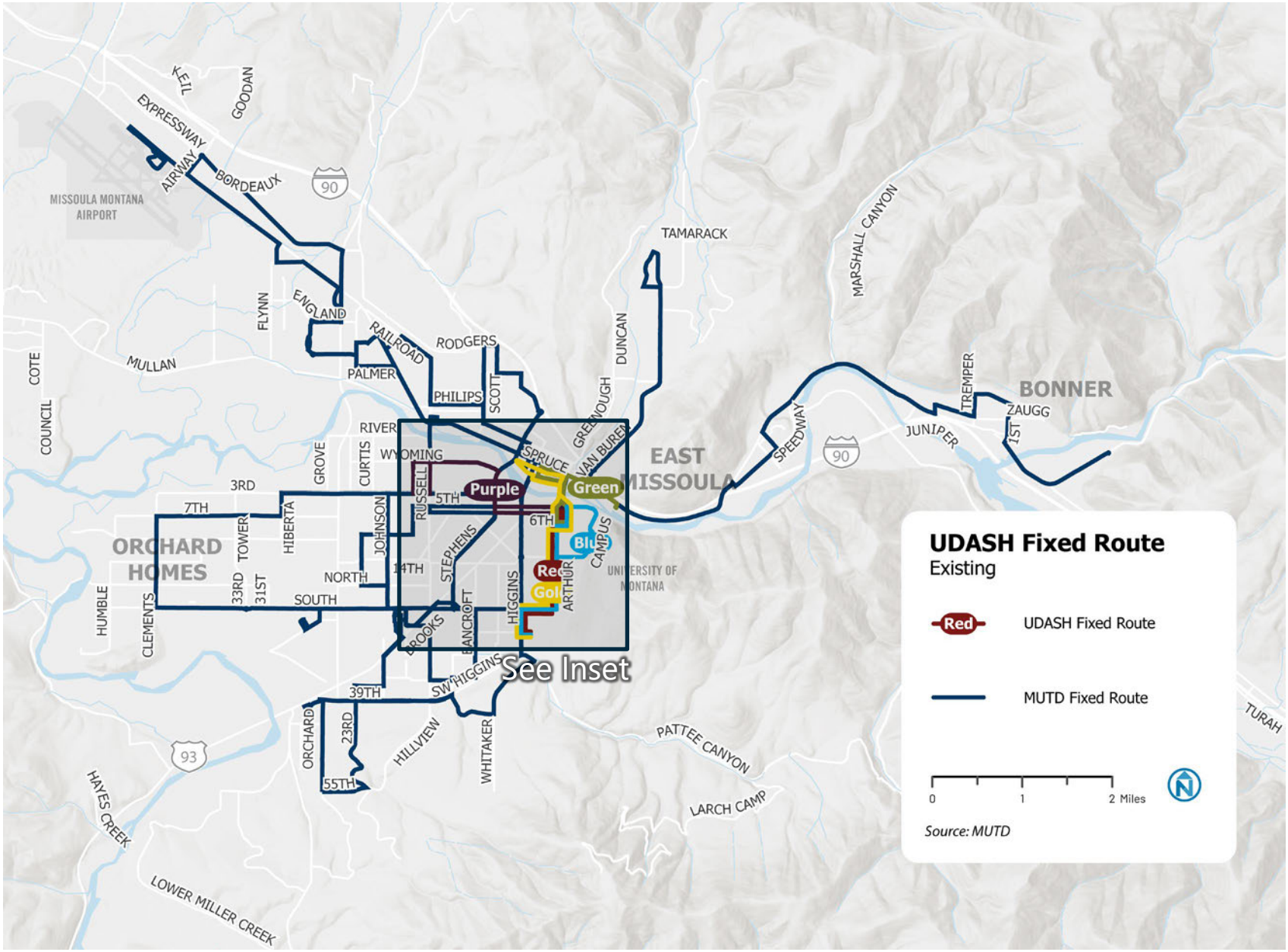
UDASH is the University of Montana's (UM) transportation service.

Figure 3-12 illustrates UDASH fixed-route service. The university operates five bus routes that connect UM's south and main campuses and residential areas. All five routes operate Monday through Friday when UM is in session. The university also operates several special event shuttles for commencement and football games.

The Purple Line operates between the UM Transit Hub and Catlin Street / Wyoming Street via 5th Street, 6th Street, and Cregg Lane. Service operates every 30 minutes from 7:15 a.m. to 6:00 p.m. The Green Line operates between the UM Transit Hub, Missoula College (River Campus), and Downtown near ROAM Student Living via Broadway Street, Main Street, and Front Street. The service operates every 20 minutes from 7:30 a.m. to 6:10 p.m. The Red Line operates between the UM Transit Hub and Lewis and Clark Park and Ride via Arthur Avenue and South Avenue. The service operates every 20 minutes from 7:15 a.m. to 8:30 p.m. The Blue Line operates between the UM Transit Hub and Lewis and Clark Park and Ride via Campus Drive, Arthur Avenue and South Avenue. The service operates every 30 minutes from 7:00 a.m. to 8:50 p.m. The Gold Line operates between the Transit Hub, downtown Missoula, and Lewis & Clark Park and Ride. The service operates every 30 minutes from 8:30 p.m. to 10:18 p.m. from Monday to Thursday and until 12:48 a.m. on Friday nights.

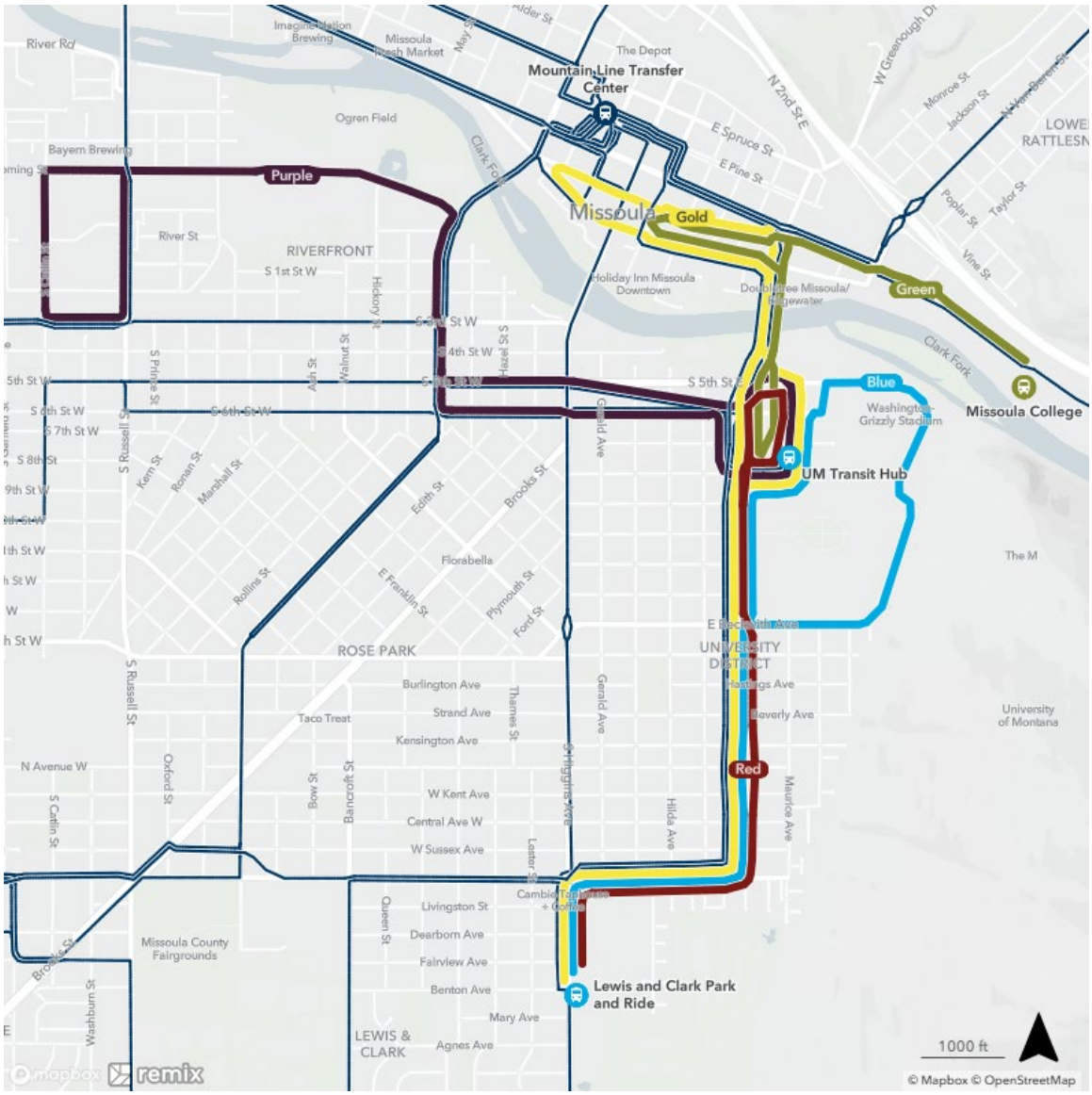
Several UDASH services corridors duplicate MUTD service. The Blue and Red Lines duplicate Routes 1 and 12 on Arthur Avenue. The Green Line duplicates Route 4 on Broadway Street. The Purple Line duplicates Route 8 on 5th and 6th Streets.

Figure 3-12 UDASH Fixed-Route



Source: University of Montana, 2023

Figure 3-13 UDASH Fixed-Route Inset



Source: University of Montana, 2023

Fixed Route

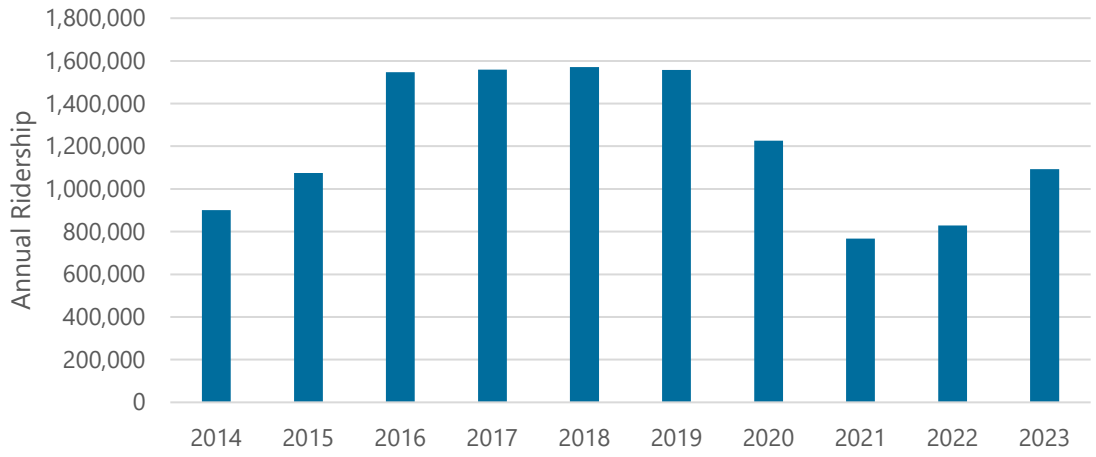
MUTD currently operates 13 fixed routes in its network (including one seasonal historic trolley route). This section describes MUTD's fixed-route service in greater detail, including historical trends and route-level analysis of service span and frequency, ridership, productivity, and on-time performance. It also includes an overview of existing transit facilities, bus stops and amenities, and geographic coverage. The purpose of this analysis is to understand the baseline service level upon which to build future recommendations.

Historical Trends

Providing a historical context of MUTD's fixed-route service is important to set a baseline for where the agency is today.

As seen in Figure 3-14, ridership on MUTD's fixed-route service peaked during 2016 to 2019 at slightly less than 1.6 million trips. Like many agencies, MUTD experienced a drop in ridership due to the Covid pandemic. Ridership has not fully recovered – MUTD's FY 2023 annual ridership is roughly 70% of FY 2019 ridership.

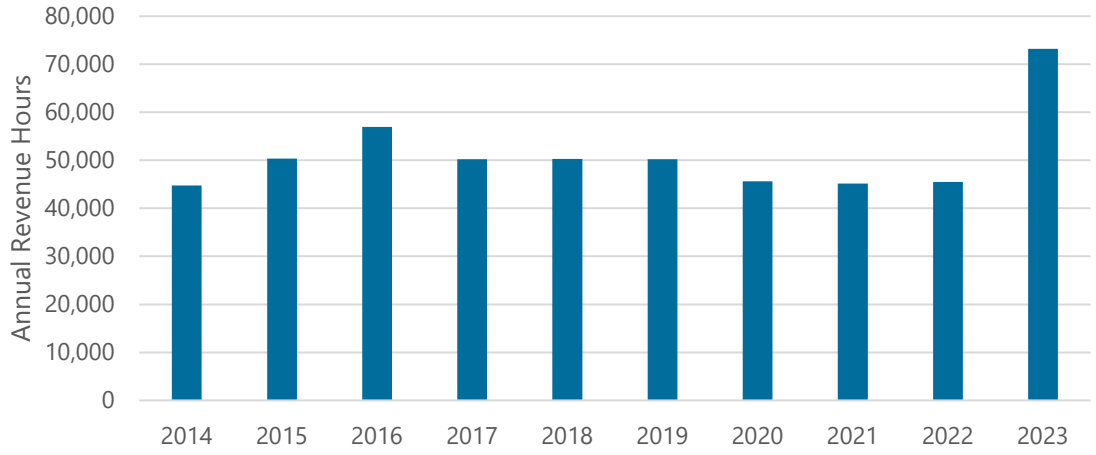
Figure 3-14 Historical Fixed-Route Ridership



Source: MUTD, 2023

Revenue hours are the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip. As seen in Figure 3-15, revenue hours had been generally steady except for a small decrease from 2020 to 2022. Revenue hours in FY 2023 increased through introducing various service improvements in July 2022, including new Sunday service, longer Saturday service, and more weekday service. Weekday service enhancements included earlier and later service as well as all-day service on Routes 4 and 11.

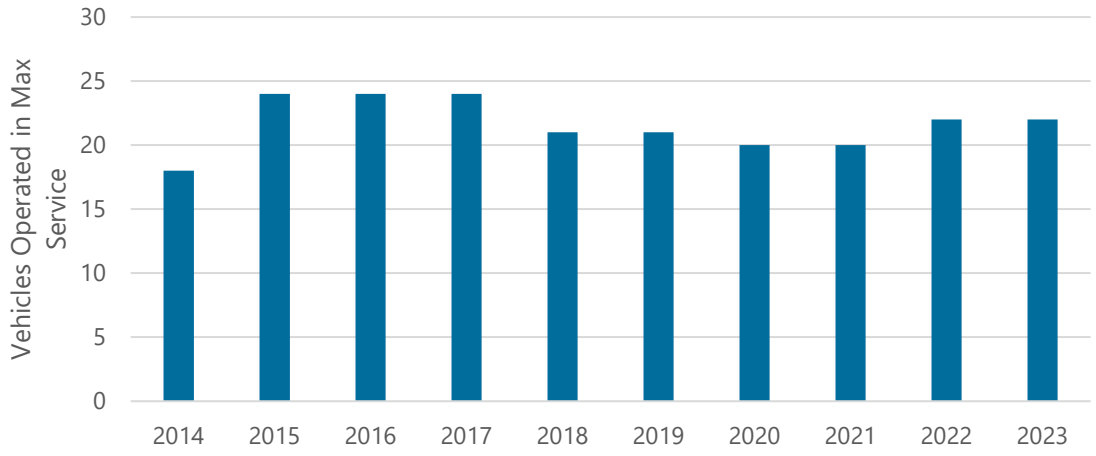
Figure 3-15 Historical Fixed-Route Revenue Hours



Source: MUTD, 2023

Vehicles operating in max service represent the maximum number of vehicles needed at a single time to provide peak service. As seen in Figure 3-16, vehicles operated in max service peaking from 2015 to 2017 at 24 vehicles. Notably, the service increases implemented in July 2022 did not require an increase in the number of vehicles operated in max service in FY 2023.

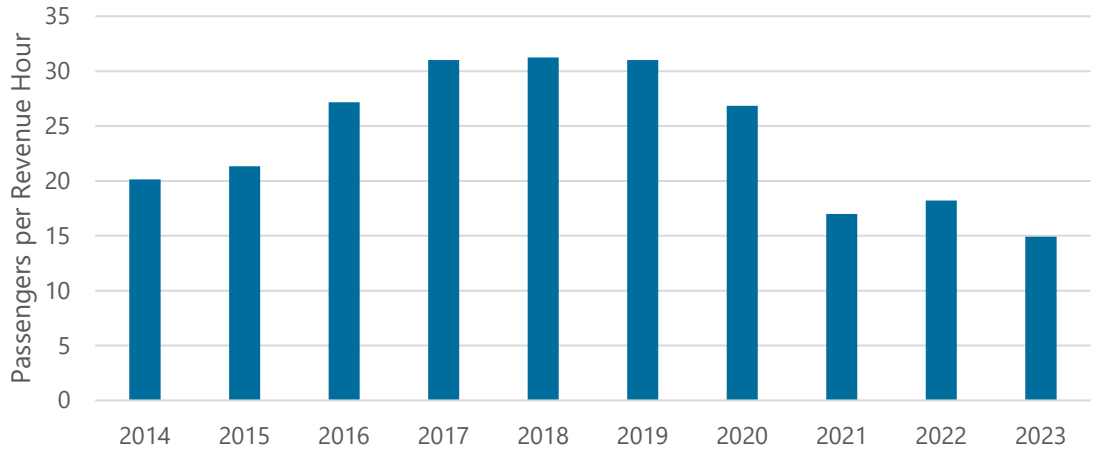
Figure 3-16 Historical Fixed-Route Vehicles Operated in Max Service



Source: MUTD, 2023

The productivity of service is typically measured in number of passengers per revenue hour. Service productivity (Figure 3-17) peaked from FY 2017 to 2019 and is currently at a ten-year low of about 15 passengers per revenue hour. Low productivity in FY 2023 is likely due to the large service expansion, particularly into new time periods (Sunday and early morning/late evening weekday service). While this new service no doubt improves mobility within the community, more time is needed for the ridership count to fully mature.

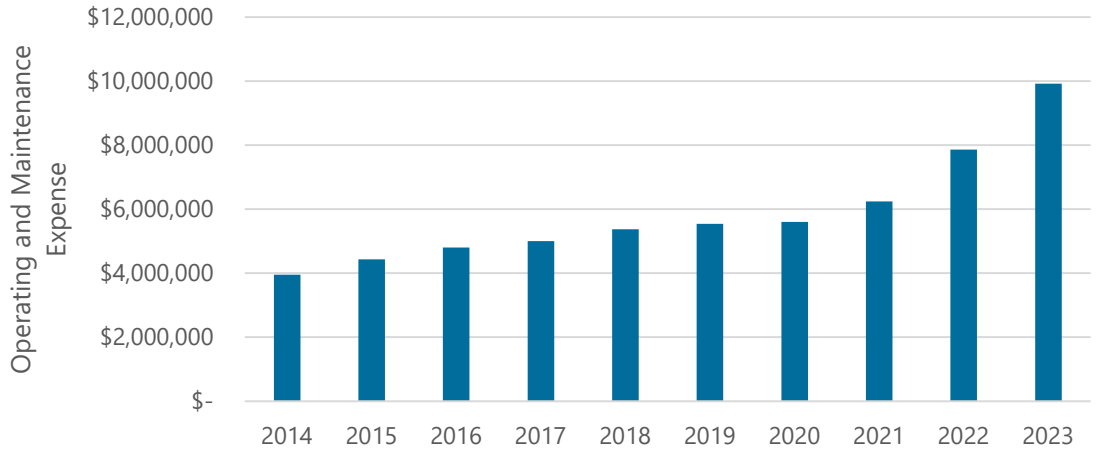
Figure 3-17 Historical Fixed-Route Productivity



Source: MUTD, 2023

Figure 3-18 shows the annual operating and maintenance (O&M) costs for the fixed-route system, not adjusted for inflation. Prior to the pandemic, costs rose an average of 6% per year. Between FY 2021 and 2023, costs increased by an average 20% annually.

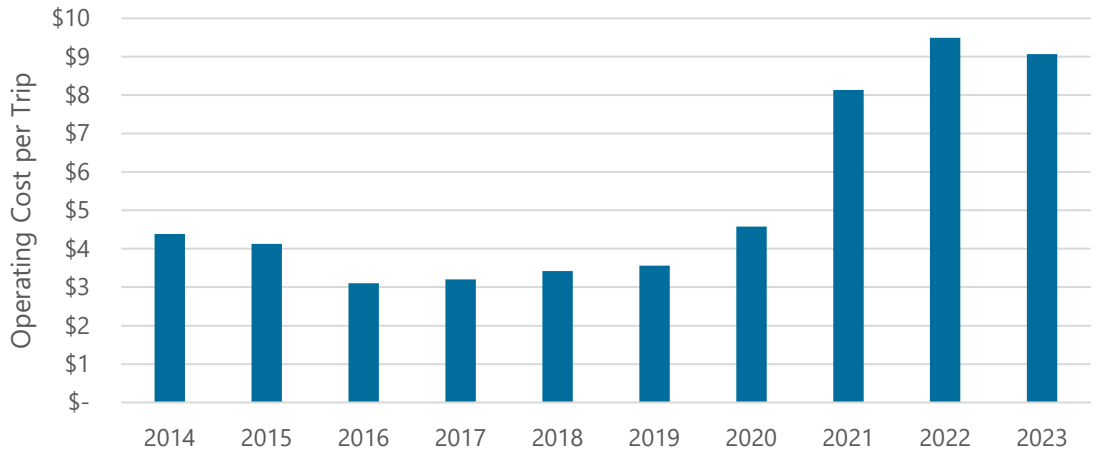
Figure 3-18 Historical Fixed-Route Operating and Maintenance Expense



Source: MUTD, 2023

Figure 3-19 normalizes O&M costs by passenger number, or trips. It shows that the cost per trip hovered around $3.77 between FY 2014 and 2020. Due to Covid-related ridership declines, higher operating costs, and increased revenue service, the cost per trip increased to an average $8.90 between 2021 and 2023, a 136% increase.

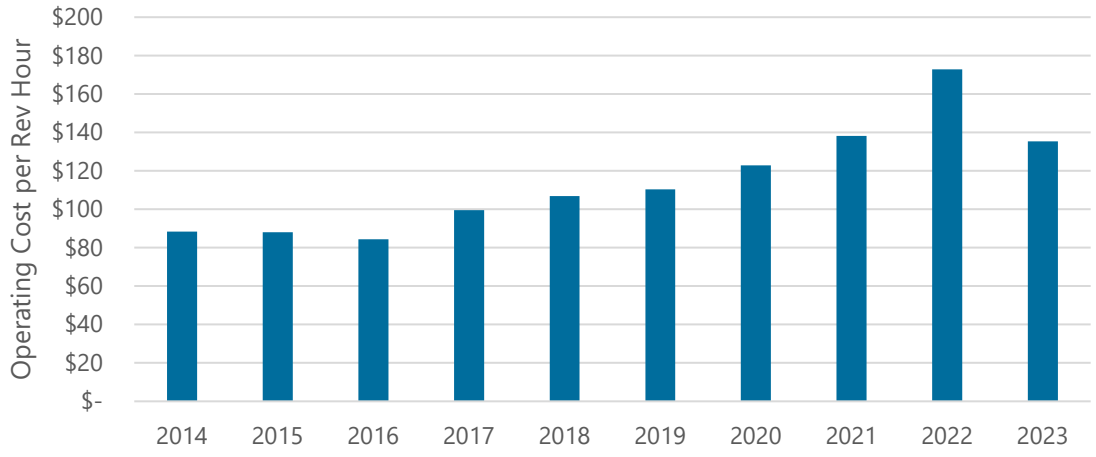
Figure 3-19 Historical Fixed-Route Cost per Trip



Source: MUTD, 2023

Figure 3-20 normalizes O&M costs by revenue hours. Between FY 2014 and 2023, cost per revenue hour increased by an average 6% per year. A significant 25% increase from the previous year occurred in FY 2022, largely. Inflation accounts for year-over-year increases.

