CHAPTER 11

Recommended Plan

This chapter presents the recommended set of projects that help to ensure the efficient and safe multimodal movement of people and goods within and through the Billings Urban Area. These projects were identified from the previous LRTP, projects developed through the TIP process, and projects developed through the LRTP public involvement and interagency process. The LRTP investments provide several benefits to the transportation system:

- Increase road safety, connectivity, and capacity
- Manage the transportation system better
- Improve transportation options
- Maintain the public transportation system
- Improve and expand pedestrian, bicycle, and multiuse trail facilities
- Enhance the signal system with new technologies and updated timings
- Integrate the transportation system with land use and community desires

Exhibit 11.1 illustrates some of the key areas that are connected by transportation within the Billings Urban Area.

Exhibit 11.1 Connecting the Billings Urban Area

A Toolbox of Transportation Strategies

The Billings Urban Area has significantly invested in streets, highways, intersections, and multiuse trails infrastructure over the past 15 to 20 years. With the population and employment growth and current community vision, investment in safety and a transportation system for all modes has become a priority for the Billings Urban Area. Several strategies are presented in this section for consideration in the recommended plan.

CONGESTION MANAGEMENT

Managing traffic signals is one of the most important traffic engineering functions within a city. Few activities have equivalent impact on the public. Optimizing traffic signal timing and coordination has the potential to significantly reduce driver delay and congestion. Simple things—like adjusting the length of the red-green-yellow cycle for different daytime hours, weekdays versus weekends, and seasonally—can reduce traveler delay and enhance the overall travel experience.

Approximately 165 intersections have traffic signals in the Billings Urban Area. Getting the timing correct is critical for minimizing delay, improving safety, and protecting non-motorized modes of transportation. The City of Billings and MDT are just initiating major upgrades to the signal system and incorporating an annual signal timing program to analyze and update signal timings at intersections. Exhibits 11.2 and 11.3 illustrate a few of the critical signalized corridors, Main Street and 27th Street in the Billings Urban Area.

Exhibit 11.2 Signalized Intersection on Main Street

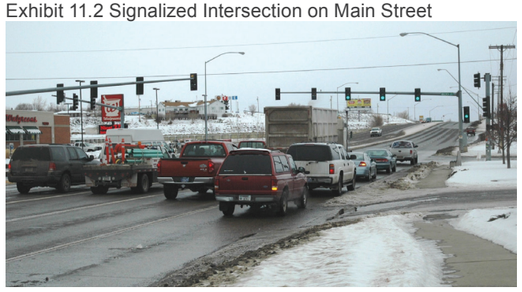
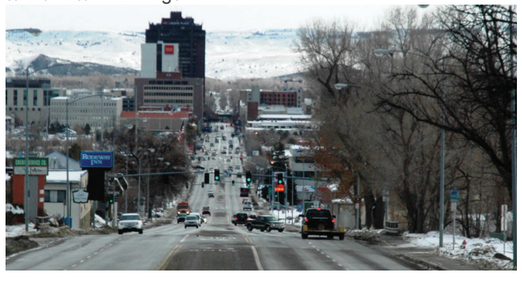


Exhibit 11.3 Signalized Intersections on 27th Street, Gateway to Downtown Billings



Adding road and public transportation capacity cannot be the sole strategy for addressing transportation needs. Management strategies can complement capacity expansion projects and offer other ways to make transportation more efficient, more flexible, and less intrusive. They include optimizing the operating performance of the transportation network, creating more travel options, carefully managing road work schedules to minimize travel disruption, increasing operations efficiency, and managing demand to conserve and influence travel behavior. Events at MetraPark can create large traffic impacts. Event management planning is another strategy that can mitigate community and travel disruption. Exhibits 11.4 and 11.5 illustrate the area around MetraPark. Collectively, these strategies can relieve stress on the available capacity in peak commute hours and can moderate travel impacts.

Exhibit 11.4 Rimrock Arena at MetraPark

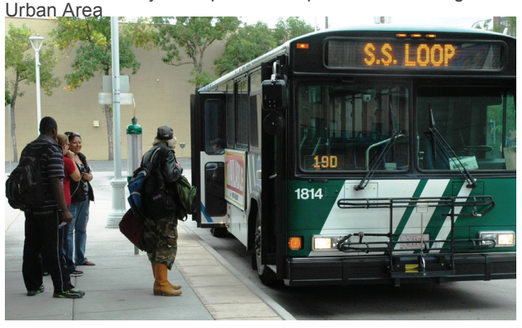
Exhibit 11.5 Exposition Drive along MetraPark

PUBLIC TRANSPORTATION SYSTEM OPERATIONS

The MET Transit budget is around $5 million annually to operate the public transit and Paratransit system (Exhibit 11.6). This annual budget increases during some years depending on capital purchases and increases in operating expenses. The cost is partially offset by operating revenues from passenger fares and advertising. However, MET Transit's ability to expand and deliver more service is directly tied to the level of operating funding.