Figure 3-20 Historical Fixed-Route Cost per Revenue Hour



Source: MUTD, 2023

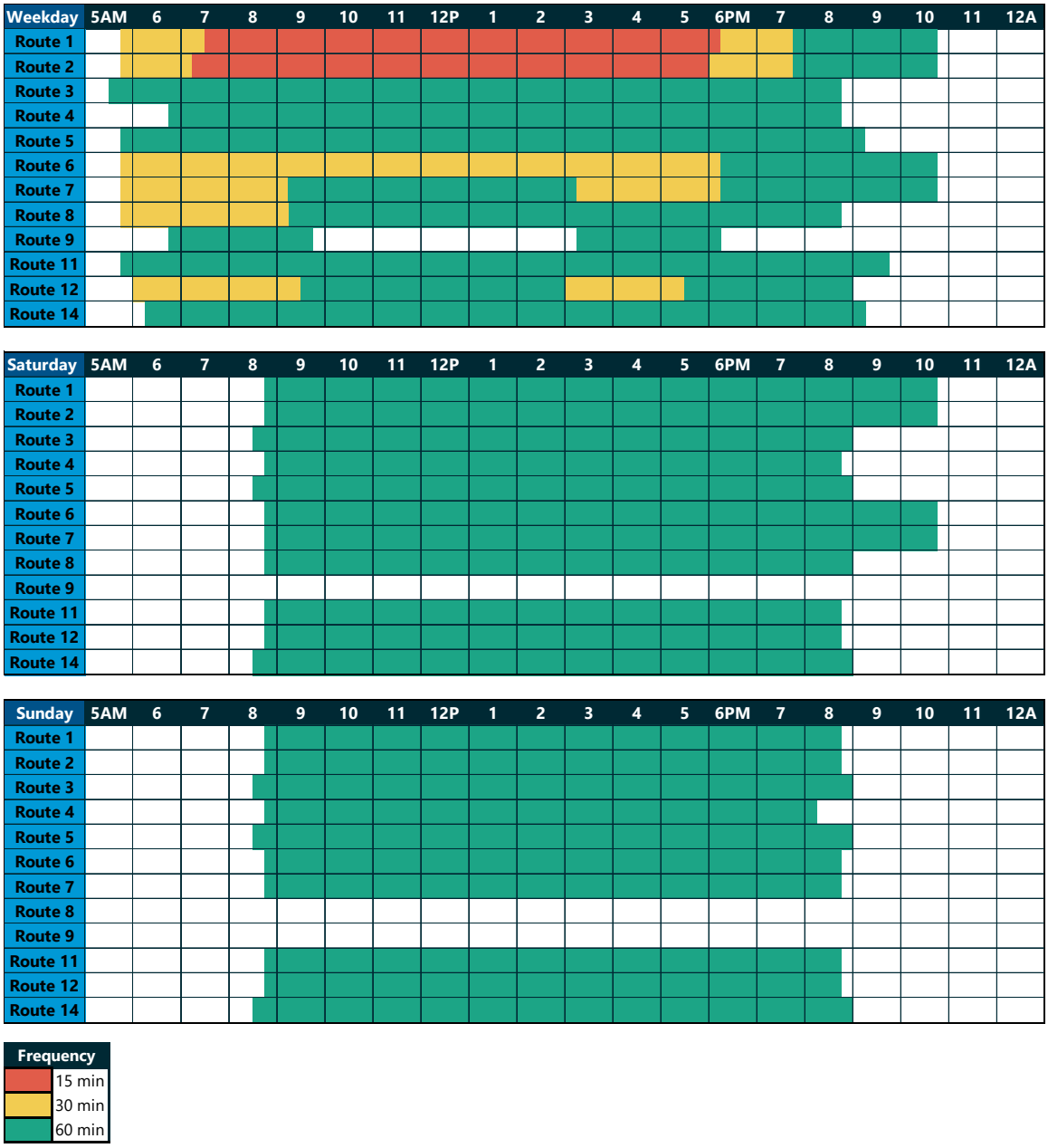
Span of Service and Frequency

Figure 3-21 shows headways and service span for each route. Figure 3-22 shows the spatial distribution of routes by service frequency for weekday daytime (peak). Maps with frequencies on weekday evenings (off-peak), Saturdays, and Sundays are included in Appendix A.

All but two of MUTD's routes operate seven days weekly. On weekdays, routes generally operate between 6 a.m. and 9 p.m., except for Routes 1, 2, 6, 7, and 11, which end around 10 or 11 p.m. On weekends, routes generally run from 9 a.m. to 9 p.m., except for Routes 1, 2, 6, and 7, which operate until 11 p.m. on Saturdays.

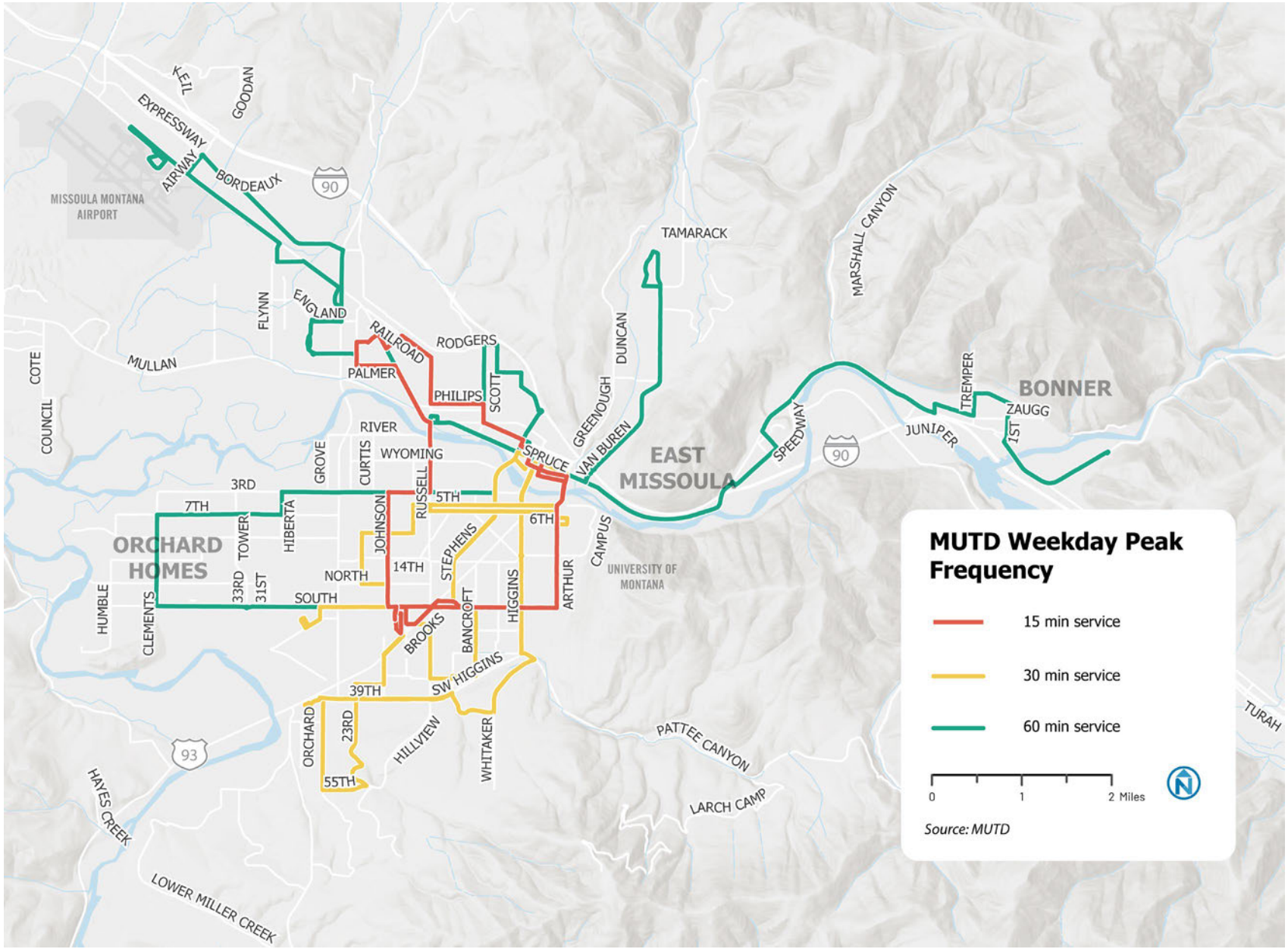
Aside from two routes, most operate on between 30- and 60-minute headways on weekdays. Routes 1 and 2 operate a 15-minute weekday service from 7 a.m. to 6 p.m. On weekends, all routes run on 60-minute headways.

Figure 3-21 Fixed-Route Span and Frequency



Source: MUTD, Effective July 10, 2022

Figure 3-22 Fixed-Route Weekday Peak Frequency



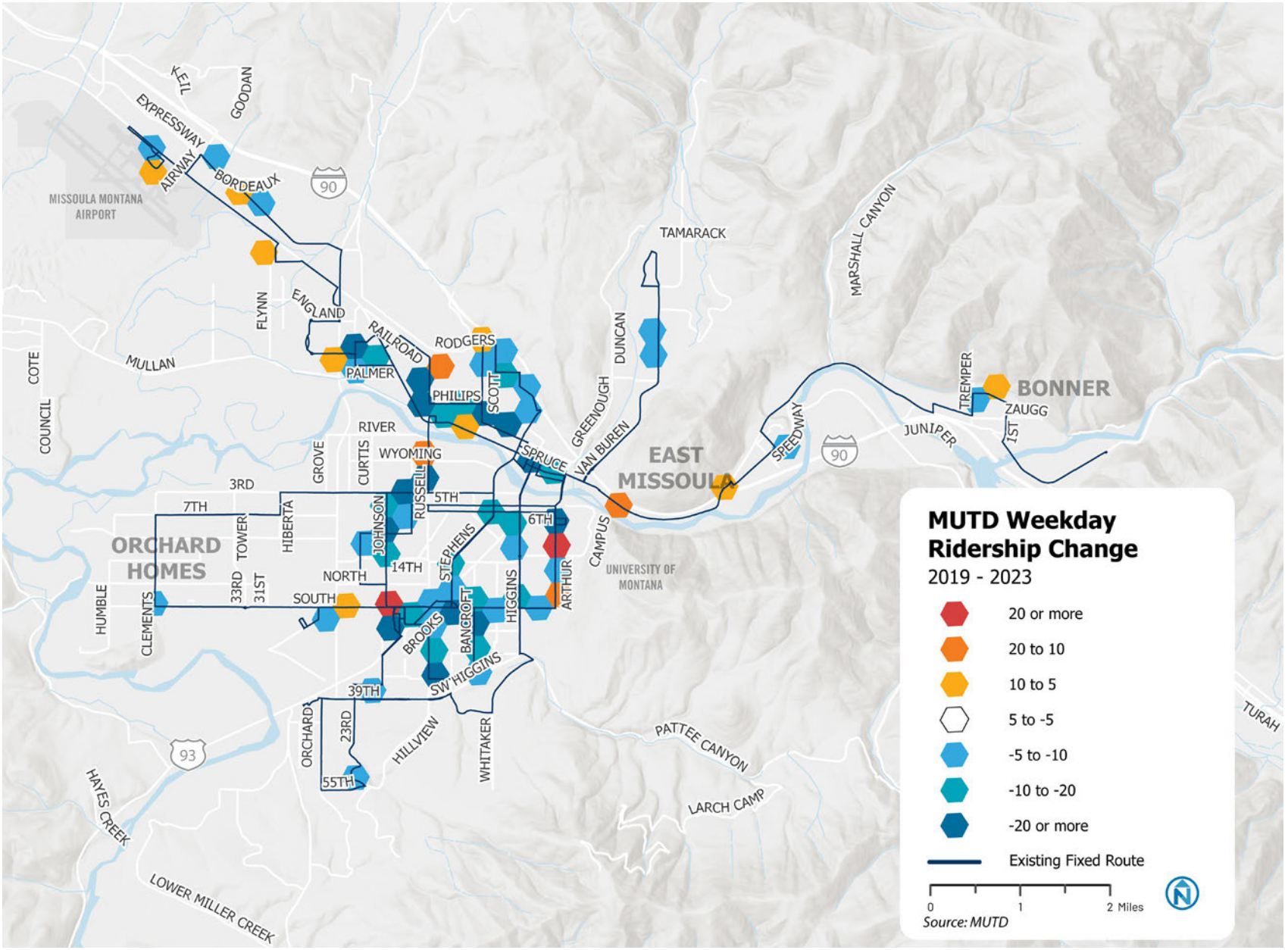
Source: MUTD

System Ridership

In 2019, MUTD's fixed-route network averaged over 5,043 boardings on weekdays. In 2023, the system posted an average of 3,892 weekday boardings. Maps that depict the average weekday ridership throughout the system at the stop level in 2019 and 2023 are included in Appendix A. Some of the high-ridership corridors in the system include south Johnson Street, South Avenue, Russell Street, and Broadway Street.

Figure 3-23 shows the change in ridership between 2019 and 2023. Ridership declined around the intersection of South 3rd Street West and south Johnson Street and around the Westside, Northside, Heart of Missoula, Southgate Triangle, and Lewis and Clark neighborhoods.

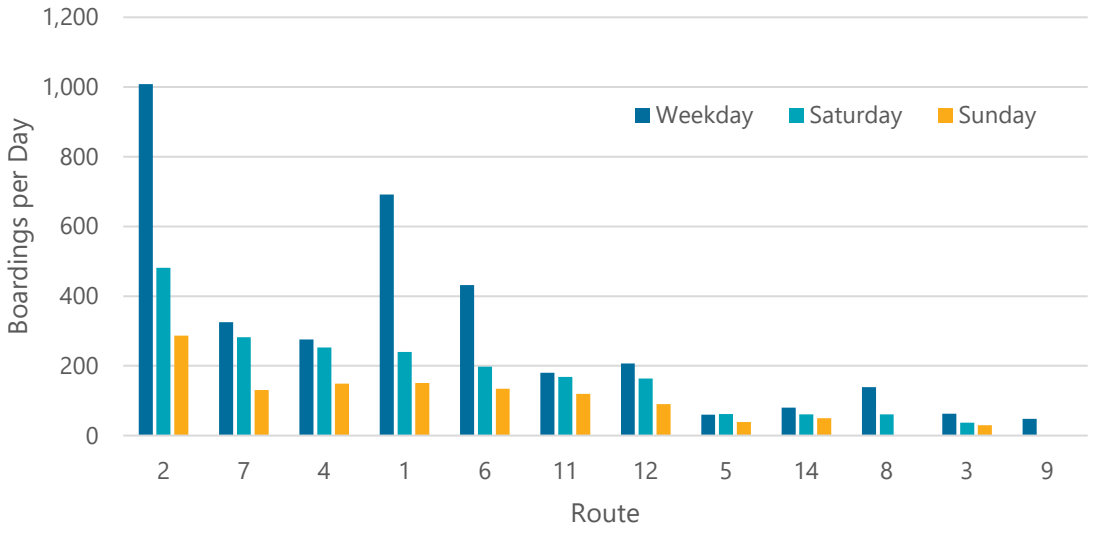
Figure 3-23 Weekday Ridership Change 2019 - 2023



Source: MUTD

Figure 3-24 shows ridership at the route level in September and October 2023. On weekdays, the top three routes are Route 2, Route 1, and Route 6. Combined boardings comprise 61% of daily ridership. On Saturdays, Routes 2, 7, and 4 post the highest ridership numbers. Routes 2, 1, and 4 post the highest ridership numbers on Sundays. On both Saturdays and Sundays, the top three routes together make up 50% of daily boardings.

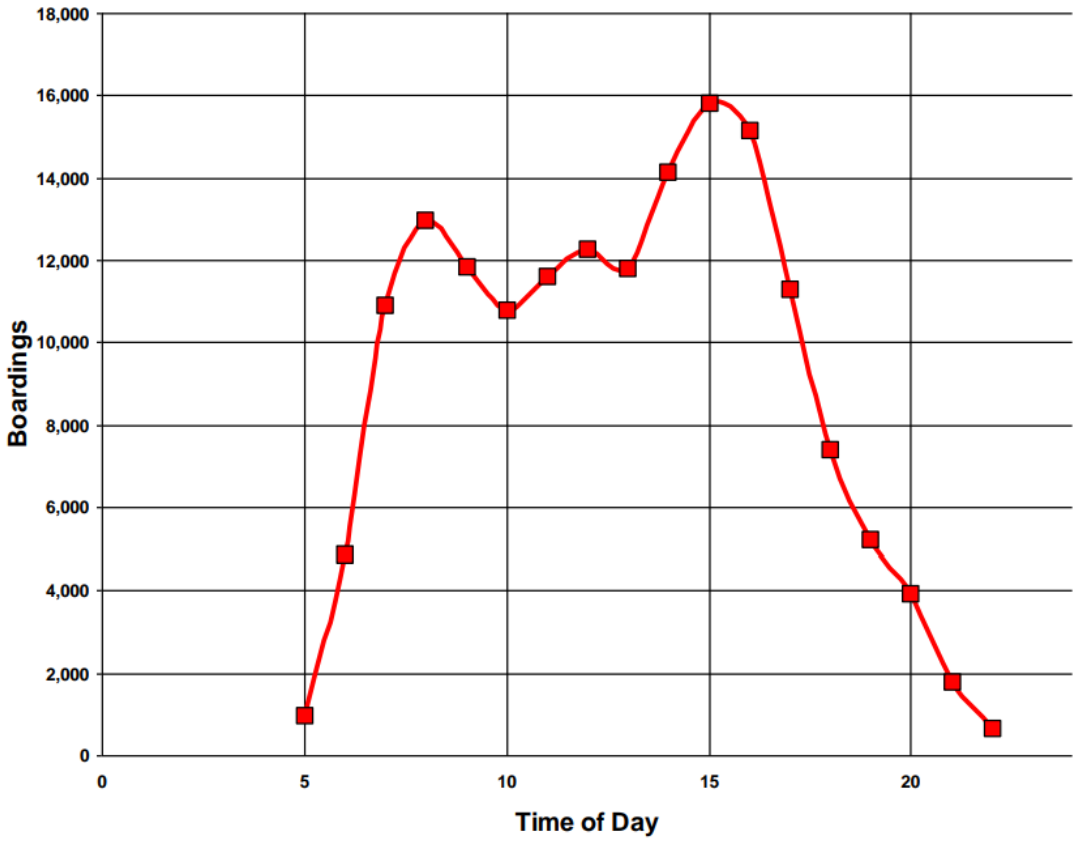
Figure 3-24 Average Weekday Route Ridership 2023



Source: MUTD, September to November 2023

As seen in Figure 3-25, a temporal analysis of ridership was also performed. The results show weekday ridership gradually increases from 5 a.m. before peaking between 7 a.m. and 9 a.m. A second peak occurs between 2 p.m. and 4 p.m. before ridership declines toward the end of service at 10 p.m. Ridership is steady throughout most of the day, aside from the afternoon peak time. The highest ridership periods coincide with the highest service frequencies.

Figure 3-25 Weekday Boardings by Time of Day



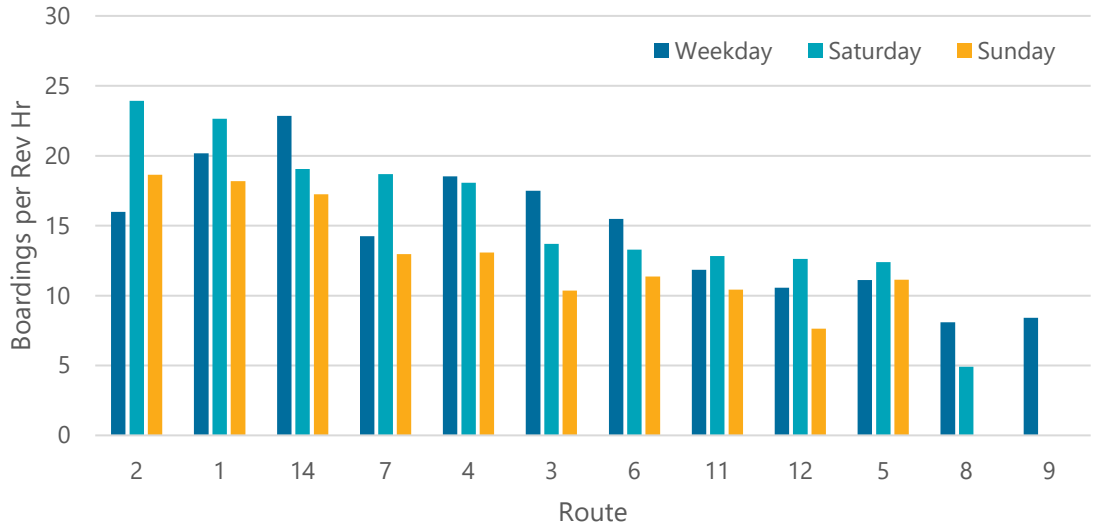
Source: MUTD, September and October 2023

Productivity

Productivity is measured in boardings per vehicle revenue hour. Revenue hours represent the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip.

Figure 3-26 shows the weekday boardings per revenue hour for MUTD fixed-route service. On weekdays, the three most productive routes in the MUTD system are Routes 14, 1, and 4, all of which count 18 or more boardings per revenue hour. The three least productive routes are Routes 12, 9, and 8, all of which count ten or fewer boardings per revenue hour. On Saturdays and Sundays, Routes 1, 2, and 14 count the highest ridership productivity. Routes 8 and 12 post the lowest productivity on Saturdays and Sundays respectively.

Figure 3-26 Route Boardings per Revenue Hour 2023

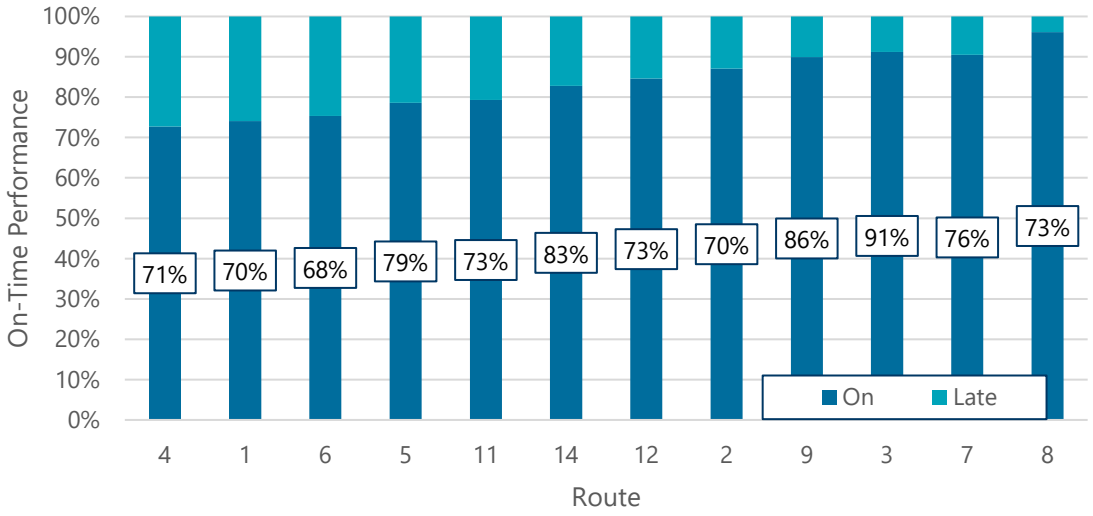


Source: MUTD, 2023

On-Time Performance

MUTD measures on-time performance by comparing the timepoint on the schedule with the actual time the bus arrives. A bus is considered on time if it arrives up to one minute before or five minutes after the scheduled time. Buses that arrive earlier or later than that window are considered early or late. MUTD currently has no on-time performance goal for service. Figure 3-27 illustrates the on-time route performance in September and October 2023. Route 3 posted the highest on-time performance at 91%, while Route 6 posted the lowest at 68%. Route 4 counted the highest rate of late arrivals at 27%.

Figure 3-27 On-Time Performance 2023



Source: MUTD, 2023

Bus Stops and Amenities

There are currently 346 stops in the MUTD system as of December 2023. No stops have been added or removed since this data was collected. Sixty-six stops (19%) have some sort of seating, and 56 additional stops (16%) have shelters. Figure 3-28 shows the number and percentage of stops with various amenities. Improving the passenger waiting experience by investing in more bus stop amenities presents a clear opportunity to raise service quality and attract more riders.

Figure 3-28 Bus Stop Amenities

	Number of Stops	Percent
Seating (Bench or Simme-Seat)	66	19%
Shelter	56	16%
Total	346	100%

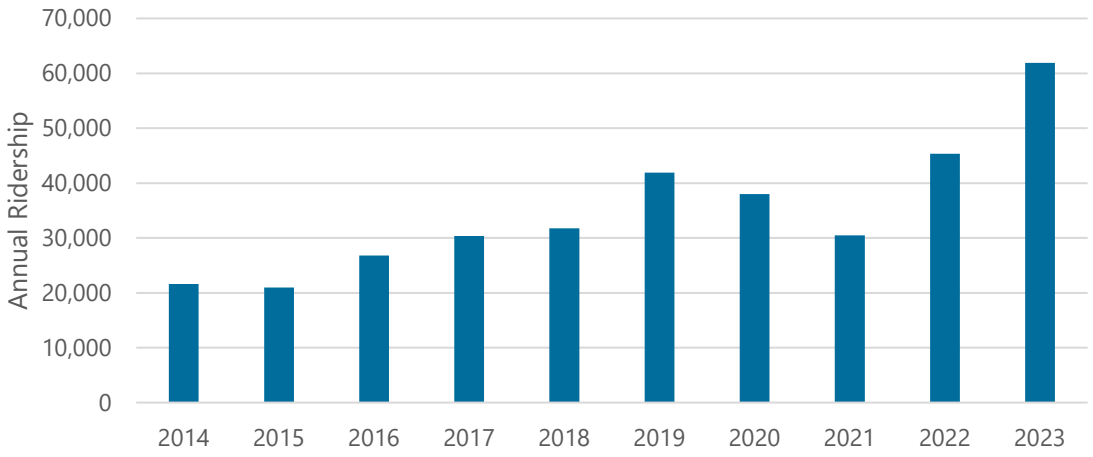
Source: MUTD, December 2023

Paratransit

Historical Trends

Figure 3-29 illustrates historical paratransit ridership. Ridership on MUTD's paratransit service increased by an average of 19% annually. Between 2019 and 2021, the Covid pandemic caused a 27% drop in ridership. However, between 2021 and 2023, paratransit ridership rebounded with a 103% increase. In FY 2023, ridership totaled 61,872, about a 48% increase from pre-pandemic levels.

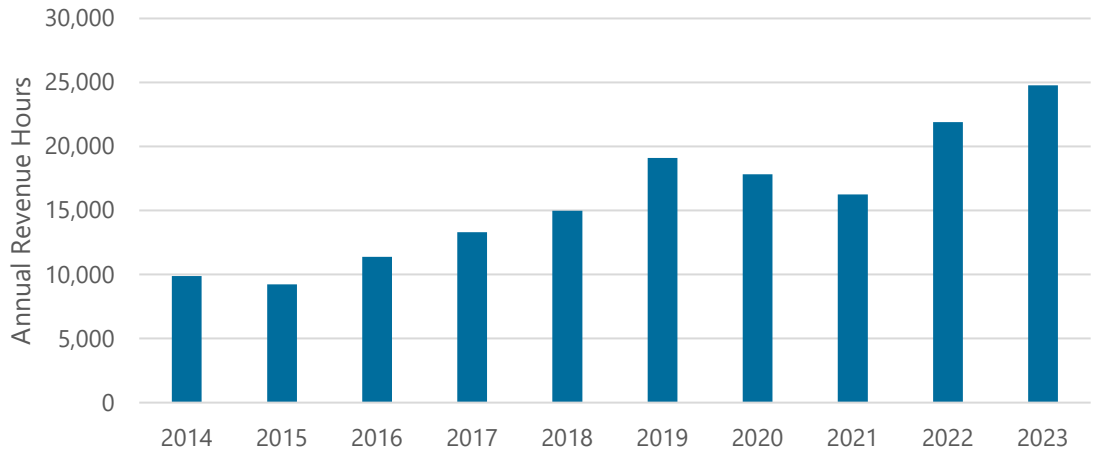
Figure 3-29 Historical Paratransit Ridership



Source: MUTD, 2023

Revenue hours represent the amount of time buses operate in service, including recovery time and operator breaks at the end of each trip. Figure 3-30 illustrates historical paratransit vehicle revenue hours. Between FY 2013 and 2019, revenue hours increased an average of 15% annually. Between FY 2019 and 2021, MUTD experienced a 15% drop in revenue hours due to the Covid pandemic. However, between FY 2021 and 2023, revenue hours rebounded with a 52% increase. In FY 2023, MUTD operated 24,785 revenue hours, an approximate 30% increase from pre-pandemic levels.

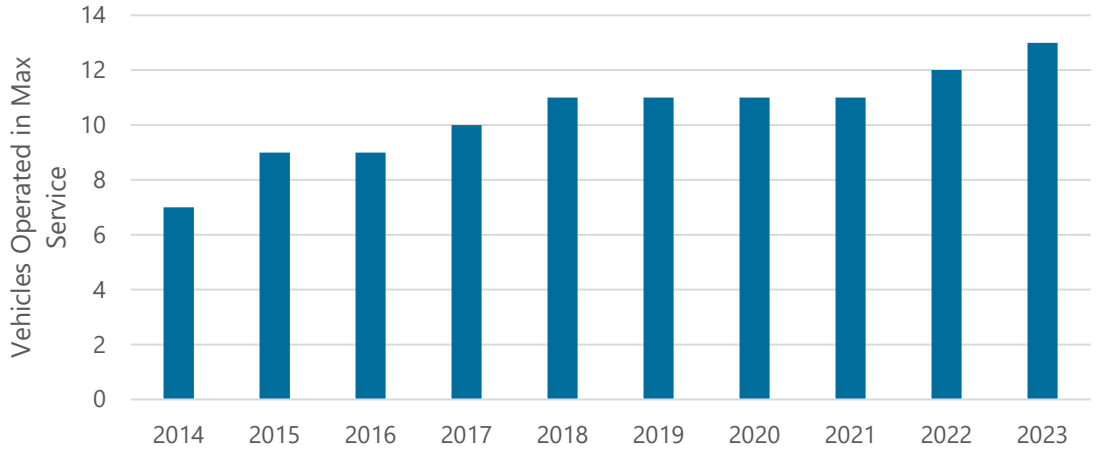
Figure 3-30 Historical Paratransit Vehicle Revenue Hours



Source: MUTD, 2023

Vehicles operating in max service is the maximum number of vehicles needed at a single time to provide peak service. As seen in Figure 3-31, paratransit vehicles operated in max service increased between FY 2013 and 2018 before plateauing for four years. One additional vehicle per year was added to max service in FY 2022 and 2023.

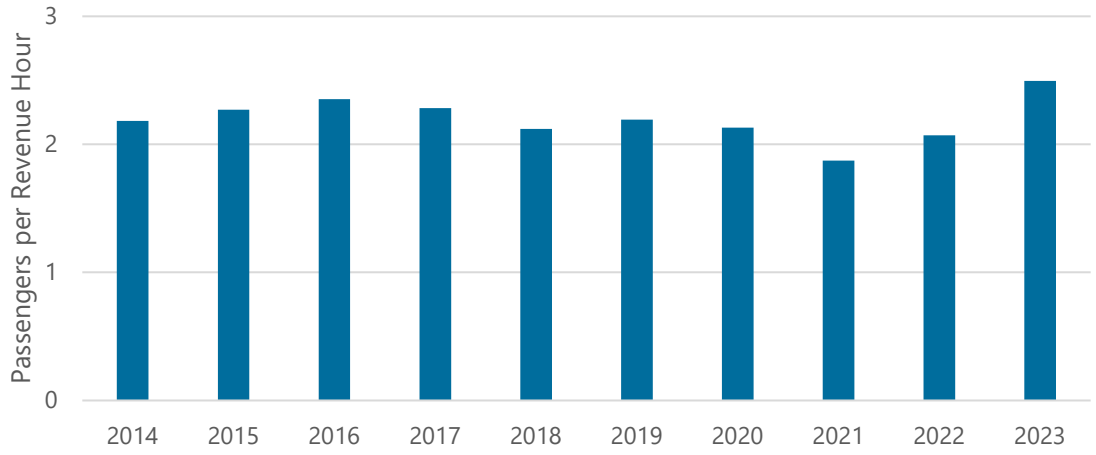
Figure 3-31 Historical Paratransit Vehicles Operated in Max Service



Source: MUTD, 2023

The productivity of service is typically measured in terms of passengers per revenue hour. Service productivity (Figure 3-32) has hovered between 2.1 to 2.3 passengers per revenue hour over the last decade. In FY 2021, ridership fell slightly below 1.9 passengers per revenue hour. In FY 2023, ridership rebounded to 2.5 passengers per revenue hour.

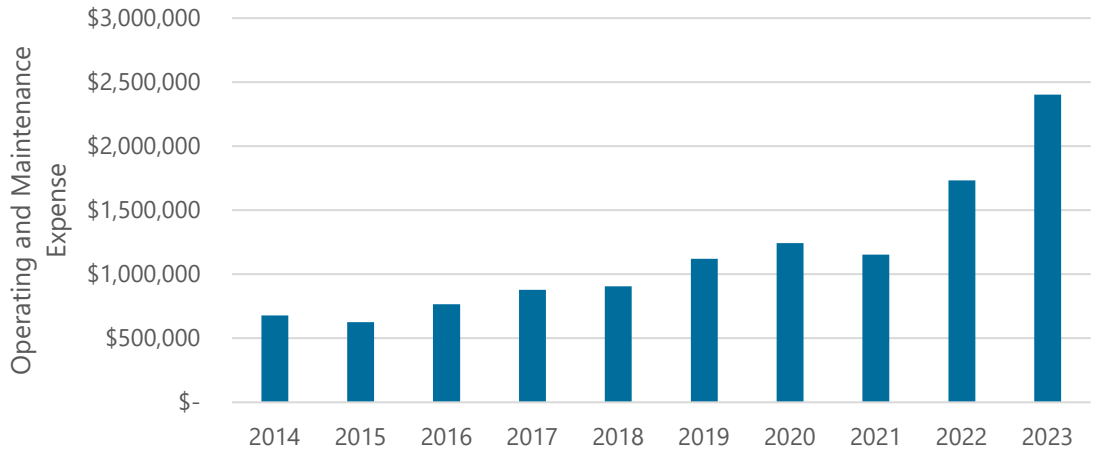
Figure 3-32 Historical Paratransit Productivity



Source: MUTD, 2023

Figure 3-33 shows the annual operating and maintenance (O&M) costs for the paratransit service, not adjusted for inflation. Prior to the pandemic, costs rose an average of 11% per year. A 7% decline occurred in FY 2021, the only year that costs did not increase. In the following two years, expenses increased by an average of 45% per year.

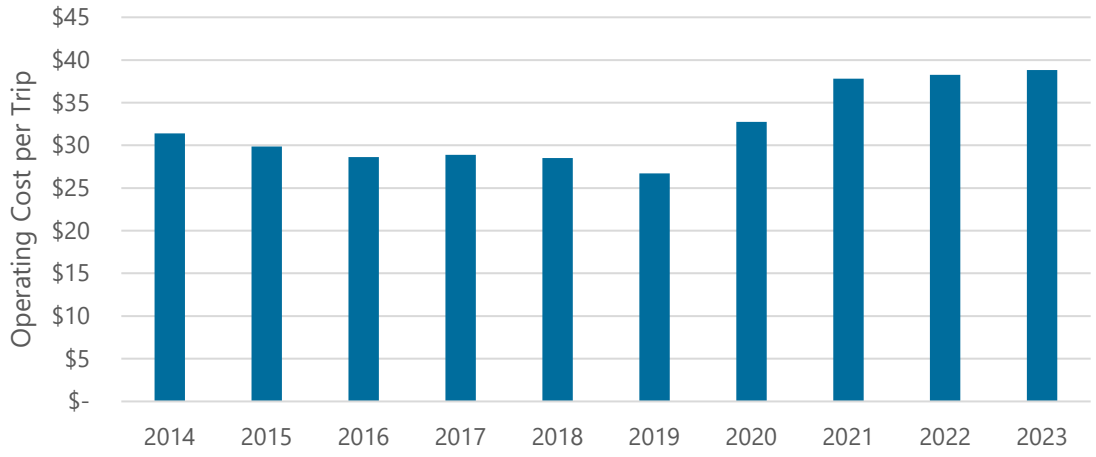
Figure 3-33 Historical Paratransit Operating and Maintenance Expenses



Source: MUTD, 2023

Figure 3-34 normalizes O&M costs by number of passengers, or trips. Between FY 2013 and 2019, cost per trip decreased by an average of $1, or 3% per year, from $31 in FY 2013 to $26 in FY 2019. Cost per trip increased significantly during the pandemic, averaging a $5.50 increase per year from FY 2019 to 2021. Since FY 2021, cost per trip has plateaued at about $39, a 44% increase from pre-pandemic levels.

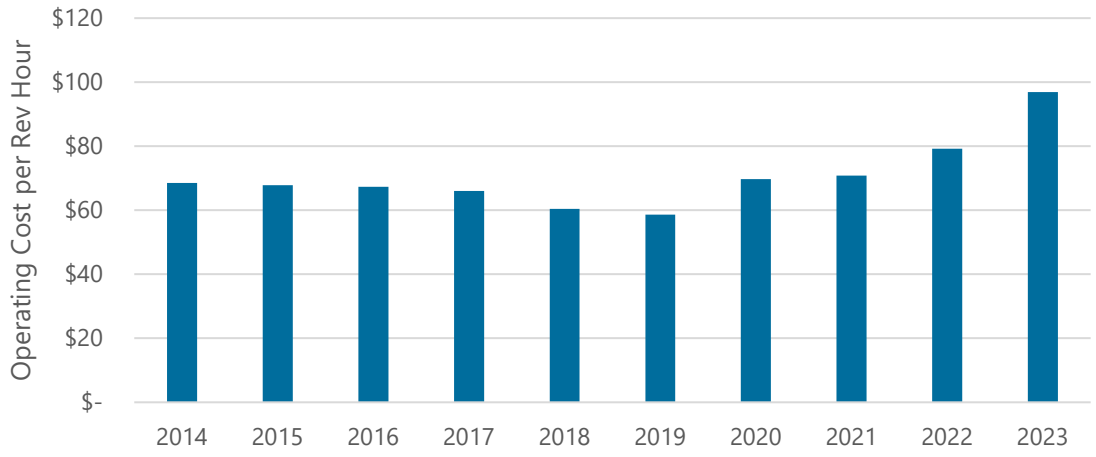
Figure 3-34 Historical Paratransit Cost per Trip



Source: MUTD, 2023

Figure 3-35 normalizes O&M costs by revenue hours. Between FY 2013 and 2019, cost per revenue hour declined by an average 2% annually. Cost per revenue hour since pre-pandemic levels in FY 2019 has increased 64%, an average 16% annually.

Figure 3-35 Historical Paratransit Cost per Revenue Hour



Source: MUTD, 2023

Fleet

MUTD has 30 vehicles in its fixed-route fleet, 12 of which are battery electric. Figure 3-36 lists the complete fleet roster, along with age and replacement year.

Figure 3-36 Fixed-Route Fleet

Number of Vehicles	Year	Make	Replacement FY	Propulsion Type
1	1996	Chance	2024	Diesel
10	2009	Gillig	2025	Diesel
4	2010	Eldorado	2024/2025	Diesel
3	2014	Gillig	2029	Diesel
6	2019	Proterra	2031	Battery Electric
4	2021	Gillig	2033/2034	Battery Electric
2	2021	New Flyer	2034	Battery Electric

Source: MUTD, 2023

MUTD has 16 vehicles in its paratransit fleet. Figure 3-7 lists the complete fleet roster, including age and replacement year.

Figure 3-37 Paratransit Fleet

Number of Vehicles	Year	Make	Replacement Year	Propulsion Type
2	2014	Chevrolet	2022	Diesel
1	2018	Champion	2025	Diesel
3	2018	Dodge	2025	Diesel
4	2019	Dodge	2027	Diesel
4	2021	Elkhart	2027	Diesel
2	2022	Ford	2030	Diesel

Source: MUTD, 2023

Facilities

MUTD operates one major transit hub, where riders can transfer between routes: the Downtown Transfer Center, located at 200 W Pine St. All routes except Route 8 use the Transfer Center as an end-of-line terminus. MUTD also operates an administrative and maintenance facility at 1221 Shakespeare Street.

Key Findings

- Historical trend data portray where MUTD has been and the direction it is heading.
- Fixed Route
  - **Ridership on the fixed-route network was steady before Covid** and is rebounding back to pre-pandemic levels. MUTD's 2023 ridership totaled 1.09 million boardings, approximately 70% of MUTD's 2019 annual ridership. 2024 ridership has recovered further to approximately 80% of 2019's annual ridership.
  - **Due to various service implementations, revenue hours increased in 2023 as follows**:
    - Earlier and later weekday service
    - All-day weekday service on two new routes
    - Longer Saturday service
    - New Sunday service
  - **Productivity has been declining since the Covid pandemic** and in 2023 it counted 15 passengers per revenue hour, less than half of what it was in 2019. The Sunday and longer hours service expansion implemented in 2023 contribute in part to the productivity decrease, though time for ridership numbers to mature is required.
  - **Operations and maintenance costs have been increasing** over the last decade, though the highest increases have occurred during the last three years.
  - **Ridership on MUTD's paratransit service has exceeded pre-pandemic levels**. Despite a ridership drop in 2020 and 2021, ridership rebounded in the following years, increasing 48% increase from pre-pandemic levels in 2023.
  - **Productivity is relatively stable**, with numbers holding steady around two passengers per hour for the last decade, aside from a dip during the Covid pandemic.

  - Without adjusting for inflation, **operating and maintenance expenses have drastically increased**; expenses in 2023 were twice as high as expenses in 2019.
- Based on 2022 average weekday ridership numbers, the **top three ridership routes** in the network are **Routes 1, 2**, **and 6**.
- The weekday systemwide temporal distribution of ridership shows an 8 a.m. peak and a 3 p.m. peak, with ridership generally steady during the middle of the day. This ridership pattern supports the daytime service schedule MUTD currently operates.
- The five **most productive routes** in the MUTD system based on average weekday boardings per revenue hour are **Routes 1, 2, 3, 4 and 14.**
- The high-frequency (15-minute) service occurs on the **strongest ridership corridors.** Some of the high ridership corridors in the system include south Johnson Street, South Avenue, Russell Street, and Broadway Street.
- **Ridership patterns suggest latent demand for more weekend service.** Routes 1, 2, 7, and 12 run hourly service on weekends but experience higher productivity levels than on weekdays when service operates at 30-minute headways or better during peak hours.
- Out of the 346 stops in the system, 16% have shelters, and 19% have either Simme-Seats or benches. Investing in shelters and seating presents an opportunity to improve rider experience.

4 PUBLIC OUTREACH

MUTD engaged in continuous outreach with the community throughout this project to ensure the Transit Service Plan reflects the region's priorities and is supported by the community. MUTD worked with the MPO to conduct outreach jointly, gathering input from Missoula area residents, employees, students, and visitors for inclusion in both the Transit Service Plan and the LRTP. There were three main phases of community outreach:

- **Phase I: Listen and Learn** about the community's challenges, hopes, and dreams for transit (April to July 2024)
- **Phase II: Create and Apply** potential transit concepts and garner feedback (August to September 2024)
- **Phase III: Integrate and Refine** the plan based on Phase II feedback and present how it was incorporated into the plan (December 2024)

STAKEHOLDERS

MUTD and the MPO collaborated on gathering input from key stakeholders for inclusion in both the Transit Service Plan and the LRTP. A diverse set of stakeholders, consisting of four established advisory groups (committees established by MUTD and the MPO) and 25 community organizations were engaged throughout the project. The list of stakeholders is included in Appendix B.

PHASE I OUTREACH

Phase I outreach spanned from April to June 2024 and focused on listening to the community's transportation concerns and hopes for the future. This phase aimed at creating awareness of the Transit Service Plan and LRTP planning efforts as well as gathering information on transportation needs/challenges and desired improvements. A variety of engagement activities were executed in Phase I, including:

- Establishing two project webpages to serve as central information hubs, one for the Transit Service Plan, and one for the LRTP.
- Conducting discussion group meetings with organizations like the Diversity Advisory Council and the Midtown Implementation Committee. The project team conducted five advisory group meetings and six community partnership meetings.
- Tabling during events at UM and the farmers market.

The feedback gathered from Phase I was used in the development of potential transit improvements that were presented to the public in Phase II.

Additional detail on Phase I outreach is included in the Outreach Summary as Appendix B.

PHASE II OUTREACH

Phase II outreach was conducted from July to September 2024 and focused on soliciting feedback from the community on the proposed recommendations and potential projects. Outreach activities in this phase included:

- Attending seven general and neighborhood meetings, such as the Bonner Milltown Community Council and River Road Neighborhood Council.
- Holding a virtual stakeholder workshop with community organizations in September to discuss potential transportation improvements.
- Conducting one-on-one meetings with eleven community groups like Missoula County Public Schools, Partnership Health Center, and Missoula Aging Services.
- Tabling at 16 local schools and community events.

- Holding a public open house in September where approximately 48 attendees engaged with interactive stations, comment cards, and one-on-one discussions with planners.
- Conducting an online public survey allowing the community to provide feedback on the proposed recommendations and potential projects. Altogether, 640 people participated. Survey results are included in Appendix C.

Additional detail on Phase II outreach is included in the Outreach Summary as Appendix B.