Funding is the critical issue for MET Transit throughout the LRTP planning horizon. Maintaining the momentum—increases in ridership and continued public interest in the transit system is critical. Momentum cannot be sustained in the absence of committed and stable public funding support. Available funding provides for continuing vehicle replacement over the next twenty years, but a change in the funding will need to occur to allow MET Transit begin implementing new routes and increased frequency on existing routes.

Exhibit 11.6 A Key Transportation Option for the Billings Urban Area



CONNECTING PEOPLE

Pedestrians, bicycle, and multiuse trail facilities contribute to the attractiveness and livability of the city, enhance personal health, and help foster a sense of community. These facilities are used by people to travel to and from the public transportation system, jobs, medical facilities, schools, parks, and other destinations. To create a network of facilities, it is critical for the MPO and agency partners to evaluate, design, and implement these connections throughout the Billings Urban Area. The types of connections include improving the on-street bicycle and trails connectivity (east-west and north-south), filling in the missing links of sidewalk, joining key population and employment areas with roadways, and extending public transportation routes to areas that are underserved. Exhibits 11.7 and 11.8 illustrate existing trails within the Billings Urban Area.

Exhibit 11.7 Connecting Neighborhoods with Trails

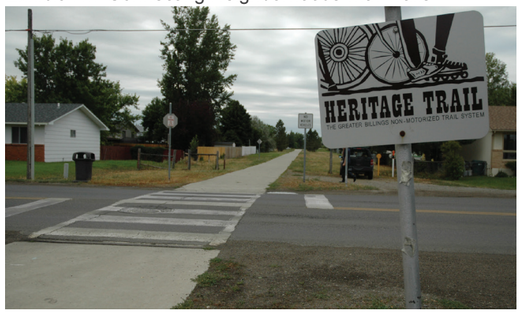


Exhibit 11.8 Trail Connection at MetraPark

ALTERNATIVE INTERSECTIONS AND INTERCHANGES

Alternative intersections and interchanges offer the potential to improve safety and reduce delay at a lower cost and with fewer impacts than traditional solutions. Some of these forms that may be applicable in the Billings Urban Area include at-grade intersections, such as the Displaced Left Turn (DLT), Median U-Turn (MUT), and Restricted Crossing U-Turn (RCUT), and interchanges, such

as a Diverging Diamond Interchange (DDI). At the national level, guidance is being developed based on recent research and practical application of these forms in communities throughout the U.S (11-1). In the Billings Urban Area, there are some intersections (i.e., King Avenue/24th Street, Grand Avenue/24th Street, and a few intersections on Main Street) with high traffic volumes and crash rates that could potentially see an enhancement from these types of intersection forms. These types of intersections and interchanges could be incorporated as alternatives for consideration in future design projects as potential solutions to enhance operations and safety. Exhibit 11.9 illustrates a MUT in Utah. Exhibit 11.10 illustrates a DDI in Minnesota.

Exhibit 11.9 Median U-Turn intersection in Draper, Utah

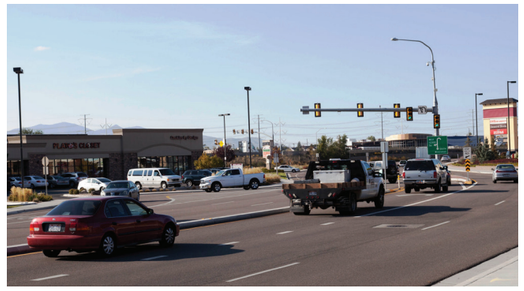
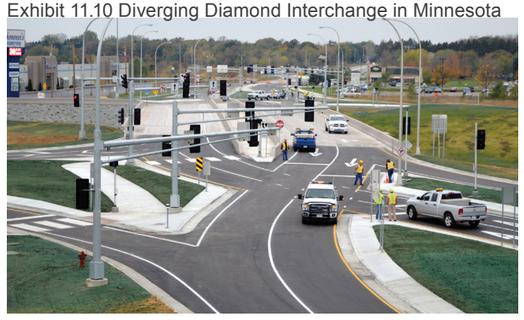


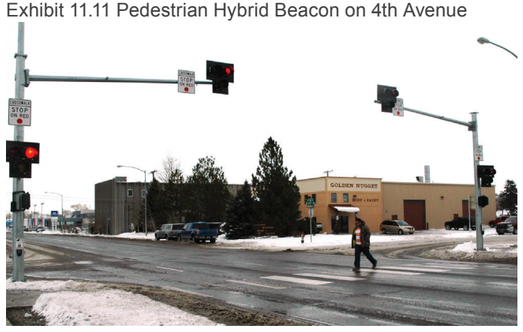
Exhibit 11.10 Diverging Diamond Interchange in Minnesota



SAFETY

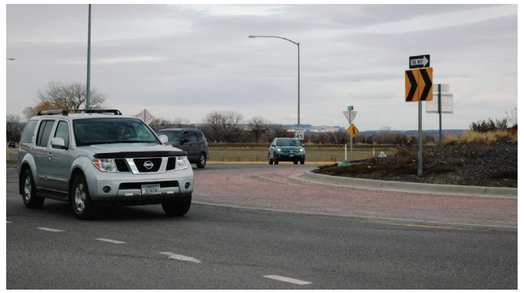
Along with some of the alternative intersection forms, other strategies to improve the safety performance of our roadways and intersections for all users include the use of medians and pedestrian crossing islands, roundabouts, road diets, pedestrian hybrid beacon, and flashing yellow left-turn arrows at signalized intersections. Many of these applications are already being incorporated in the planning and design efforts by the MPO and partnering agencies. The safety performance is enhanced with these treatments. For instance, the installation of a pedestrian hybrid beacon has been shown to provide the following safety benefits: 1) up to a 69 percent reduction in pedestrian crashes; and 2) up to a 29 percent reduction in total roadway crashes (11-2). Exhibit 11.11 illustrates the pedestrian hybrid beacon recently implemented on 4th Avenue in downtown Billings.