Key Takeaways from Phase II Outreach

- There was strong support for targeted frequency improvements on:
  - Route 3 in Northside
  - Route 4 to East Missoula
  - Routes 1 and 2 on weekends
- Route 15 to Sxʷtpqyen was repeatedly pointed out as a great new service.
- On-demand service received a lukewarm response because:
  - People were uneasy about using a new type of service.
  - People worried about increased travel times, since it was portrayed as a replacement for Routes 9 and 12.
- Route 12 South Hills riders did not support replacing the route with on-demand service or using Route 7.

Feedback received during this outreach phase was used to refine the recommendations for developing a final transit network.

PHASE III OUTREACH

Phase III outreach, summarizing feedback gathered from the community during Phase II and presenting the final near- and long-term plan recommendations, was conducted in December 2024.

Outreach activities in this phase included:

- A virtual stakeholder workshop with community organizations to preview the presentation content for presenting at the virtual public meeting.
- A virtual public meeting to share the feedback gathered from the community during Phase II and present the final near- and long-term transit recommendations. A video of the presentation was uploaded to the Engage web page for individuals who could not attend the meeting.

Additional detail on Phase III outreach is included in the Outreach Summary as Appendix B.

5 TRANSIT SERVICE PLAN

The Transit Service Plan's recommendations are organized into two phases: near term and long term. The **near-term plan** focuses on reducing route duplication and meeting emerging ridership trends. The near-term network will serve the same areas as it does today, and is cost-neutral, meaning recommendations can be implemented without increasing Mountain Line's operating budget.

The **long-term plan** calls for an approximate 50% increase in 2025 current service levels. The plan would help meet the travel demands of a rapidly growing region by improving service span (the length of service throughout the day), frequency, and travel speeds, and by providing new service in up-and-coming dense employment centers and housing developments. The plan assumes Mountain Line would develop and implement capital projects to expand capacity for providing service and improve speed and bus reliability.

Recommended goals are described below.

Update and Streamline the Route Network

The recommendations realign bus routes to better serve the needs of existing and potential transit riders by improving access to key destinations and reducing travel times. This includes greater frequency in high-ridership/high-density areas and direct service from Franklin to the Fort to downtown Missoula, and service to Sx̌tpqyen.

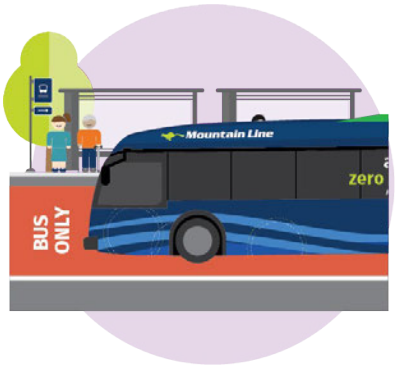
Strategically Expand Bus Service

The recommendations extend routes to serve emerging destinations, offer longer hours, and more frequent service on weekdays and weekends. Four new corridors feature frequent service, every 15 minutes or better.

Promote Transit-Supportive Land Uses

Missoula is growing. Redeveloping concentrations of population and employment can support additional transit service and reduce car traffic. The plan recommends new fixed-route service to the Sawmill District and Sx̌tpqyen, as well as improved service to the rapidly redeveloping Midtown.

Invest in Capital Projects That Improve Speed and Reliability



The long-term recommendations target improvements such as bus lanes, improved stops, transit centers, and transit signal priority to make bus travel times more competitive with private vehicles. Improvements include:

- The new **Brooks Street BRT corridor**, offering fast, frequent, and reliable service between Downtown and Southgate Mall.
- The new **transit center near Southgate Mall** would create better connectivity and transfers between routes, including the new BRT service.
- **Completing the MOAB by 2029 establishes a storage/maintenance facility that supports a larger fleet** delivering more peak service.

This chapter includes the following sections:

- **Guiding Principles for Improvements** summarizes the guiding principles for the near- and long-term plans as well as the two preliminary scenarios that were developed as a starting point for discussion and public input.
- **Near-Term Plan** documents the near-term redesigned network for improving service based on travel patterns and community feedback while maintaining existing network coverage, costs, and capacity.
- **Long-Term Plan** documents the long-term redesigned network, guided by community needs and service opportunities, and bolstered by capital improvements.
- **Community Partnership Opportunities** documents a list of transit services established through strategic partnerships with various public and private partnerships. Though these services are tangentially aligned with MUTD's primary services, they require partnerships to justify implementation.

GUIDING PRINCIPLES FOR IMPROVEMENTS

The goals of the Transit Service Plan are multi-fold. In the near term, changes are designed to maximize mobility within today's budget – adjusting service to match today's travel patterns. In the long term, recommendations are designed to help MUTD keep pace with regional growth, and set a vision for a transformative mobility future.

This section describes the service design considerations for each timeframe.

The **near-term** plan seeks to improve service based on travel patterns and community feedback while maintaining existing network coverage, costs, and capacity. The recommendations should:

- **Remain cost-neutral**, since increased funding in the near future is unlikely
- Ensure that there is **no loss in coverage**
- **Not increase service during peak times**, because MUTD's current facility cannot accommodate any more buses

The **long-term** plan's service improvements will continue to provide access for mobility challenged populations, and focus on improvements that can attract a greater market share. The plan includes an expansion of new local fixed-route and on-demand transit to serve areas that do not currently have access to MUTD service; additional frequency on existing bus routes to make transit a more competitive option for travel; capital investments to support additional service; and some restructuring to reduce service duplication.

Key components of the long-term plan include:

- BRT service from Downtown to Southgate
- More frequent weekday service:
    - 15-minute service on key corridors, including West Broadway Street, Brooks Street, Arthur Avenue, South Avenue, Higgins Avenue, and Johnson Street
- Three new routes:
    - New Northside to the airport route
    - New service on Russell Street
    - New connection from Franklin to the Fort to Southgate Mall and Walmart
- On-demand service expansion if the pilot proves successful
- More frequent weekend service:
    - Weekday 15-minute headway routes should travel on 30-minute headways during the weekend.
    - **A larger fleet capacity**, through completing the MOAB by 2029. MUTD would then have the capacity to store/maintain more vehicles and subsequently deliver more peak service.
    - **More funding** than the agency is currently receiving
    - **A new Midtown transit center at Southgate Mall** would improve connectivity and transfers between routes, including a new BRT service
    - Other key considerations include prioritizing improvements, supporting smart growth, and serving people with mobility challenges.

Development of Recommendations Process

Two near-term, cost-neutral scenarios were developed as a starting point for discussion and public input. The networks incorporated different strategies for improving service. The first scenario focused on introducing new on-demand transit to replace fixed-route service in neighborhoods with low ridership. The second scenario focused on improving weekend and off-peak frequencies for the core, high ridership routes.

Based on public and feedback from the board members, the final near- and long-term networks were combined into a hybrid of these two initial scenarios, integrating the most popular elements of each scenario into the final recommendations.

BENEFITS OF TRANSIT IN MISSOULA

Mountain Line provides safe, sustainable, and innovative transportation solutions. By more than doubling ridership in the past 15 years, Mountain Line has played a major role in accommodating new growth, reducing traffic congestion, and mitigating air quality. Mountain Line has also helped Missoula households reduce transportation costs by introducing a system-wide zero-fare service as a hedge against skyrocketing local housing costs.

Growth is projected to continue. Mountain Line is an important way to facilitate Missoula's mobility and provide options for the thousands of new residents. Transit will also play a crucial role in helping the city achieve affordability, equity, and sustainability goals.

A robust transit system makes Missoula a better place to live and visit by supporting economic growth and increasing access to opportunity.

NEAR-TERM PLAN

Overview

The near-term plan seeks to improve service based on travel patterns and community feedback while maintaining existing network coverage, costs, and capacity. In other words, the plan seeks to improve service levels in neighborhoods and corridors experiencing or expecting high transit ridership and demand. The near-term plan describes service changes that can be built on with additional improvements in the long-term plan. Figure 5-1 briefly describes the changes.

Figure 5-1 Near-Term Network Changes

Route	Cost-Constrained Near-Term Changes
1	No Change
2	No Change
3	Improve weekday frequency to 30 minutes for 6 hours.
4	Improve weekday frequency to 30 minutes for 6 hours from Downtown to East Missoula.
5	No Change
6	No Change
7	Make small route adjustments to improve speed and reliability.
8	Restructure to directly connect Downtown with the Sawmill District and north Franklin to the Fort. Operate every 30 minutes on weekdays. Implement new hourly Sunday service. Rename to Route 10.
9	No Change
11	Make small route adjustments along the North Reserve route to improve reliability.
12	Operate hourly seven days a week.
14	No Change

Figure 5-2 illustrates the cost-constrained, near-term plan network.

Figure 5-2 Near-Term Plan Network

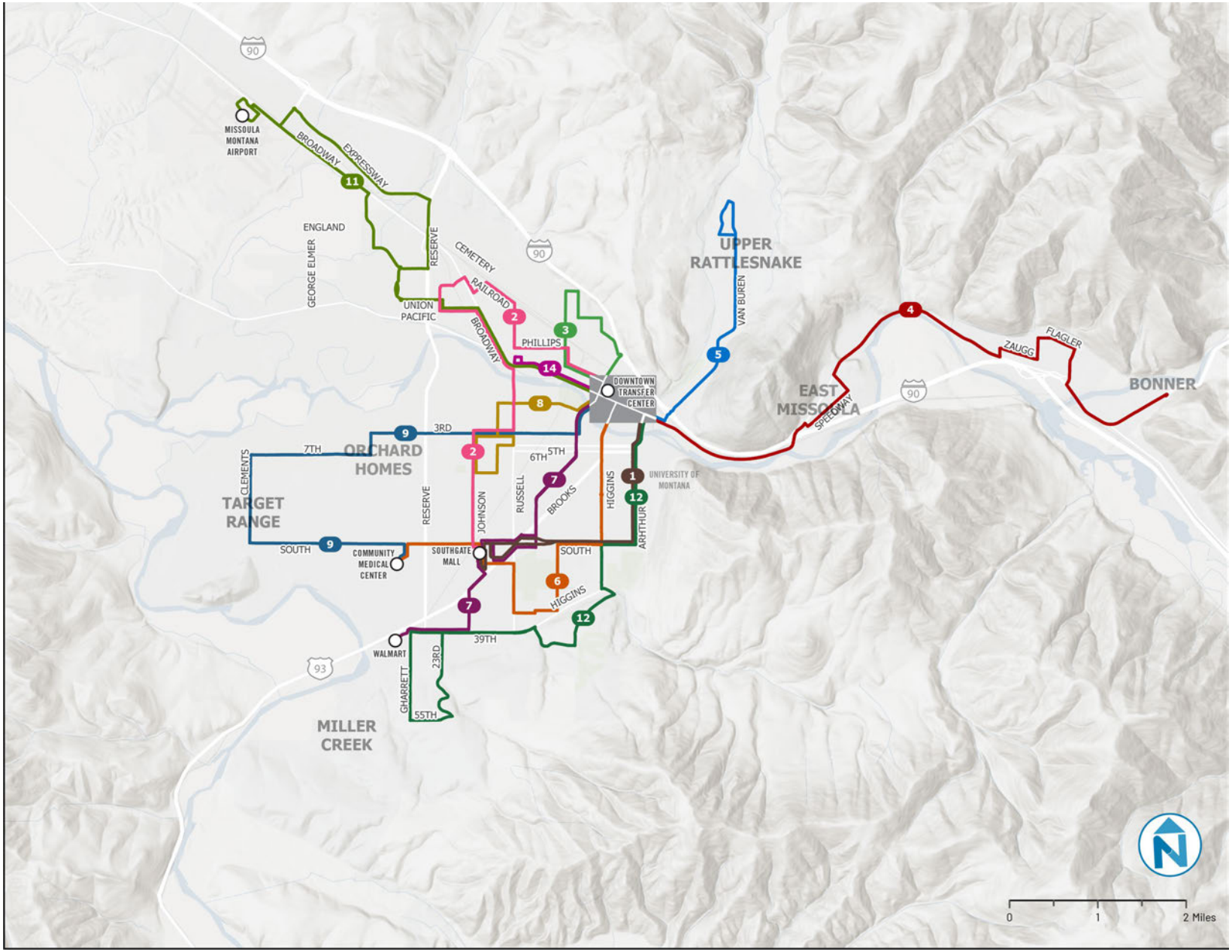
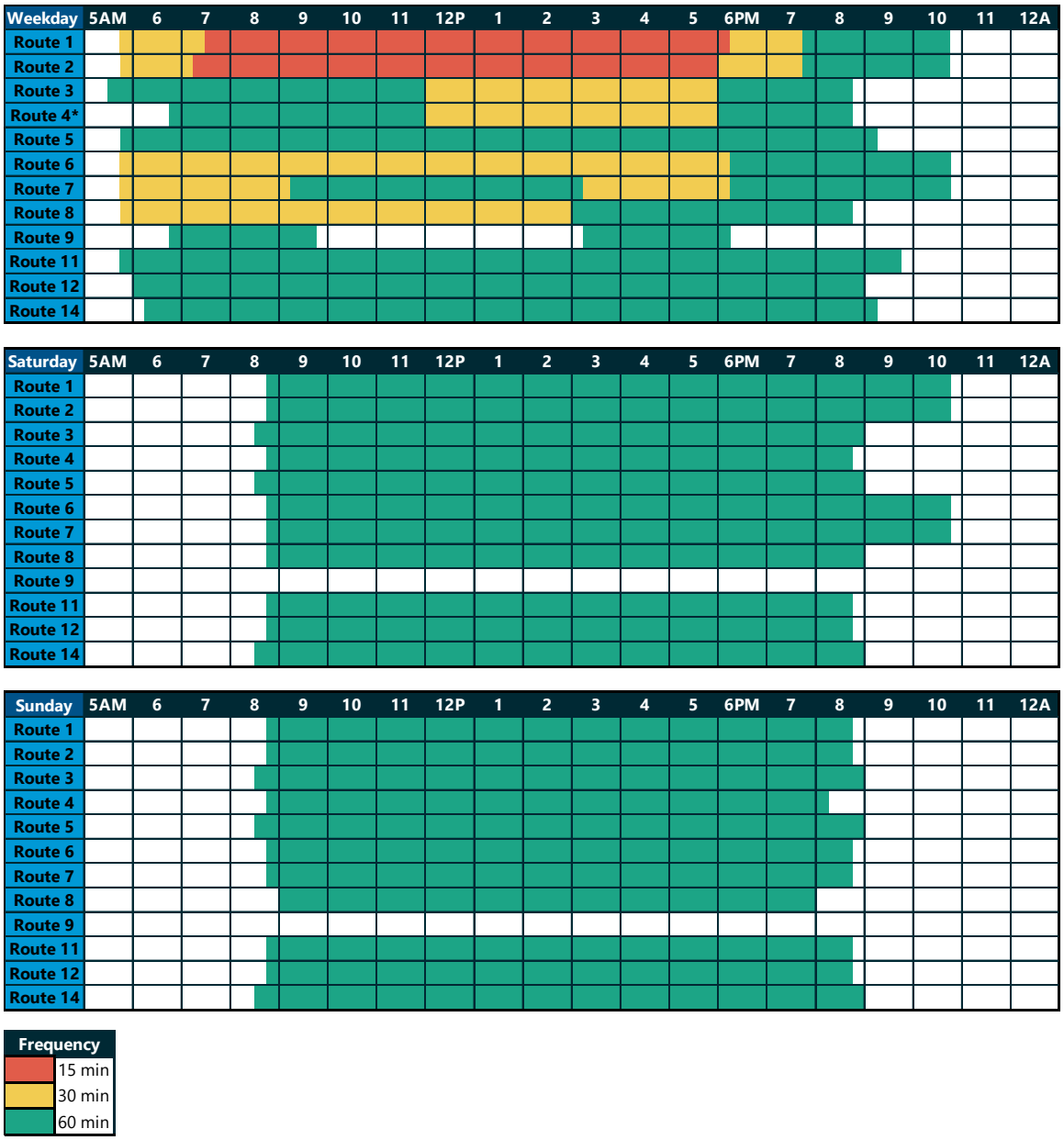


Figure 5-3 illustrates the frequencies and spans of the near-term plan network.

Figure 5-3 Near-Term Network Service Span and Frequency



Note: *On weekdays, Route 4 operates on a 30-minute frequency only to East Missoula. Service to Bonner remains hourly.

The cost-constrained, near-term plan does not require any additional operating dollars, new fixed-route vehicles, or increased bus capacity. Figure 5-4 lists the operating requirements for the near-term network by fixed-route service.

Figure 5-4 Near-Term Network Fixed-Route Operating Requirements

	Existing		Near-Term		Change	
Route	Annual Revenue Hours	Peak Vehicles	Annual Revenue Hours	Peak Vehicles	Annual Revenue Hours	Peak Vehicles
1	11,800	8	11,800	8	0	0
2	17,400	0* (Interline 1 & 2)	17,400	0* (Interline 1 & 2)	0	0
3	1,400	1*	2,100	2**	+700	+1
4	5,000	1	5,800	1** (Interline 3 & 4)	+800	0
5	2,700	0* (Interline 3, 5, & 14)	2,700	0* (Interline 3, 5, & 14)	0	0
6	8,900	2	8,900	2	0	0
7	7,300	2	7,300	2	0	0
8	5,200	2	4,800	1	-400	-1
9	1,500	1	1,500	1	0	0
11	5,400	1	5,400	1	0	0
12	6,200	2	5,100	1	-1,100	-1
14	1,300	0* (Interline 3, 5, & 14)	1,300	0* (Interline 3, 5, & 14)	0	0
Total	74,100	20	74,100	19	0	-1

Note: *Interlining is a practice that combines two or more independent routes into one operational schedule, eliminating extended periods of down time. This requires vehicles to be shared between routes. In the existing and Near-Term networks, a vehicle operating on Route 1 is interlined with Route 2, and a vehicle operating on Route 3 is interlined with Routes 5 and 14.

Note: **In the Near-Term network, a vehicle operating on Route 3 will be interlined with Route 4 and provide increased service frequency to East Missoula.

The following sections describe the near-term plan's minor and major routing changes, service frequency and span changes, four additional different low-cost improvements, and implications for paratransit service.

Near-Term Plan Route Changes

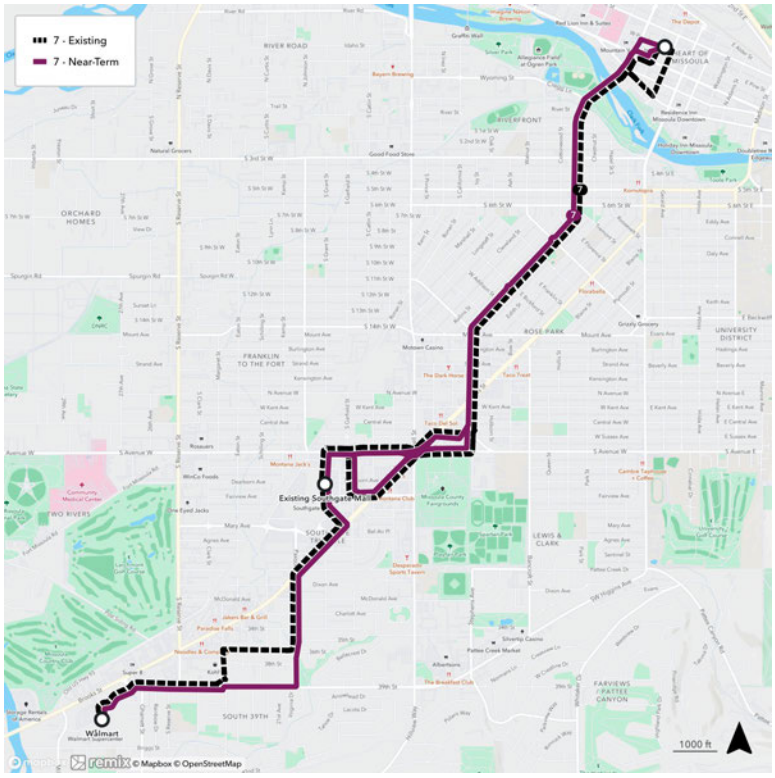
The near-term plan recommends three route alignment changes. Recommended changes to Routes 7 and 11 are designed to improve speed and reliability. Recommended changes to Route 8 respond to shifted travel patterns and new development.

Route 7 – Streamline Alignment

The near-term plan recommends two route adjustments for Route 7 to improve speed and reliability. The recommended Route 7 alignment is shown in Figure 5-5.

- **Streamline alignment between Southgate Mall and Walmart**. The first change realigns service on 36th Street, a neighborhood street with no bus stops. Route 7 could directly serve Walmart by using 39th Street between Dore Lane and Paxon Street. All existing riders would remain within walking distance of a stop.
- **Minimize turns near Downtown Transfer Center**. The second recommendation is for Route 7 to directly serve the Downtown Transfer Center without deviating onto Front Street. This impacts approximately two daily riders but improves directness and reliability for all inbound riders.

Figure 5-5 Near-Term Network Route 7

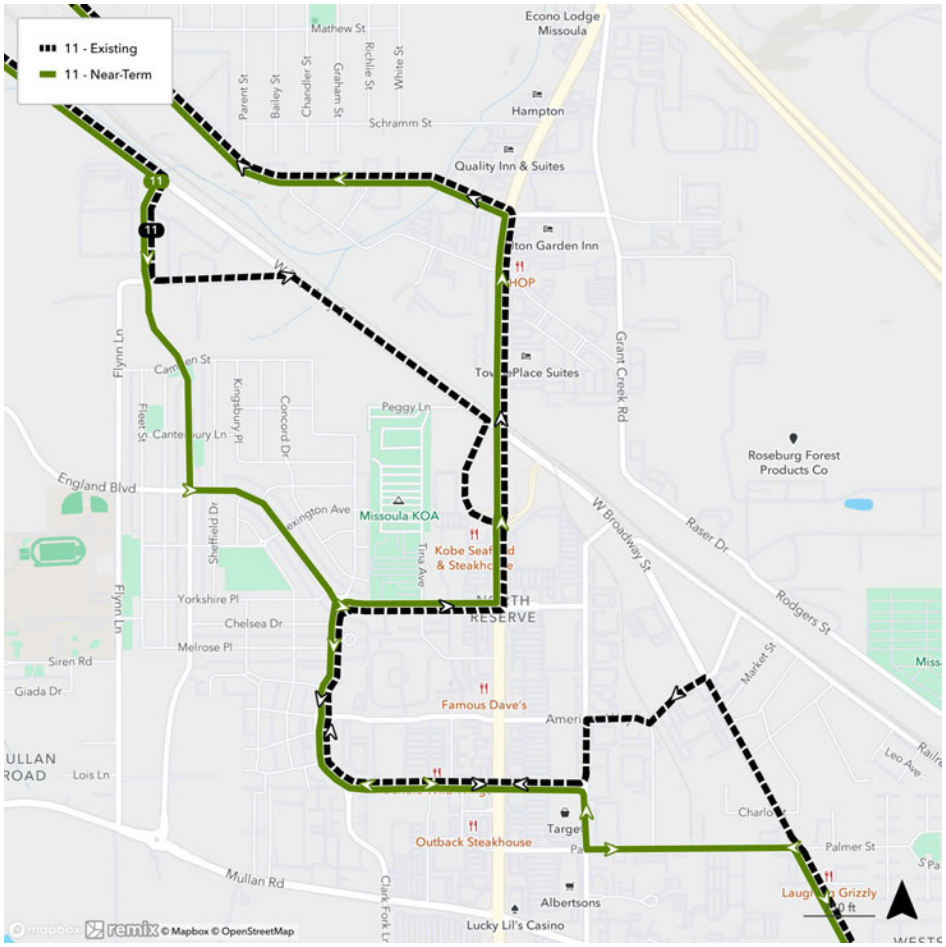


Route 11 – Streamline Alignment

Route 11 is one of MUTD's longest routes, so it is difficult to operate a round trip reliably. Two recommendations are designed to improve route directness and reliability. Figure 5-6 depicts the recommended Route 11 alignment.

- **Minimize left turns in North Reserve**. Route 11 currently operates via West Broadway Street, Latimer Street, American Way, and Great Northern Avenue, performing several unprotected left turns that result in delays. Route 11 should be streamlined to operate via Palmer Street and Great Northern Avenue.
- **Avoid heavily trafficked streets**. The second involves operation in the southbound direction. Currently, Route 11 returns to West Broadway Street after serving the VA Clinic. This exposes it to North Reserve Street traffic. The recommendation is for inbound Route 11 trips to remain on Mary Jane Boulevard after serving the VA Clinic and serve England Boulevard. This change would also provide greater coverage in the Sx̌tpqyen neighborhood.

Figure 5-6 Near-Term Network Route 11

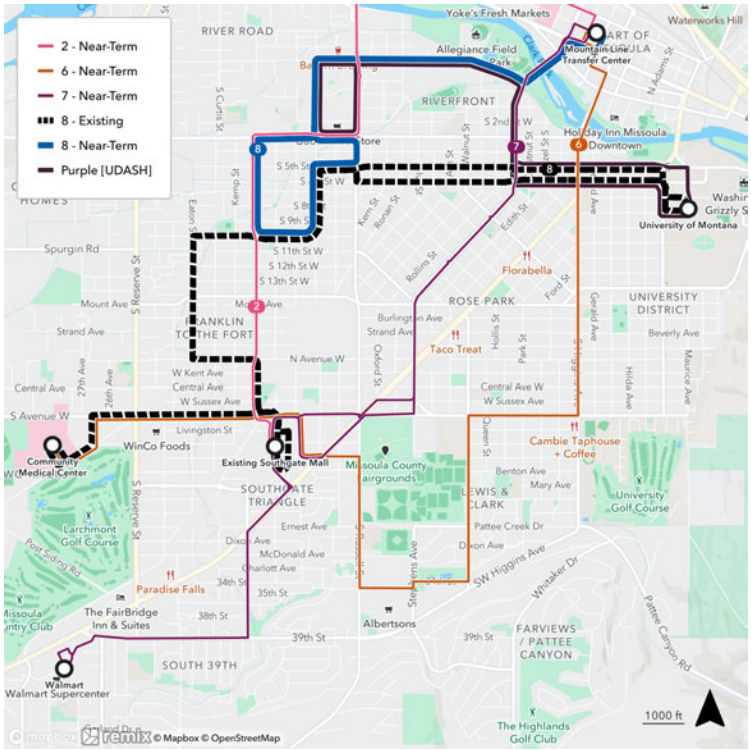


Route 8 – Restructure Route 8 (Re-name Route 10)

Route 8 has been one of the least productive routes for years because its alignment duplicates the existing UDASH campus shuttle service, and Routes 2, 6, and 9. Route 8, in its current form, does not meet major travel patterns in Missoula. In addition, planned infrastructure improvements are opening new opportunities for fixed-route service on corridors previously too hazardous or impractical to access with transit buses.

- **Route 8 should be redesigned to better serve Missoula's development patterns**. The revised Route 8 should connect downtown Missoula to the Sawmill District and the northern part of the Franklin to the Fort neighborhood. Route 8 should also operate every 30 minutes all day, which is more convenient for existing and projected customers. This recommendation would also address a major gap in the current network: all-day direct service from parts of Franklin to the Fort and the Sawmill District's high-density housing to downtown Missoula. This assumes a planned signal at Cregg Lane/South Orange Street is operational.
- **Most existing Route 8 riders would have an alternative**. Between Community Hospital and Southgate Mall, current Route 8 riders can use Route 6. Between Southgate Mall and Wyoming, current Route 8 riders can walk to Route 2. On South 5th/6th Streets, current riders can walk to stops for Routes 6 and 7. Figure 5-7 shows these alternatives.

Figure 5-7 Near-Term Network Route 8



Service Frequency Changes

Public outreach surveys revealed that frequency additions were one of the most highly demanded improvements.

The near-term plan recommends frequency changes on three routes: improved frequency on Routes 3 and 4 and reduced frequency on Route 12.

Route 3 Northside – Improve Frequency

Route 3 is currently one of MUTD's more productive routes. Missoula's Northside is adding hundreds of new multi-family housing units, including below market rate units. This will increase demand for frequent service in this area. To meet this current and projected demand, Route 3's frequency should be upgraded from 60-minute service to 30-minute, all-day service. However, to account for fiscal constraints, the near-term recommendations are to add frequency to a six-hour span between noon and 6 p.m.

Route 4 – Improve Frequency between Downtown and East Missoula

Route 4 is one of MUTD's most productive routes, and experiences capacity issues on certain trips. Currently, Route 4 operates hourly. East Missoula is adding additional high-density housing and is often seen as a lower-cost alternative to living in Missoula.

Route 4 service between East Missoula and downtown Missoula should be upgraded to 30-minute service. The frequency improvement is warranted all day on weekdays, but the fiscally constrained, near-term recommendations are to run it for a six-hour span, between noon and 6 p.m. Existing Route 4 service to Bonner will remain as is, but "short-turn" trips will be added every half hour between today's Route 4 hourly trips, on an alignment that only travels to East Missoula. These "short-turn" trips could be called the Route 4S to reduce customer confusion about where the route terminates.

Route 12 – Reduce Frequency due to Lower Ridership

Today, Route 12 operates on a 30-minute peak frequency between South Hills and Downtown. The highest ridership segment on Route 12's alignment is duplicated by UDASH service, and Routes 1 and 6. Additionally, ridership on the unique South Hills segment has declined from previous years. In response to lower ridership, Route 12's peak frequencies should be reduced from 30-minute service to hourly service.

Mid-Term Additional Improvements

The mid-term plan includes four options for additional improvements. Implementation is contingent upon funding availability. Each improvement is a unique, minimal-expense opportunity to increase ridership, span of service, or geographic coverage. The proposals can be implemented independently from each other and without additional base capacity. The recommendations and their estimated annual revenue hours are listed in Figure 5-8. The options are listed in order of priority, based on public outreach. More information on each option is available after the table.

Figure 5-8 Mid-Term Network Additional Improvements

Mid-Term Additional Improvement Recommendation	Estimated Annual Revenue Hours
Operate Route 4 between East Missoula and Downtown and Route 3 every 30 minutes on weekdays all day Complements near-term frequency improvements on these routes by extending 30-minute service to a 12-hour span	1,400
Operate Routes 1 and 2 every 30 minutes on weekends Improves frequency on most utilized weekend routes and improves transfers to all routes on weekends	1,300
Serve the growing Sxʷtpqyen neighborhood with a new Route 15 Add regularly scheduled transit service to connect a growing, dense development to downtown Missoula	4,600
Implement the Linda Vista/Target Range On-Demand Zone as a pilot program Test viability of on-demand service to areas that have been traditionally difficult to serve with regular bus service	3,700

Routes 3 and 4 – Increase Frequency on Weekdays

The first priority is to increase frequencies on Routes 3 in Northside and 4 to East Missoula (service to Bonner would remain hourly) on weekdays. The near-term, cost-constrained changes add six hours of 30-minute service on these routes, extending the service window another five hours, making 30-minute service available between 7 a.m. and 6 p.m.

This recommendation would require approximately 1,400 extra annual hours in addition to the near-term, cost-constrained changes. If the changes are implemented, ridership on Route 3 and Route 4 between Downtown and East Missoula is likely to double.

Routes 1 and 2 – Increase Frequency on Weekends

The second priority is to increase frequencies on Routes 1 and 2 on weekends. The highest ridership routes are Routes 1 and 2 and experience the highest number of transfers in the network. On weekends during the day, hourly service is insufficient to accommodate many of the transfer patterns. Improving weekend frequency on Routes 1 and 2 to 30 minutes between 9 a.m. and 5 p.m. will also improve ridership on other routes by creating better connections.

The increased frequency would require 1,300 additional annual revenue hours. If the improvements are implemented, weekend ridership on Routes 1 and 2 is likely to double.

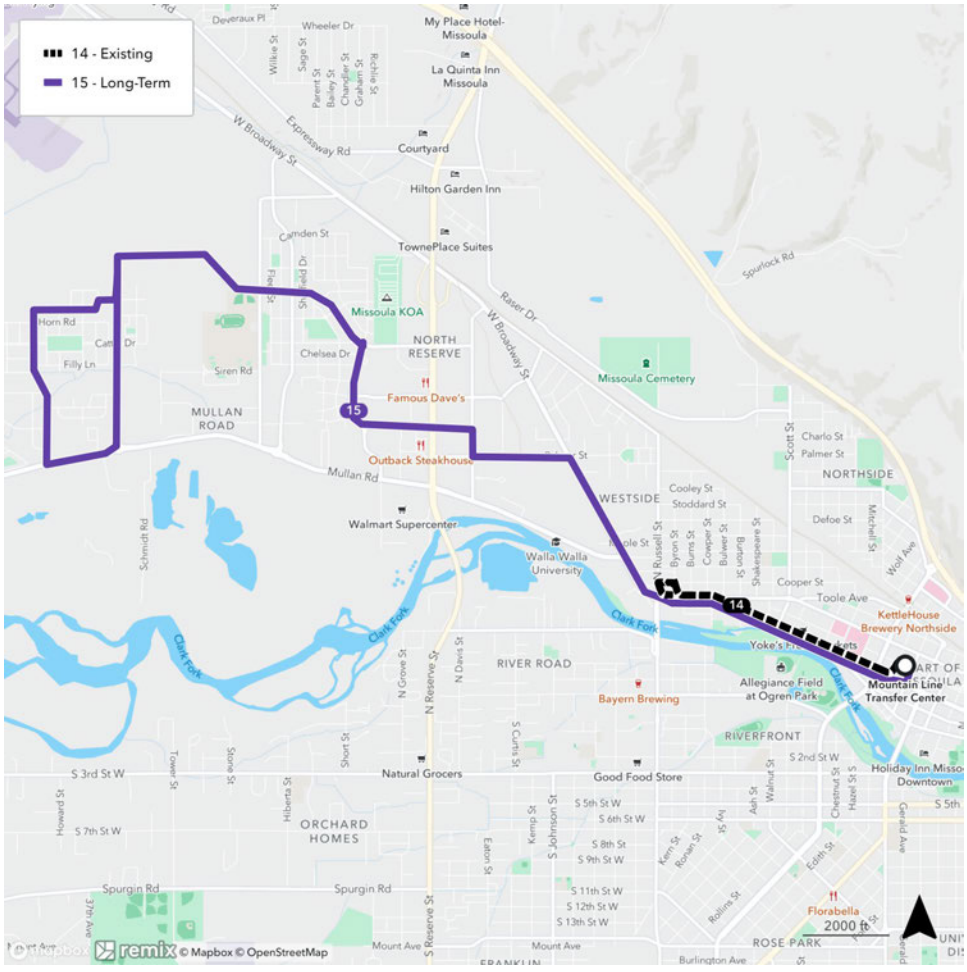
Route 15 - Serve the growing Sxʷtpqyen neighborhood

The third priority is to implement Route 15 – Sxʷtpqyen. Development in the Sxʷtpqyen neighborhood is anticipated, adding thousands of housing units to the region. Moreover, housing will be in higher density clusters that can support transit service. Route 15, as seen in Figure 5-9, is a new route to directly serve this growing area.

Route 15 would operate via Route 11's alignment from downtown Missoula to the intersection of Connery Way and Chelsea Drive and then use England Boulevard to serve Sxʷtpqyen. Route 15 would replace the existing Route 14 operating on Broadway Street between the Downtown Transfer Center and Russell Street.

The new Route 15 would require approximately 4,600 annual revenue hours.

Figure 5-9 Mid-Term Network Route 15



Note: The street network in Sxʷtpqyen is still not complete, so the western alignment is subject to change based on street construction.

On-Demand Pilot Program - Linda Vista/Target Range On-Demand Zone

The fourth priority is to implement on-demand transit in Miller Creek and Target Range. On-demand is a ride-share service, where riders can schedule a trip within a pre-defined area (zone) via a call-in number or mobile application. The vehicles, usually consisting of accessible vans, can take riders directly from curb to curb, or pick up and drop off riders at pre-defined virtual "stops." The service may be directly operated by the agency or contracted in partnership with transportation network companies like Uber or LYFT.

On-demand service is the most appropriate type of service for Miller Creek and Target Range. Miller Creek, Two Rivers, Target Range, and Orchard Homes have low population density and difficult-to-navigate road networks, making them expensive and inefficient to serve with fixed-route transit. On-demand transit service may be necessary to provide residents with access to jobs and essential services until the neighborhoods experience sufficient population growth to support fixed-route transit. Additionally, smaller, more flexible vehicles can navigate winding road networks more efficiently. Ultimately, on-demand transit can provide a lower cost per trip compared to fixed-route services in low-density service areas.

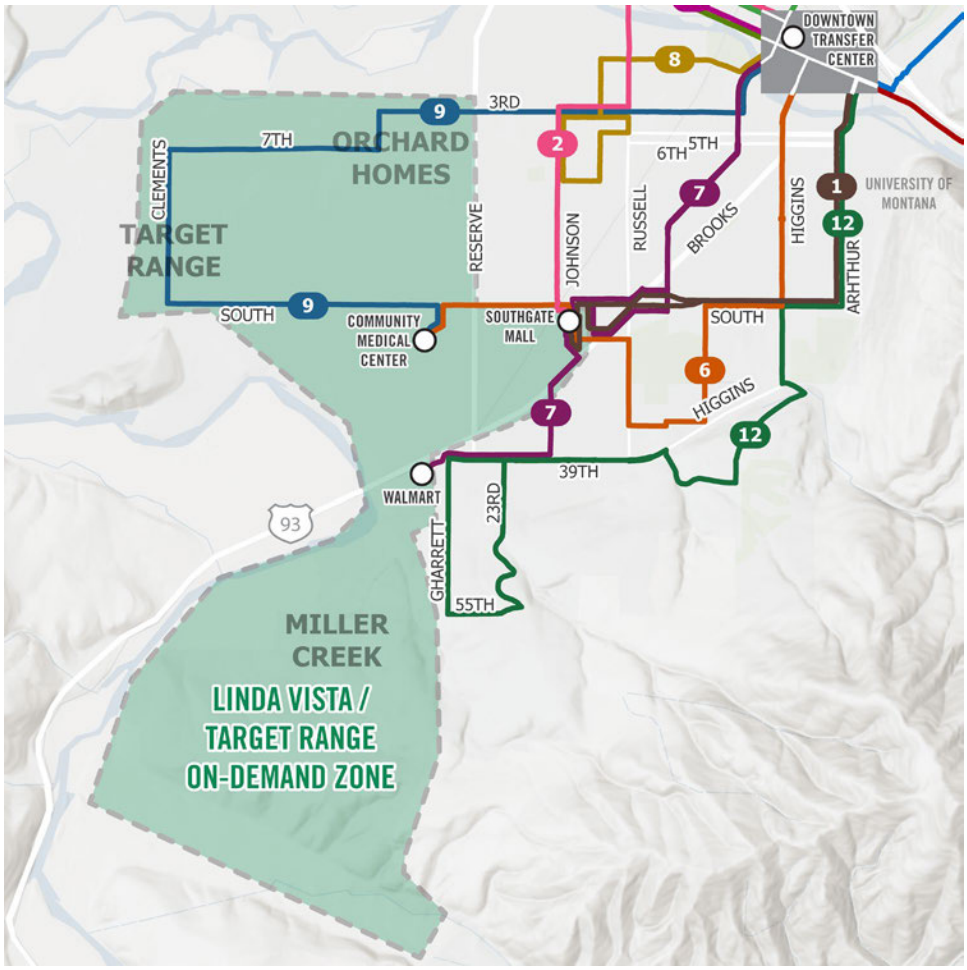
On-demand transit can help MUTD reach existing and new residents and expand the geographic area MUTD serves.

The new service will be a one-year pilot. A pilot program for testing the service and gathering public feedback before committing to a permanent service is recommended. At the end of a year, MUTD can evaluate how the service met expanded geographic coverage goals, balanced by the costs and additional ridership. MUTD should set measurable goals for determining program success before the pilot begins.

The recommended on-demand zone would connect Miller Creek, Two Rivers, Target Range, and Orchard Homes with Southgate Mall and Walmart, as seen in Figure 5-10. One vehicle would be designated for the service and response times would be 30 minutes or less. The zone is 8.9 square miles and would operate Monday to Friday from 6 a.m. to 8 p.m.

The service would require about 3,600 annual revenue hours. Ridership is projected to be about 21 weekday riders.

Figure 5-10 Near-Term Network Linda Vista / Target Range On-Demand Pilot Service Area



Paratransit Impacts

Paratransit is complementary to fixed-route service and is required by the ADA. Individuals must have a qualifying disability to use paratransit service. The senior van is available for individuals aged 60 and older who do not qualify for paratransit service. Paratransit and senior van services are vital for people for whom public transportation is less of a choice and more a critical lifeline to healthcare, daily living and social/community engagement.

The paratransit service area is defined as a three-quarter mile buffer around the fixed-route network. Today, the service area includes a total population of 75,700, including 9,800 (13%) residents living with a disability. The near-term plan does not remove or expand fixed-route service coverage, so the paratransit service area would not be altered. If the Linda Vista / Target Range on-demand zone is implemented, there is no obligation to provide paratransit because on-demand service provides a wheelchair accessible vehicle that can serve both ambulatory and non-ambulatory riders.

LONG-TERM PLAN

Overview

Missoula has experienced steady growth in population and employment over the last decade and that trend is expected to continue. With the city's desire to prioritize smart growth, MUTD could gain a potentially large market of additional riders. Feedback from stakeholders and the community has emphasized the need to expand transit service to these growing areas, while also making existing transit service more frequent. ***The recommendations serve new areas and make existing routes more convenient, improve mobility for existing riders, and support future land use plans for a sustainable Missoula that will increase ridership, access, and support continued economic development.***

The long-term plan presented in this section outlines the transit improvements necessary to implement this long-term vision for transit. The plan expands new local fixed-route and on-demand transit to areas that do not currently have access to MUTD service, adds frequency on existing bus routes to make transit a more competitive option for travel, specifies capital investments to support additional service, and restructures some routes to reduce service duplication.

The improvements included in the long-term plan require increased operations and maintenance (O&M) costs as phased implementation becomes feasible over this Service plan's duration. The long-term planned improvements build off the investments proposed in the near-term plan and account for capital investments like the proposed MOAB, Brooks Street BRT, and the new Midtown transit center. The MOAB is especially vital for accommodating peak service delivery because the current facility is at capacity.

Figure 5-11 provides a summary of changes for the long-term plan by route. However, given the significant increase in hours, buses, and employees, the long-term plan also identifies four major priority areas for phased implementation.

- **Priority 1:** Implement Near-Term Additional Improvements. Adding frequency and serving Sx̌ʷtpqyen were the most frequently requested improvements and can be accomplished at a relatively low cost while adding modest ridership.
- **Priority 2:** Complete MOAB, Implement Brooks BRT / Enhanced Bus Corridor. The MOAB is already underway and must be completed to add the necessary vehicles for implementing BRT and supporting route improvements
- **Priority 3:** Restructure Northside, Westside, and North Reserve Service. These recommendations improve frequency and reduce circuitous routing, but require significant funding.

- **Priority 4:** Expand on-demand service to serve lower density, difficult-to-reach areas. On-demand service costs more per rider, so the long-term plan recommends improving fixed-route service first.

Figure 5-11 Long-Term Network Proposed Route Changes

Route	Cost Unconstrained Long-Term Changes
1	Minor alignment changes at Southgate Mall and increase to 30-minute frequency from 9 a.m. to 5 p.m. on weekend
2	Replaced by Routes 8, 15, 16, and 17
3	Extend to the airport via North Reserve. Make the route bi-directional. Improve weekday frequency to 30 minutes all day.
4	Operate every 30 minutes between Downtown and East Missoula from 6 a.m. to 6 p.m. on weekdays.
5	No Change.
6	Make minor alignment changes at Southgate Mall. Improve weekday frequency to 15-minutes.
7	Convert to BRT between Southgate and downtown Missoula, with associated frequency improvements.
8	Extend from north Franklin to the Fort to Southgate Mall and Walmart, replacing parts of existing Route 2 and 7. Operate every 30 minutes.
9	No Change.
11	Route 11 would be replaced by Routes 3 and 16. Route 3 would replace the North Reserve and Expressway segments while Route 16 would replace the Downtown, North Reserve, VA Clinic, and airport segments.
12	No Change.
14	Replaced by Route 15.
15	New route between Downtown, North Reserve, and Sx^{w}tpqyen.
16	New route between Downtown, North Reserve, VA Clinic, and the airport.
17	New route between the Downtown Transfer Center and Southgate Mall, replacing segments of Route 2 on Phillips and Russell Streets.
On-Demand	Implement Sx^{w}tpqyen and expand Linda Vista / Target Range zones.

Figure 5-12 illustrates the new long-term network.

Figure 5-12 Long-Term Network

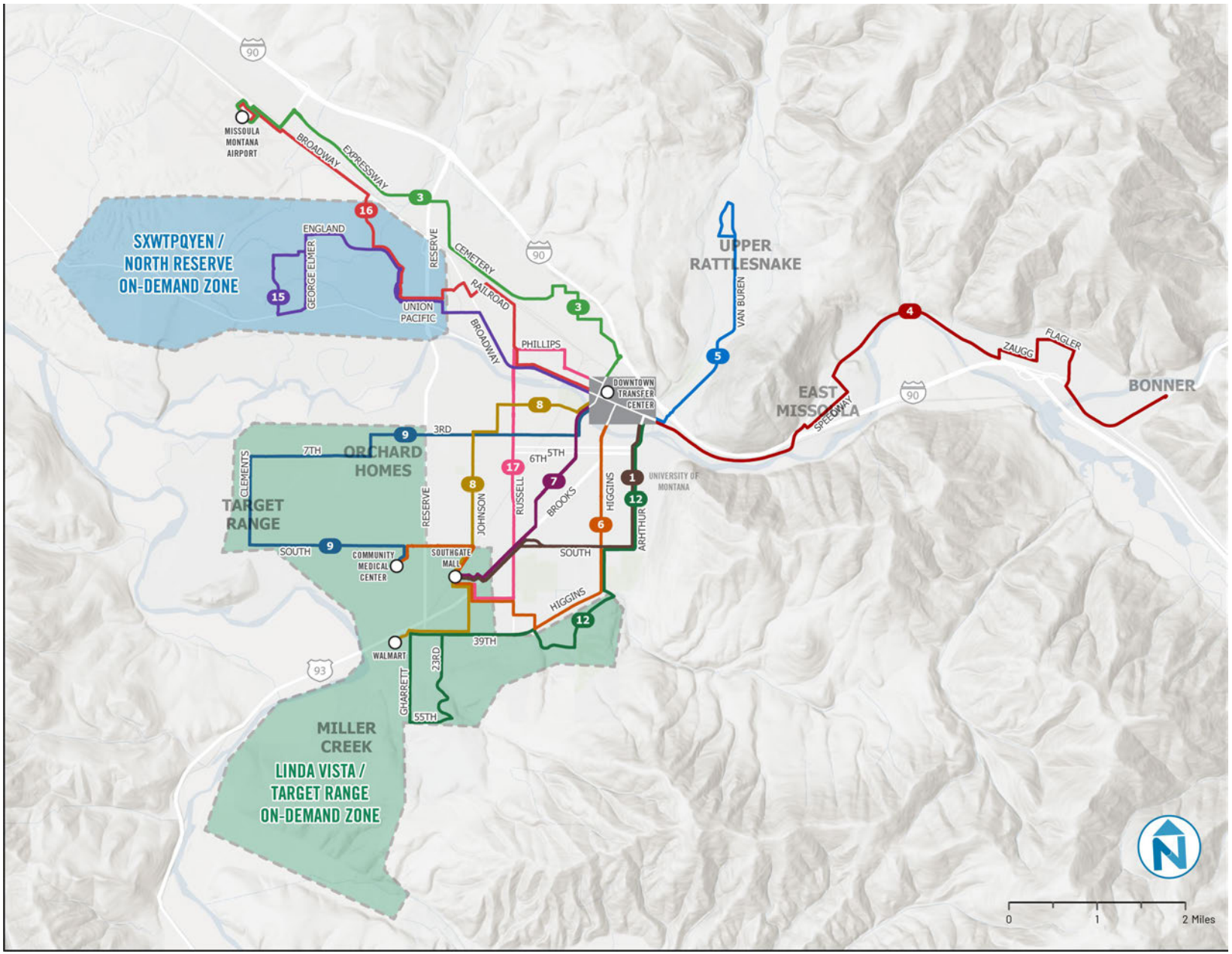
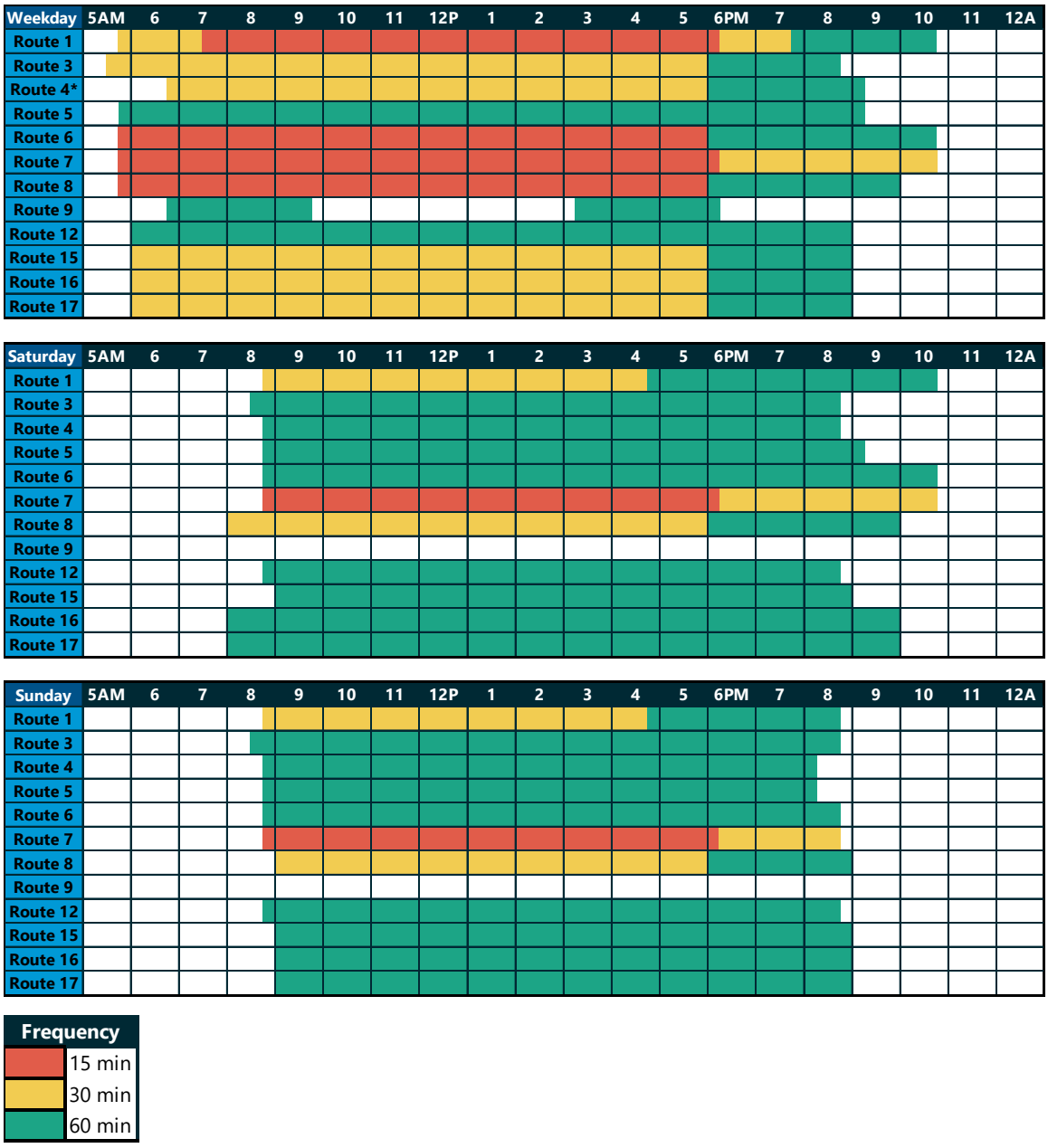


Figure 5-13 illustrates the frequencies and spans of the Long-Term network.

Figure 5-13 Long-Term Network Service Span and Frequency



Note: *On weekdays, Route 4 operates on a 30-minute frequency only to East Missoula. Service to Bonner remains hourly.

The long-term plan requires a 40,500 (+55%) annual revenue hours increase on the existing fixed-route network. In addition, 15,300 annual revenue hours for on-demand service are anticipated. Figure 5-14 and Figure 5-15 list the operating requirements for the long-term, fixed-route and on-demand networks, respectively.

The long-term plan increases operating hours by about 55,800 annual hours, equating to about 40 full-time employee (FTE) operators, using a more conservative 1,400 hours per FTE. The peak bus pull would increase by seven buses and three smaller vehicles.

Figure 5-14 Long-Term Network Fixed-Route Operating Requirements

	Existing		Long-Term		Change	
Route	Annual Revenue Hours	Peak Vehicles	Annual Revenue Hours	Route	Annual Revenue Hours	Peak Vehicles
1	11,800	8	12,500	3	+700	-5
2	17,400	0* (Interline 1 & 2)*	Replace with 8, 15, 16, & 17		-17,400	0
3	1,400	-	8,400	2	+7,000	+2
4	5,000	1	7,700	2	+2,700	+1
5	2,700	0* (Interline 3, 5, & 14)	2,700	0* (Interline 4 & 5)	0	0
6	8,900	2	15,000	4	+6,100	+2
7	7,300	2	15,700	3	+8,400	+1
8	5,200	2	21,200	5	+16,000	+3
9	1,500	1	1,500	1	0	0
11	5,400	1	Replaced with 3 and 16		-5,400	-1
12	6,200	2	5,100	1	-1,100	-1
14	1,300	0* (Interline 3, 5, & 14)	Replace with 15		-1,300	0
15	-		8,200	2	+8,200	+2
16	-		8,300	2	+8,300	+2
17	-		8,300	2	+8,300	+2
Total	74,100	20	114,600	27	+40,500	+7

Note: *Interlining is a practice that combines two or more independent routes into one operational schedule, eliminating extended periods of down time. This requires vehicles to be shared between routes. In the existing network, a vehicle operating on Route 1 is interlined with Route 2, and a vehicle operating on Route 3 is interlined with Routes 5 and 14. In the long-term network, a vehicle operating on Route 5 will be interlined with Route 4 and deliver increased service frequency to East Missoula.

Figure 5-15 Long-Term Network On-Demand Operating Requirements

On-Demand Zone	Long-Term Revenue Hours	Long-Term Peak Vehicles
Linda Vista / Target Range	10,200	2
Sxʷtpqyen / North Reserve	5,100	1
Total	15,300	3

The following sections describe the long-term plan's recommendations by priority, suggestions for additional improvements, and implications for paratransit service.

First Priority: Implement Near-Term Additional Improvements (Improve Frequencies and Serve Sxʷtpqyen)

The first priority is to apply the near-term plan's additional improvements where implementation was contingent on increased operations funding. These improvements represent a relatively low-cost opportunity to increase ridership, improve geographic coverage, and add frequency that do not require additional capital projects or base capacity. Details are included in the near-term plan section of this chapter.

Second Priority: Complete MOAB, Implement Brooks BRT / New Southgate Transit Center

The second priority is related to the completion of the Brooks BRT project and the relocation of the Southgate transit center. The Brooks BRT project is anticipated to restructure Route 7 to operate more quickly, directly, and reliably between the Southgate Mall and downtown Missoula. While the exact alignment still has not been finalized, the southern terminus, a new Southgate transit center, is almost certain. Relocating a transit center at Southgate Mall and completing the Brooks BRT project will restructure service at Southgate Mall that will improve connections, reduce out-of-direction travel, and mitigate existing reliability issues. Further, completing the MOAB by 2029 allows MUTD to store/maintain more vehicles and deliver more peak service. Improvements to high-frequency service will begin with Route 7. Alignment changes to Routes 1, 6, 7, and 8 in the vicinity of the Midtown transit center are recommended. Figure 5-16 summarizes the recommendations.

Figure 5-16 Second Priority: Implement Brooks BRT / New Midtown Transit Center

Long-Term Recommendation	Estimated Annual Revenue Hours
Extend Route 8 to Southgate Mall and Walmart. Extend Route south to Walmart via Russell Street and maintain 30-minute service. This is an interim solution prior to the Route 2 restructure.	5,200
Improve Route 7 Frequency to BRT Levels. Operate Route 7 every 15 minutes on weekdays and weekends.	8,400
Adjust Route 6 to serve the new Midtown transit center.	0
Extend Route 1 to the new Midtown transit center.	0

Route 1 – Realign to New Midtown Transit Center

To more directly serve the new Midtown transit center, Route 1 should use Brooks Street and Mary Avenue south of Sussex Avenue and South Avenue. This alignment change would eliminate out-of-direction-travel. The proposed revisions to Route 1 in the Southgate Mall area can be seen in Figure 5-17.

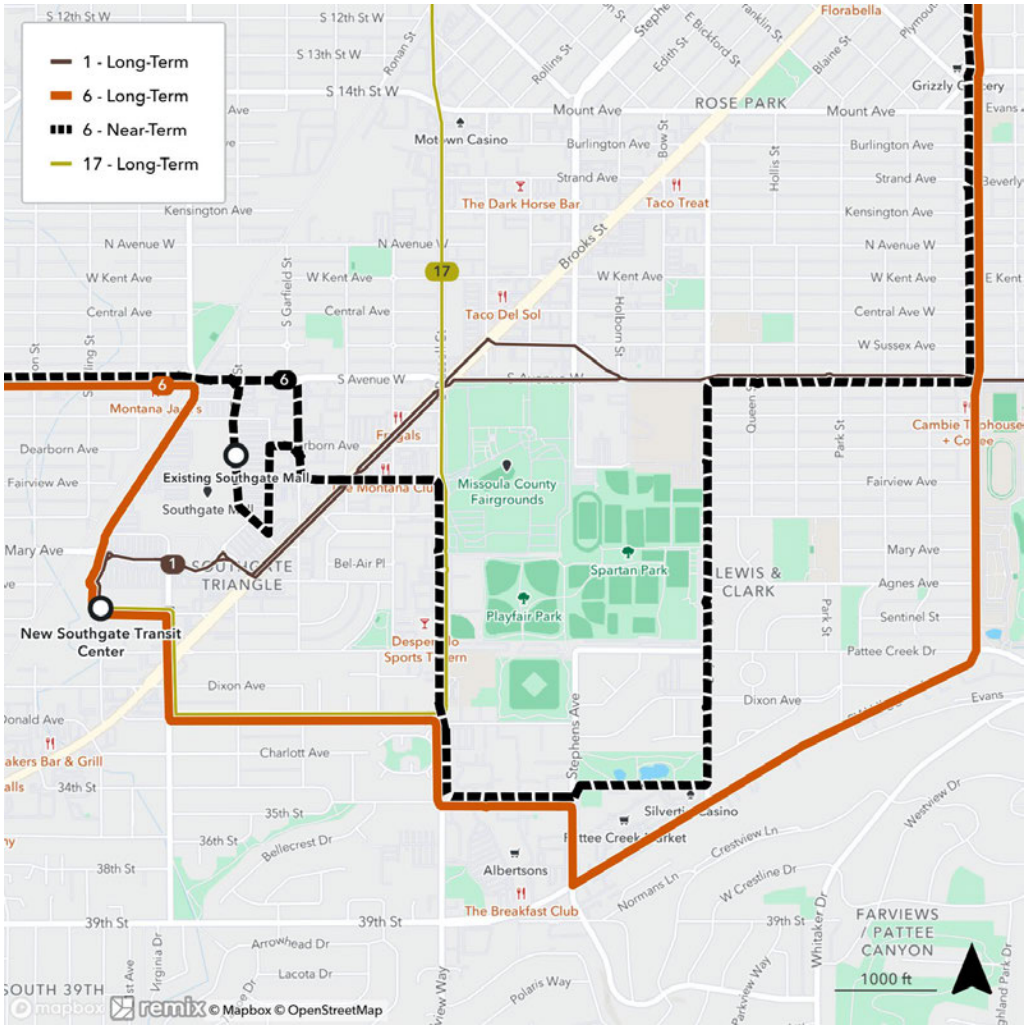
Figure 5-17 Long-Term Network Route 1

Route 6 – Realign to New Midtown Transit Center

The long-term plan proposes two changes for Route 6. The proposed revisions to Route 6 in the Southgate Mall area can be seen in Figure 5-18.

- **Streamline alignment near the new Midtown Transit Center**. Route 6 should operate on McDonald Avenue, Paxson Street, and Southgate Mall Access Road instead of Fairview Avenue and Garfield Street. A new Route 17 replaces service on Russell Street north of McDonald Avenue.
- **Serve Higgins Avenue**. In addition, Route 6 should also be rerouted from South Avenue, Bancroft Street, and 34th Street to remain on Higgins Avenue and turn north onto Stephens Avenue. This new alignment avoids duplication with Route 1, provides direct service on Higgins Avenue, and more frequent service to the Lewis & Clark housing area.

Figure 5-18 Long-Term Network Route 6

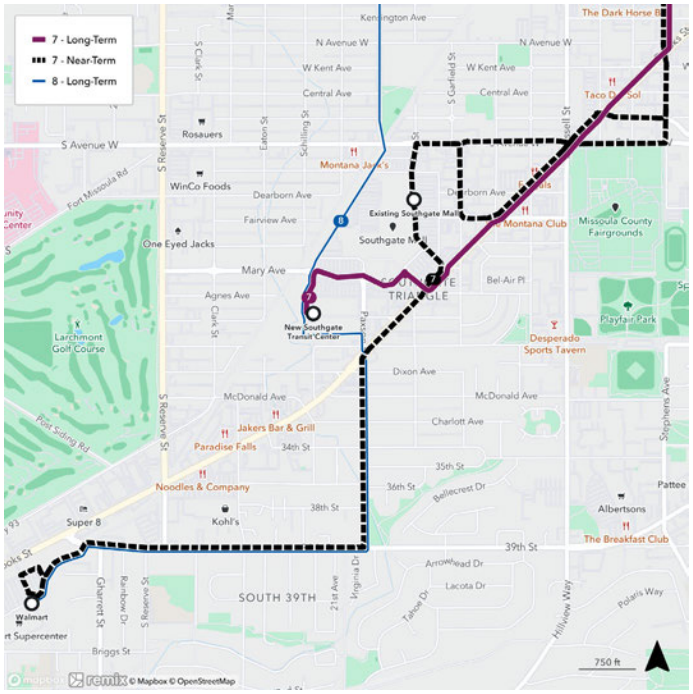


Route 7 – Upgrade to Bus Rapid Transit Standards

Route 7's operation between downtown Missoula and Southgate Mall is anticipated to be upgraded to BRT standards, with higher frequency and associated capital improvements that improve speed, reliability, and customer experience. Figure 5-19 depicts the new Route 7 alignment in the Southgate Mall area.

- **Improve Frequencies**. Route 7 currently operates every 30 minutes during weekday peak times and hourly at all other times. The Brooks BRT should operate every 15 minutes, from 6 a.m. to 6 p.m. on weekdays, and from 9 a.m. to 6 p.m. on weekends. Service after 6 p.m. should operate every 30 minutes.
- **Streamline Alignment in Southgate Mall**. Route 7 would be replaced by the new BRT alignment between Southgate Mall and downtown Missoula. In addition, the new Midtown transit center can reduce some of the out-of-direction travel patterns most MUTD routes serving the existing Southgate Mall stop experience. The new Midtown transit center will also reduce the number of buses driving through parking lots that are an ongoing safety concern.. It is industry best practice to not run buses through parking lots due to the potential for pedestrian and vehicular conflicts.
- **Discontinue Service to Walmart**. Route 7 will be truncated to terminate at Midtown transit center instead of Walmart. However, service from Southgate Mall to Walmart will be continue on an extended Route 8.

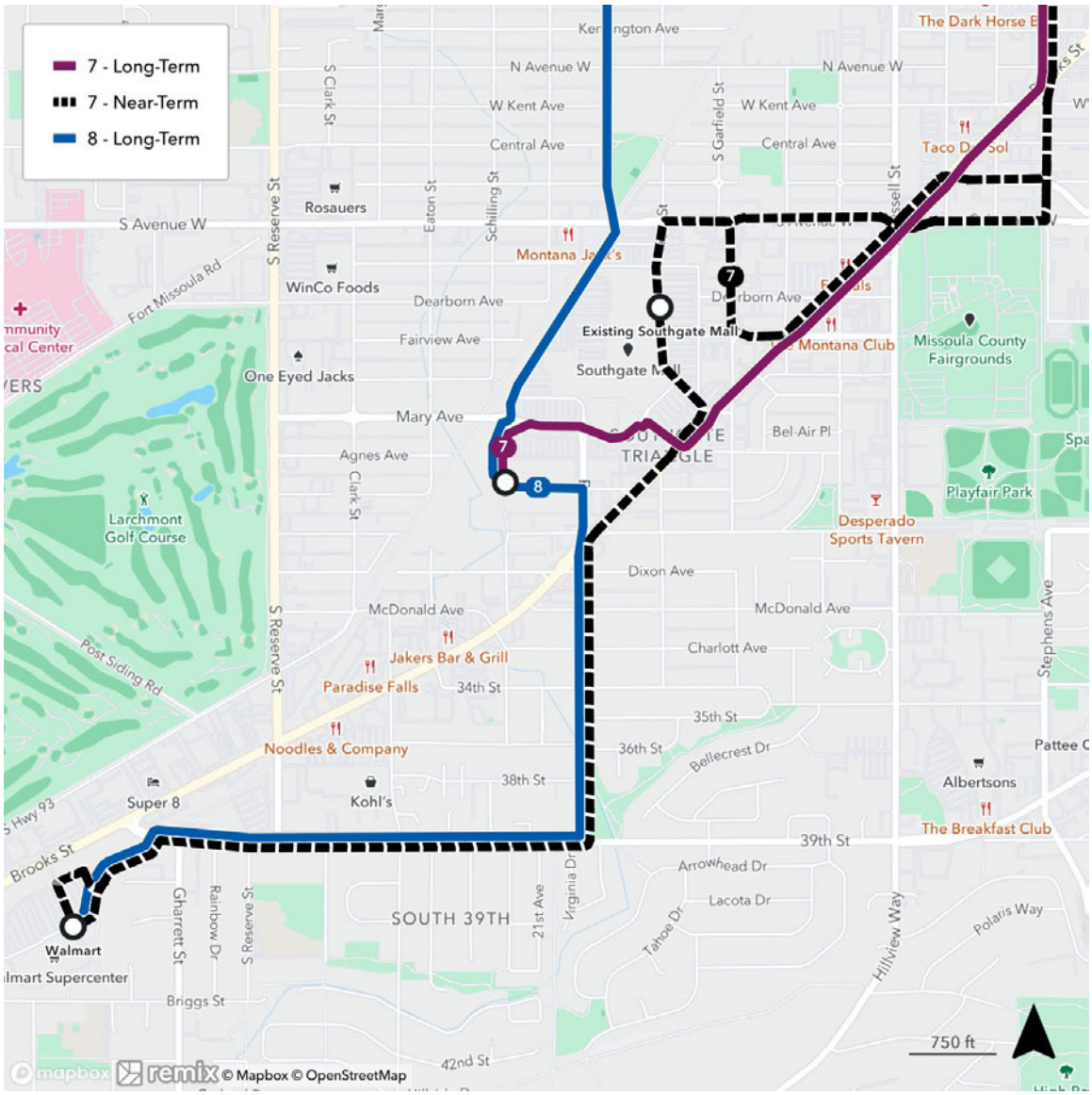
Figure 5-19 Long-Term Network Route 7



Route 8 – Extend to New Midtown Transit Center and Walmart

In conjunction with cutting Route 7 from Walmart to Southgate Mall, Route 8 should be extended to access the new Midtown transit center and Walmart, using Johnson Street, Paxson Street, and 39th Street. Figure 5-20 shows the proposed alignment for the southern end of Route 8.

Figure 5-20 Long-Term Network Route 8



Third Priority: Restructure Northside, Westside, and North Reserve Service

The third area of priority is to restructure and improve service in the Northside, Westside, and North Reserve areas. Today, Route 2 follows a circuitous routing, causing riders to travel out-of-direction to go to/from Downtown. Routes 8, 15, 16, and 17 will replace various segments along Route 2, and provide more direct connections from North Reserve and the Westside to Southgate Mall, Walmart, Sx̌tpqyen, and the airport. Routes 3 and 11 also travel circuitous routing, so a modified Route 3 and a new Route 16 will provide bi-directional service to the Northside, North Reserve, and the airport.

Figure 5-21 summarizes the recommendations and provides estimated costs and ridership.

Figure 5-21 Third Priority: Restructure North Reserve Service and Replace Route 2

Long-Term Recommendation	Estimated Annual Revenue Hours
Consolidate Route 2 service with new routes. Route 2 would be replaced by portions of Routes 8, 15, 16, & 17.	(16,700)
Improve Route 11 frequency (rebranded as Route 16)/. Operate Route 11 (as new Route 16) every 30 minutes on weekdays.	2,900
Increase frequency on Route 15. Improve frequency over near-term recommendations.	8,200
Service Russell Street with a new Route 17. Create a new north-south route on Russell Street to directly serve this redeveloping corridor	8,300
Increase frequency on Route 8 to every 15 minutes. This replaces Route 2 service.	6,100
Extend Route 3 to North Reserve and the airport. Connect Route 3 to North Reserve and the airport via Roseburg and Expressway. This replaces Route 11 service.	6,300
Improve Route 6 frequency to 15-minute headways on weekdays and every 30 minutes on weekends.	6,100

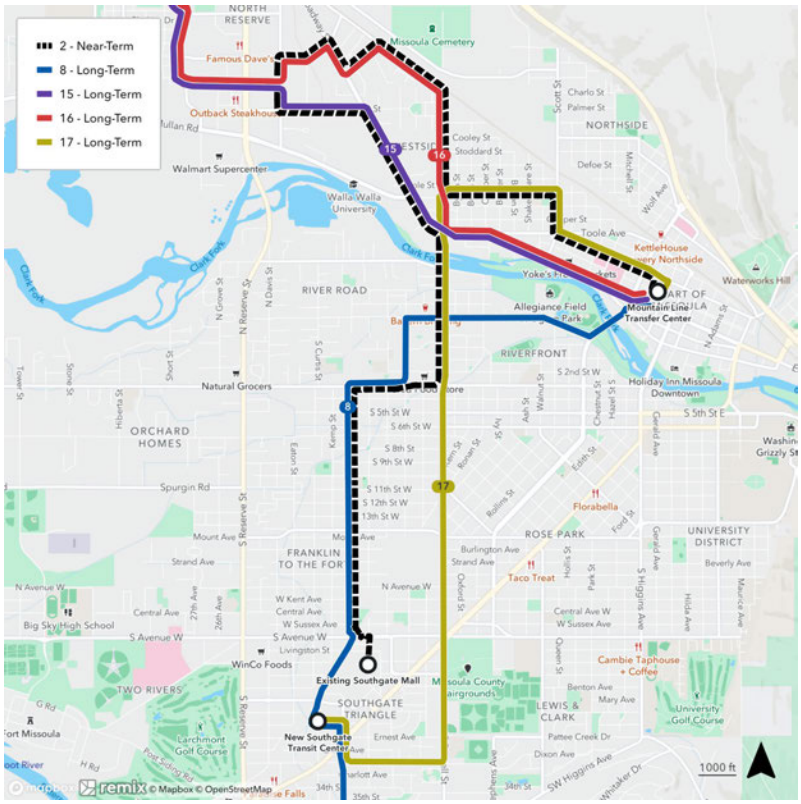
Route 2 – Replace Service on North Reserve and Russell Streets.

Route 2 will be discontinued along North Reserve Street and on the Westside, and segments of Routes 8,15, 16, and 17 will replace that service.

- **Route 8 from 3rd Street to Southgate Mall**. Route 8 will replace Route 2 from 3rd Street and Johnson Street to Southgate Mall and provide a new connection to Walmart.
- **Route 15 from North Reserve to Broadway Street**. Route 15 will replace Route 2 on Great Northern Avenue, Palmer Street, and Broadway Street.
- **Route 16 from Russell Street to North Reserve**. Route 16 will replace Route 2 on Russell Street, Railroad Street, Commerce Street, Broadway Street, Latimer Street, American Way, and Great Northern Avenue.
- **Route 17 from the Downtown Transfer Center to Russell Street**. Route 17 will replace Route 2 on Spruce Street, Scott Street, Philips Street, and Russell Street (south of Phillips Street).

  Riders in the Westside will be required to transfer at the Downtown Transfer Center or walk to Route 17 to connect to Southgate Mall. Figure 5-22 shows the services replacing Route 2.

Figure 5-22 Long-Term Network Route 2 Service Replacement

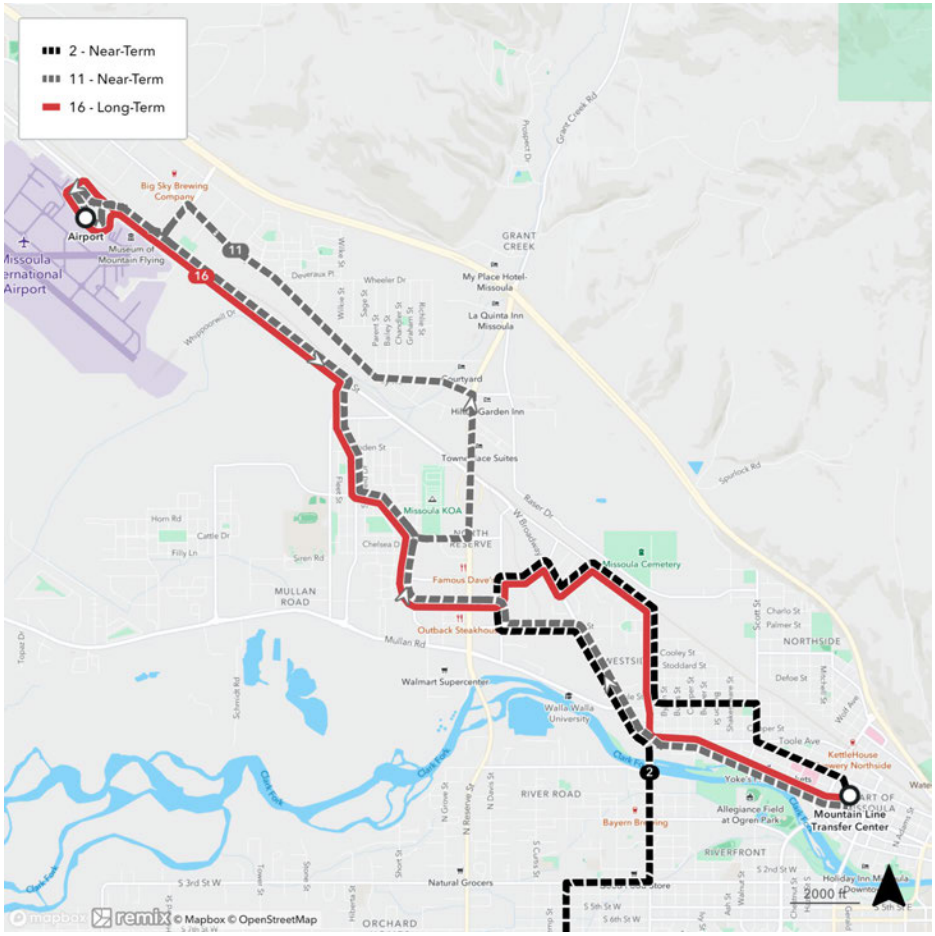


Route 16 – New Route to Replace Routes 11 and 2

The new Route 16 provides a bi-directional connection between the Downtown Transfer Center and the airport, replacing segments of Routes 2 and 11. Figure 5-23 depicts the new Route 16.

- **Replace Route 2 from Russell Street to North Reserve**. Route 16 will replace Route 2 on Russell Street, Railroad Street, Commerce Street, Broadway Street, Latimer Street, American Way, and Great Northern Avenue.
- **Replace Route 11 Service to Airport**. Currently, Route 11 serves the airport with a one-way loop travelling on Expressway Road toward the airport and Broadway Street toward Downtown. This results in out-of-direction travel for anyone boarding or alighting in the loop. In the long-term plan, Route 16 would replace Route 11 with bi-directional service via North Reserve. Service would mostly follow the existing Route 11` alignment and continue to Broadway Street via Mary Jane Boulevard.

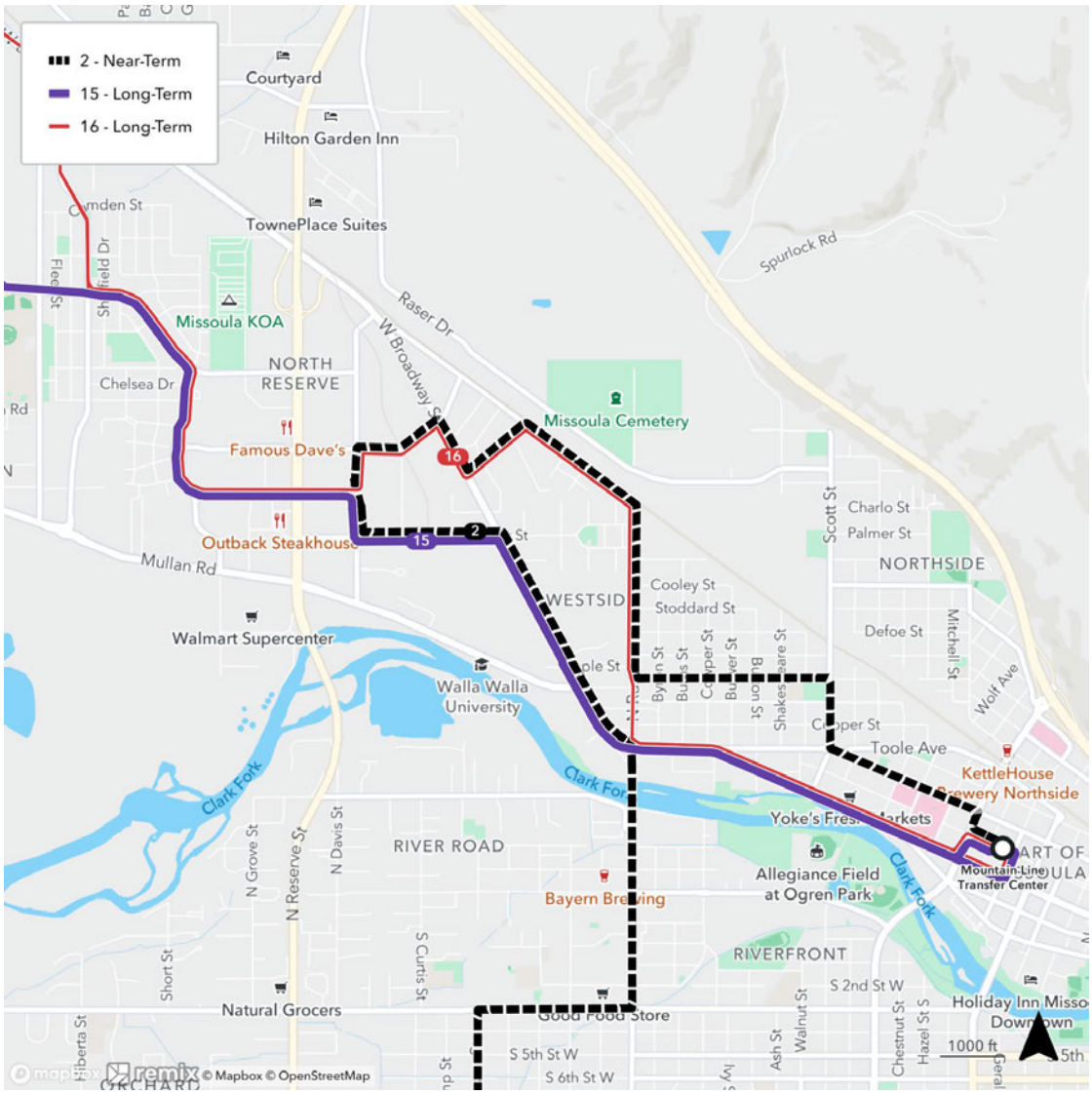
Figure 5-23 Long-Term Network Route 16



Route 15 – Increase Frequency

When launched, either as an additional improvement in the near-term plan or as the first priority in the long-term plan, operating Route 15 hourly, is proposed. However, as Route 2 is discontinued, Route 15 must increase its frequency to operate every 30 minutes as a replacement to Route 2 service on Broadway Street and Palmer Street. In addition, Route 16 will also operate every 30 minutes, allowing for offsetting arrivals and departures on Routes 15 and 16 at the Downtown Transfer Center. This frequency provides effective 15-minute service between Downtown and the North Reserve area. On weekends, each route should operate hourly, creating an effective 30-minute frequency in that segment. Figure 5-24 shows Routes 15 and 16 in this scenario.

Figure 5-24 Long-Term Network Routes 15 and 16

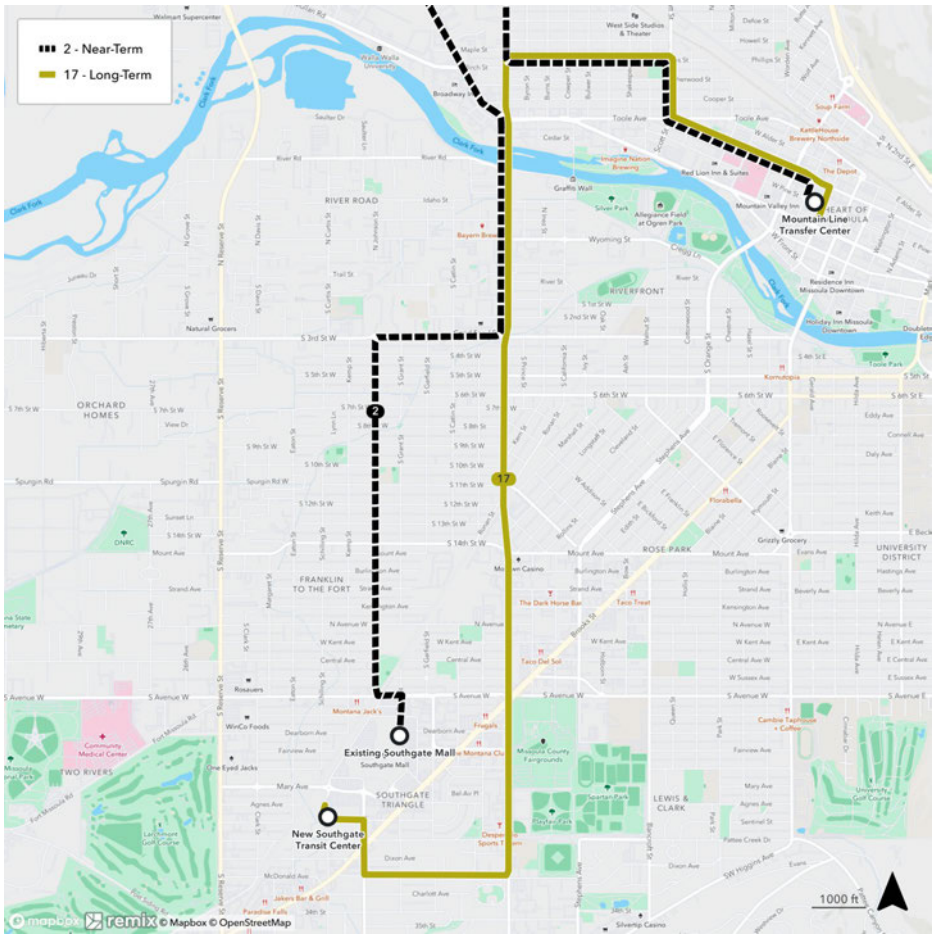


Route 17 – New Route on Russell Street

Route 17 will replace Route 2 with a more direct connection between the Downtown Transfer Center and Southgate Mall via Russell Street. Figure 5-25 shows the new Route 17.

- **Replace Route 2 between Downtown and Southgate Mall**. Today, Route 2 travels out of direction through the Westside and on North Reserve before connecting Downtown to Southgate Mall. The new Route 17, replacing Route 2, creates a more direct connection between Downtown and Southgate Mall via Spruce Street, Phillips Street, and Russell Street.
- **Launch New Service on Russell Street**. Currently, there is no fixed-route service on Russell Street between South 3rd Street and South Avenue West. As a result, some riders are forced to walk over a quarter mile to reach fixed-route service. Significant infill development on Russell Street that should support future transit service is expected.

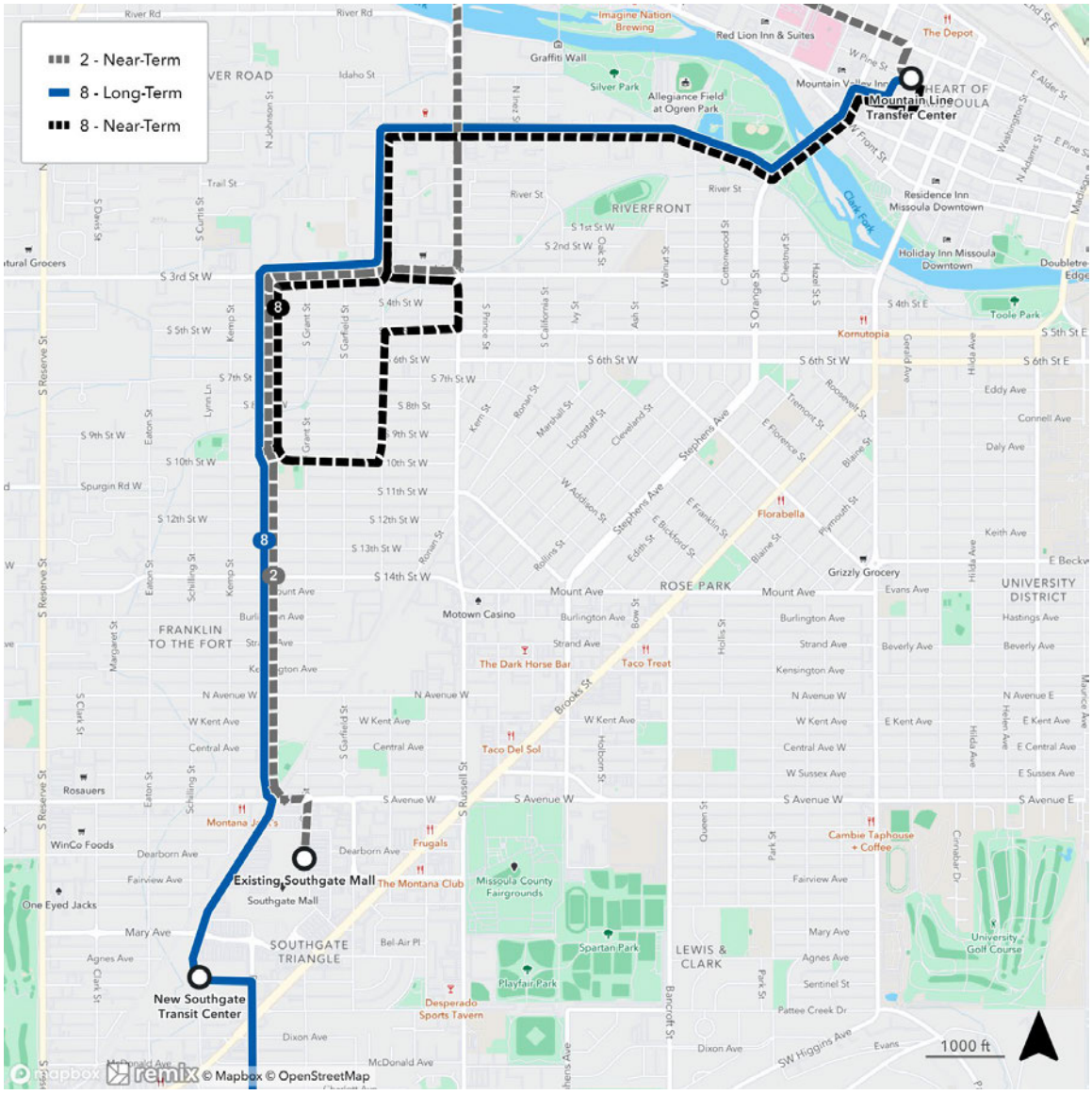
Figure 5-25 Long-Term Network Route 17



Route 8 – Increase Frequency

The near-term plan recommends restructuring Route 8 to connect downtown Missoula, the Sawmill District and the north Franklin to the Fort area with 30-minute service. The long-term plan's second priority (complete MOAB, implement Brooks BRT / build the new Midtown Transit Center) replaces Route 7 by extending Route 8 to Southgate Mall and Walmart. When Route 2 is discontinued, frequency on Route 8 should be upgraded to every 15minutes on weekdays and every 30minutes on weekends as depicted in Figure 5-26.

Figure 5-26 Long-Term Network Route 8

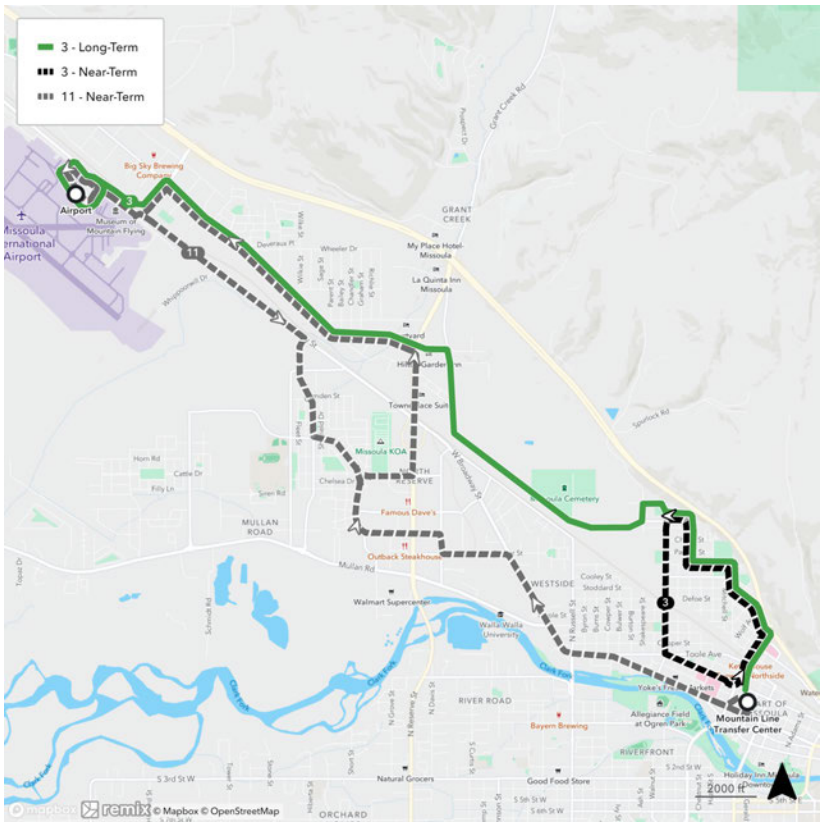


Route 3 – Extend to Airport

Route 3 should also be extended to the airport to serve new development and frequency should be increased. Figure 5-27 show the new Route 3.

- **Extend Route 3 Service to North Reserve and the Airport.** Today, residents in Northside, a rapidly growing neighborhood, must ride Route 3, travel out of direction, and transfer at the Downtown Transfer Center before being able to access key areas like North Reserve and the airport. Route 3 should be extended from Northside, past the proposed Roseburg site, to North Reserve, and then to the airport via Expressway to serve those expanding areas. Northside residents would then connect more directly to job opportunities and amenities.
- **Introduce Bi-Directional Service**. Today, Route 3 travels in a large one-way loop, forcing riders to travel the length of the loop when travelling to and from home/work. The new Routes 3 and 17 would provide bi-directional service to all stops within a 5-minute walk from today's Route 3, reducing commuter inbound and outbound travel times.

Figure 5-27 Long-Term Network Route 3



Note: If the new proposed road north of the cemetery is completed, the Route 3 alignment may be modified to serve that new roadway.

Route 6 – Increase Weekday and Weekend Frequency

Route 6 currently operates every 30minutes on weekdays and posts MUTD's third highest ridership. On weekdays, Route 6 can support 15-minute service, improving the connection between the high-density housing along 34th Street to Downtown and Southgate Mall. Correspondingly, weekend service should also be increased from hourly service to 30-minute service.

Fourth Priority: Expand On-Demand Service

If the near-term, on-demand pilot is implemented, the public responds positively to the service, and the on-demand service meets MUTD's goals, the long-term plan would improve on-demand service by expanding the Linda Vista / Target Range Zone and introduce the new Sx̌tpqyen / North Reserve Zone.

Figure 5-28 summarizes the recommendations and provides estimated costs and ridership.

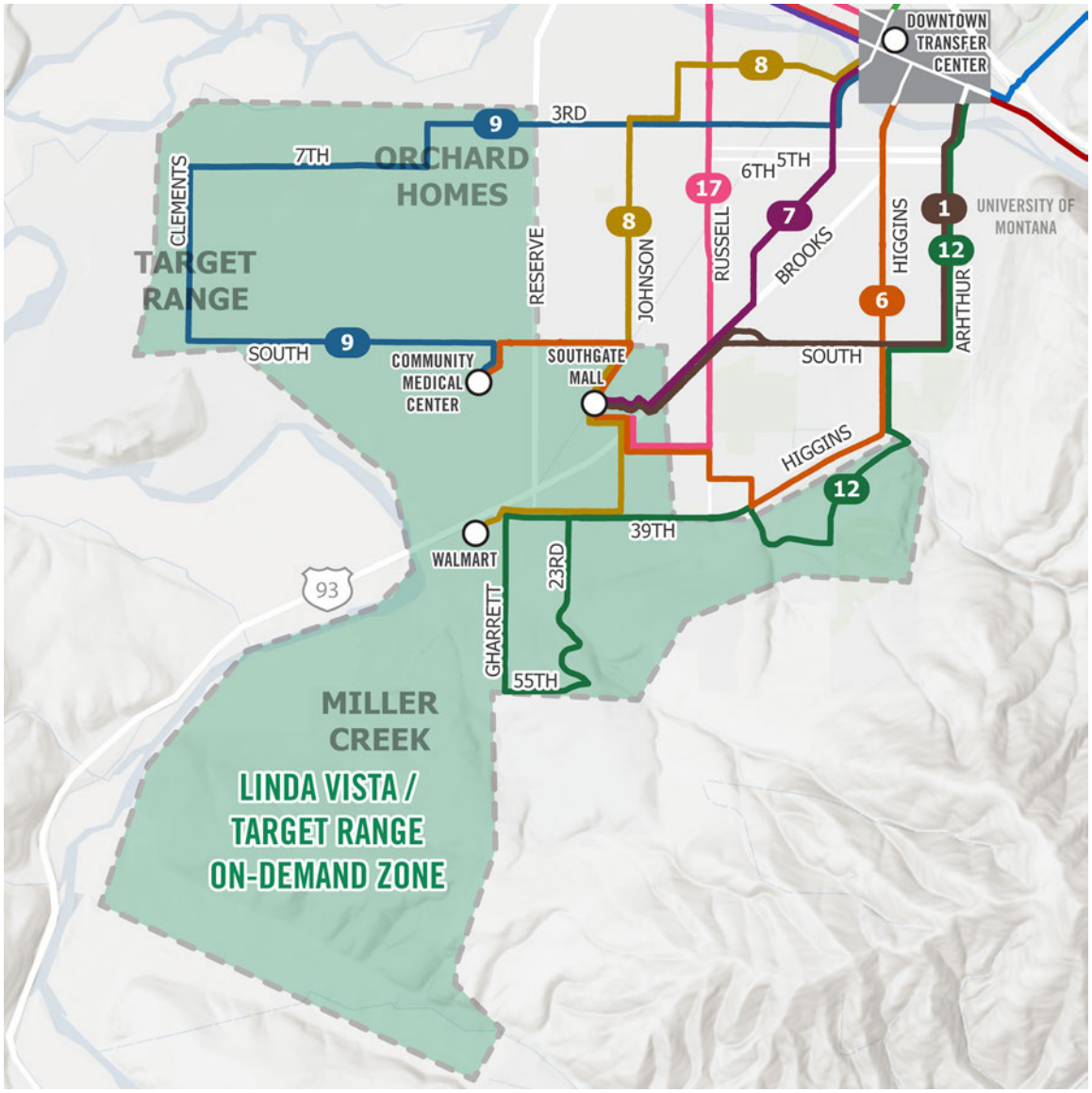
Figure 5-28 Fourth Priority: On-Demand Service

Long-Term Recommendation	Estimated Annual Revenue Hours
Implement Sx̌tpqyen / North Reserve On-Demand Expand on pilot service and increase service area to include South Hills and Whitaker. Operate 7 days a week.	5,100
Expand Linda Vista On-Demand Zone Create a new on-demand zone that operates 7 days a week.	6,500

Linda Vista / Target Range

The Linda Vista – Target Range zone would be expanded to include Moose Can Gully and Whitaker / Pattee Canyon. The expanded zone is 11.2 square miles and would operate from Monday to Sunday from 6 a.m. to 8 p.m. Figure 5-29 illustrates the expanded zone.

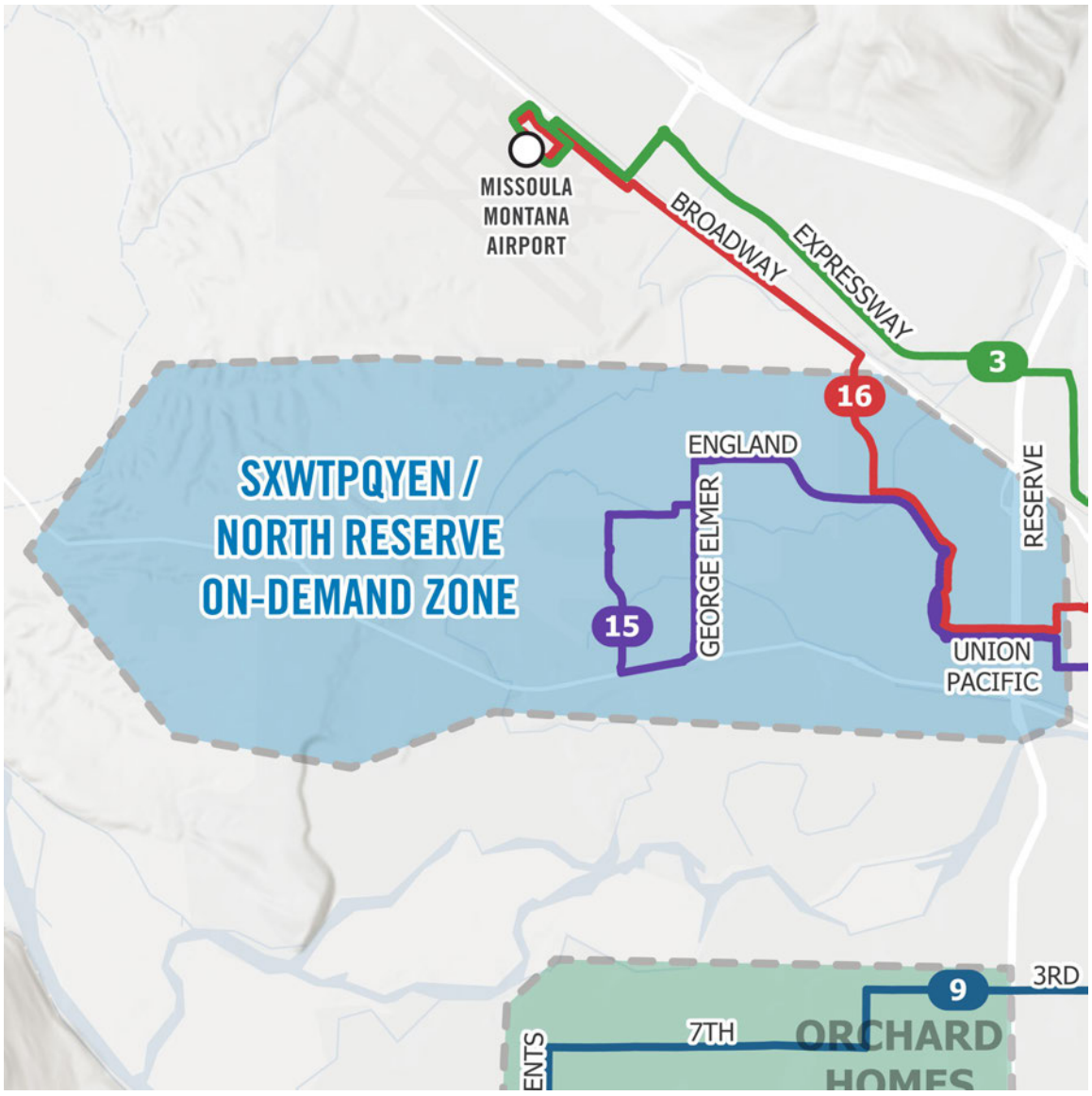
Figure 5-29 Long-Term Network Linda Vista / Target Range On-Demand Zone



Sxʷtpqyen / North Reserve

A new zone would also be implemented to connect Elmar Estates, Mullan Road, Sxʷtpqyen, and North Reserve. Riders would be able to connect Routes 15 and 16 at Target. The new zone would be 6.2 square miles and would operate Monday to Sunday from 6 a.m. to 8 p.m. Figure 5-30 illustrates the new zone.

Figure 5-30 Long-Term Network Sxʷtpqyen / North Reserve On-Demand Zone



Paratransit Impacts

The long-term plan would add 1,400 additional residents – mostly in Sx̱tpqyen, including 200 people living with a disability, to the paratransit service area. As Sx̱tpqyen grows and other potential expansion areas such as the Roseburg site are developed, the additional population and geographic coverage will increase demand on paratransit. If the on-demand zones are implemented, there is no obligation to provide paratransit, because on-demand service provides a wheelchair accessible vehicle that can serve both ambulatory and non-ambulatory riders.

COMMUNITY PARTNERSHIP OPPORTUNITIES

MUTD has dedicated most of its resources to improving bus transit and paratransit. There are various modes and service types that do not fit within the conventional mass transit framework. The services may relate to broader, shared community goals and/or maximizing/expanding current rolling stock. Through the Service plan drafting process and within various other planning discussions, community partners have discussed the partnerships listed below and MUTD plans to explore them further in the context of supporting partnerships.

Recreation Shuttle

Other transit agencies have leaned into the opportunity to use transit to connect with recreational opportunities that benefit both the transit agency and the community. The transit agency generates ridership, builds brand awareness, and fosters goodwill in the community by showing it can adapt to providing non-traditional trips. The community gains new opportunities to recreate (particularly for those who may not drive or do not have a car), provides an alternative to the limited parking at sites, and contributes to achieving community sustainability goals.

Below are a few examples of recreational shuttle services currently in operation. Many of these services are sponsored by community partners covering partial costs.

- Ski shuttles – LINK Transit (Wenatchee, Washington) and Cascades East Transit (Bend, Oregon)
- Summer float shuttles – Cascades East Transit (Bend, Oregon)
- Hiking trailhead shuttles – King County Metro (King County, Washington)

Local examples include: the University of Montana operating a summer Clark Fork River Shuttle Service (now discontinued). Snowbowl operates a weekend shuttle service from Grant Creek and the University of Montana Campus Recreation Center for skiers.

MUTD has begun exploring potential partnership opportunities that would provide access to recreation opportunities. Preliminary interest is centered around providing access to trailheads within the area including but not limited to: Blue Mountain, Pattee Creek, Marshall Mountain, and the Rattlesnake trailheads.

Downtown Trolley

MUTD's diesel trolley currently operates during the farmers market and special events. An electric trolley will replace the diesel model in spring 2026. Stakeholders have expressed interest in using this vehicle on weekdays as a Downtown parking circulator connecting parking structures and hotels with Downtown destinations and the broader transit network. MUTD should be open to discussions with Downtown groups, local businesses, and tourism organizations to develop a partnership for operating this expanded service. Typically, downtown trolleys require partner funding to help cover operating costs.

Micromobility Support

Micromobility refers to lightweight vehicles, most often scooters, and bikes meant for short distances. Shared micromobility systems are shared-use fleets of micromobility devices – typically non-electric pedal bikes, pedal-assist electric bikes (e-bikes), and e-scooters – rented for short, point-to-point trips that start and end within the public right-of-way. Most systems utilize one of two primary strategies for where people can start and end trips: station-based or dockless. Community members have discussed introducing shared micromobility services in Missoula. The MPO has conducted background research, but the future of micromobility in the area remains uncertain. If implemented, micromobility stations should be considered in relationship to transit service as a connection to the broader transit system. Transit stops located near micromobility facilities would support first mile and last mile trips and provide additional mobility options. Intersection with high frequency routes (1 &2), future BRT service, and university service would be primary candidates for consideration.

6 IMPLEMENTATION AND BEST PRACTICES

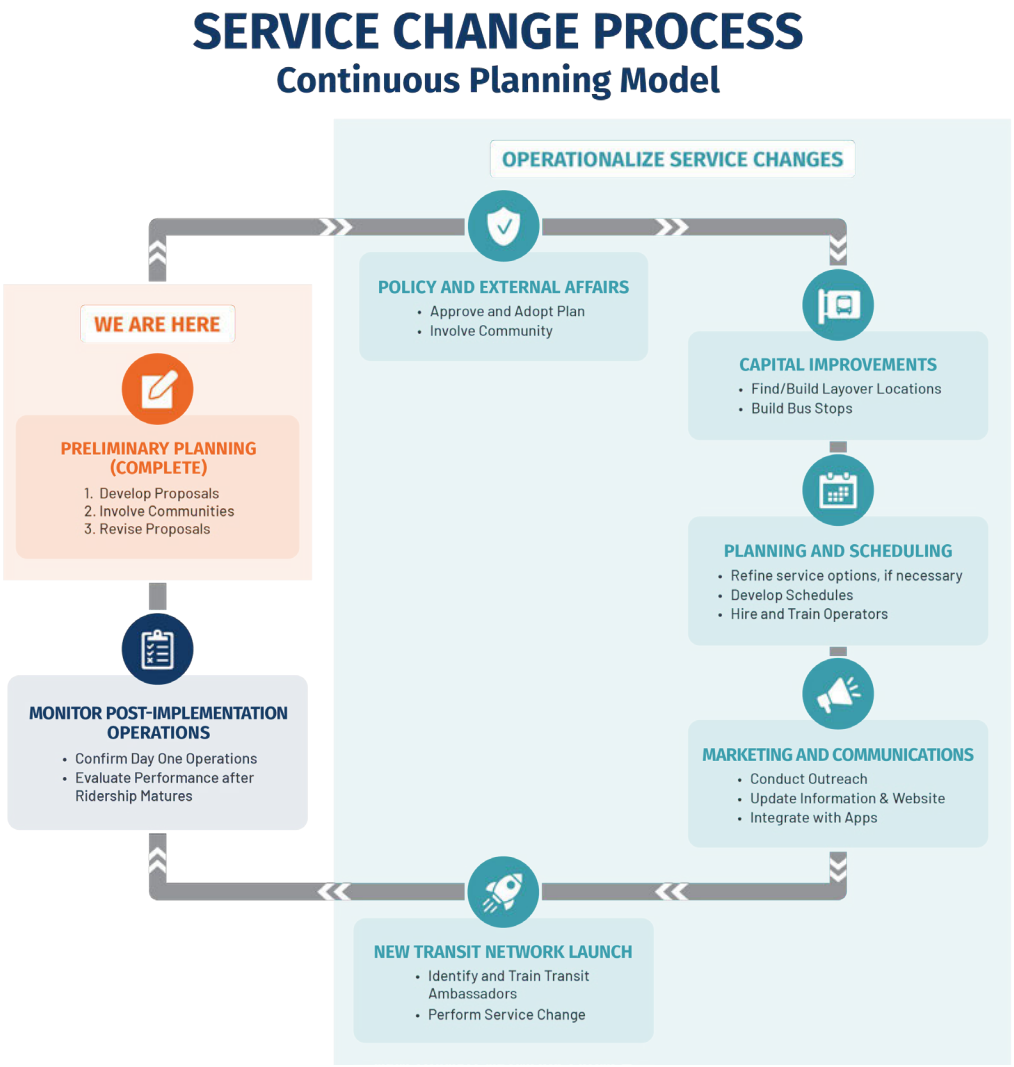
This chapter describes the implementation plan for realizing the Near- and long-term plan visions. The following sections describe the framework and tasks required for implementation.

- **Adopt a Continuous Planning Model**: This section describes how MUTD should continue to be flexible in facing Missoula's ever-changing mobility needs.
- **Operationalize Service Changes**: This section provides a high-level overview of the tasks by functional area MUTD will need to accomplish for launching the new network.
- **Monitor Post-Implementation Operations**: This section describes the steps for ensuring that operations were successfully implemented on the day of the service change, and how to inform future service changes by evaluating ridership maturity post-implementation.
- **Paratransit Study**: This section highlights the increasing demand for paratransit and proposes a follow-up study to better understand and plan for its future.
- **Integrate Existing and Planned Policy Documentation**: This section describes how the Bus Stop Master Plan and Communications Plan should incorporate elements adjacent to implementation of the near- and long-term plan visions.

ADOPT A CONTINUOUS PLANNING MODEL

Currently, MUTD typically conducts a service plan that documents immediate opportunities and outlines future steps every five years. The pandemic, among other things, has shown that travel patterns can shift with little or no notice. Rather than setting plans every five years, MUTD should consider adopting a continuous planning model to better match service planning priorities with current and projected conditions. In a continuous planning model, as seen in Figure 6-1, Near- and long-term plans would become living documents that could be updated on a regular basis.

Figure 6-1 Service Change Process



OPERATIONALIZE SERVICE CHANGES

Launching new or expanded transit service is a complex endeavor that typically requires the following: coordinating closely with multiple agencies and private businesses; adhering to a detailed schedule; maximizing and securing funding commitments; procuring multiple capital items and services, and hiring and training staff. Once the decision to implement a major service change/expansion is made, MUTD and key stakeholders should develop a detailed work plan. In addition, executing an implementation plan requires effort and funding outside the staff. This section provides a high-level overview of the tasks by functional area in preparation for launching a revised network.

Stage One: Policy & External Affairs

- **Plan Adoption**: MUTD will need to approve the proposed service changes prior to implementation.
- **Community Involvement**: MUTD should coordinate with key stakeholders to conduct outreach and public meetings for communicating the proposed service changes. MUTD should then document the community's involvement and feedback to identify and mitigate potential issues.

Stage Two: Capital Improvements

- **Identify Layover Locations**: MUTD should identify suitable bus staging locations and engage property owners to negotiate site access and use agreements, as necessary.
- **Bus Stop Planning**: Bus stop changes involve replacing sign placards at existing stops and installing new poles and placards at new/relocated stops. After installation, new signs should be bagged until the new network is officially launched.

Stage Three: Planning & Scheduling

- **Identify On-Demand Service Delivery Method and Service Contractors**: If MUTD decides to launch an a pilot on-demand service, the agency must decide how it will deliver the service. Will the agency operate it directly? Will it be contracted out? Will it be delivered through a transportation network company such as Uber or Lyft?

  If the service is contracted, MUTD will need to develop materials for an RFP and devote staff time to review the proposals, negotiate a contract, assist the contractor in commencing operations, and monitor service.

  If the service is operated in-house, MUTD must plan on hiring additional staff and obtaining capital to purchase new vehicles. Finally, MUTD will need to decide the hours of service, fares, and other relevant service parameters.
- **Service Plan Refinement**: Conditions can change between adopting the Service plan and implementing the planned improvements. For example, as the Sx̱tpqyen roadway network is built out, MUTD may want to engage with the public on the final alignment for the route serving the area. If significant changes occur, MUTD should update its Title VI equity analysis to ensure there are no adverse impacts.
- **Scheduling**: When service plans are ready for implementation, MUTD should conduct test runs of each route to validate running time assumptions. Using this

information, final bus schedules should be developed to determine manpower requirements. Several months prior to the service launch date, operator paddles should be developed to facilitate training and ultimately revenue service.

- **Hiring & Training**: Based on manpower needs, MUTD may need to hire additional operators. If so, MUTD should conduct new personnel recruitment and training. In the weeks leading to the service launch, MUTD should conduct a new bid based on the final work assignments and train all operators on the new routes and service polices.

Stage Four: Marketing and Communications

- **Marketing & Public Outreach**: Marketing and public outreach are essential to ensure a safe and smooth new network rollout. Each time service changes are rolled out, MUTD should develop and execute a marketing and outreach plan for informing the public. The marketing plan should cover branding, messaging, and media strategies that engage both current riders and the public.
- **Passenger Information & Website**: The new network will require an overhaul of MUTD's public-facing passenger information materials, including print and digital timetables and system maps. The website will also need updating several months prior that will provide riders with an opportunity for reviewing how their trips will change.
- **Technology Integration**: To support integration with third-party map services and trip planning apps, MUTD will need to update and publish its GTFS prior to the network launch.

Stage Five: New Transit Network Launch

- **Identify & Train Transit Ambassadors**: Many transit agencies that have implemented network redesigns enlisted volunteer "transit ambassadors" to pass out information and assist customers during the initial launch period. MUTD should identify internal staff or external volunteers to help perform this function.
- **Service Changeover**: Updating and changing routes is a highly choreographed effort that will occur in the days immediately prior to the grand opening. Tasks include updating the MUTD website, posting new information and maps at the Downtown Transfer Center and key stops, unbagging new bus stop signs and removing or bagging old signs in preparation for removal.

MONITOR POST-IMPLEMENTATION OPERATIONS

After day one launch, MUTD should ensure that transit services are operating according to plan. Further, MUTD should allow ridership to mature before evaluating ridership and making further adjustments to the network. The network must be flexible in its growth to meet Missoula's ever-changing travel demands.

- **Ensure Day One Operations Go According to Plan**. MUTD staff should make sure the service change was deployed correctly by using the transit services and talking to riders. Any rider complaints should be addressed immediately.
- **Allow Ridership to Mature**. MUTD should allow ridership to mature for 12 to 18 months before evaluating ridership and proposing more service changes (provided there are no operational safety hazards). Riders require time to become familiar with service changes, especially with new on-demand services. After the first year, MUTD can evaluate boardings at a stop level, and customer complaints normalized by ridership on routes, to inform future service changes.

PARATRANSIT STUDY

Paratransit ridership has increased, though the contributing factors remain unclear. The number of individuals eligible for paratransit has grown and is expected to continue rising as the population ages. Zero fares may also be driving demand by lowering the barrier to taking more trips. Additionally, some of the increase in ridership may result from individuals requesting more trips. A detailed study on paratransit service is recommended to analyze the factors influencing demand, project future needs, assess the implications for MUTD, and explore potential service options.

INTEGRATING EXISTING AND PLANNED POLICY DOCUMENTATION

Mountain Line has endeavored to improve its operations support by investing in various planning projects, including the bus stop master plan and marketing and communications plan.

The Bus Stop Master Plan, adopted in 2015 and amended as recently as February 2020, is MUTD's blueprint for improving signage and amenities at bus stops. MUTD recently undertook an updated inventory of all bus stops in summer of 2024.

The service changes proposed as part of the Transit Service Plan would require MUTD to establish new stops on new roadways being served, as well as removing existing bus stops from streets that would no longer be served. New stops should be established in accordance with the guidelines outlined in the Bus Stop Master Plan.

MUTD has also sought to strengthen the public's understanding and ease of use of Mountain Line services through better agency communication. In Spring 2024, MUTD conducted a marketing and communications audit with a design consultant. The ensuing marketing and communications planning effort identifies opportunities to improve signage, instructional rider communication, wayfinding infrastructure, maps, targeted messaging, and online rider resources for greater clarity, accessibility, and consistency. This supports agency efforts to increase ridership by improving the transit experience for passengers and identifying new potential transit users in the region. Increased strategic partnership efforts also allow MUTD to invest in continuous outreach and engagement with stakeholder groups to better serve the wider community.