Exhibit 11.11 Pedestrian Hybrid Beacon on 4th Avenue



Roundabouts have three basic operational principles: 1) Geometry that results in a low-speed environment, creating substantial safety advantages; 2) Entering traffic yields to vehicles in the circulatory roadway, leading to excellent operational performance; and 3) Channelization at the entrance and deflection around a center island are designed to be effective in reducing conflict. Roundabouts have demonstrated significant reductions in fatal and injury crashes. The Highway Safety Manual (HSM) indicates the following: 1) by converting from a two-way stop control mechanism to a roundabout, a location can experience an 82 percent reduction in severe (injury/fatal) crashes and a 44 percent reduction in overall crashes, and 2) by converting from a signalized intersection to a roundabout, a location can experience a 78 percent reduction in severe (injury/fatal) crashes and a 48 percent reduction in overall crashes (11-3). Exhibit 11.12 illustrates a roundabout on the Shiloh Road Corridor.

Exhibit 11.12 Roundabout at Airport Road and 27th Street



To continue enhancing the safety performance of the transportation system, these strategies combined with education and enforcement are recommended for future transportation projects within the Billings Urban Area.

Transportation Projects to Address the Future Vision

The transportation projects in the LRTP are broken into committed, recommended, and illustrative types. Committed projects are those projects that are included in the STIP, MPO TIP, or City of Billings CIP. Recommended projects are projects that are expected to be fully funded by year 2035, but are not currently committed within the STIP, TIP, or CIP. The recommended projects were identified based on the input received during the planning process and projects identified in recent plans and the City's CIP.

Projects that are not expected to be funded by 2035, because of fiscal constraint, are considered illustrative, meaning that they could be included in the adopted LRTP if additional resources beyond those identified in the financial plan become available. Since there are a significant number of projects identified in the committed and recommended project list for streets and highways, the illustrative projects are shown for the streets and highways element as a reference. The illustrative projects are identified in the project lists for public transit, pedestrians, bicyclists, and multiuse trails in Chapters 5 and 8. A brief discussion on the illustrative projects is included with each element below. All project costs were converted to year of expenditure (YOE) dollars using a four-percent annual inflation (Source: FHWA). The following references and documents were used in development of this section.

- Montana Department of Transportation (11.4)
- Billings Urban Area Transportation Improvement Program (TIP), FY 2012-2016 (11.5)
- City of Billings FY 2015-2019 Capital Improvement Program (CIP) (11.6)
- City of Billings Proposed Budget FY 2015 (11.7)
- MET Transit Business Plan (11.8)

At this time, project priorities were not assigned to the list of projects within the LRTP. However, project prioritization is determined through the MPO's Transportation Improvement Program (TIP) process. Additionally, future LRTPs could take the project list and begin to incorporate a screening and prioritization process. Given the current level of funding committed to transportation infrastructure in the Billings Urban Area, most of the recommended projects are not anticipated to occur until after the next plan update. Therefore, it is reasonable that these projects and priorities be reviewed as part of the TIP process and during the next LRTP update.

STREETS AND HIGHWAYS

The streets and highways committed and recommended projects are necessary to provide system connectivity and accommodate expected future traffic demand. Additionally, these projects may include pedestrian and bicycle facilities to assist with development of a multimodal system. The intersection projects address specific capacity and/or safety problems. The congestion management projects include signal system upgrades and signal timing efforts to improve traffic flow and pedestrian timings at signalized intersections. These projects also support the rail and trucking element of the LRTP. Table 11.1 summarizes the committed and recommended projects for streets and highways. Table 11.2 summarizes the illustrative projects for streets and highways. The illustrative projects are included here for reference, since there are a significant number of projects identified in the committed and recommended project list for streets and highways.

PEDESTRIAN, BICYCLE, AND MULTIUSE TRAILS

The pedestrian, bicycle, and multiuse trails committed and recommended projects provide for pedestrian enhancements around MetraPark and US 87, new bike facilities on a few of the east-west corridors, and additional connectivity with multiuse trails. Additionally, the City includes a few annual programs that implement striping for bike lanes; curb, gutter, and sidewalk; and ramp replacement for ADA compliance. This type of program can be used to implement some of the pedestrian projects associated with the Safe Routes to School program. Table 11.3 summarizes the committed and recommended projects for pedestrians, bicycles, and multiuse trails.

The illustrative project list is fairly significant (identified in Chapter 8), since there are currently large gaps in the bicycle, pedestrian, and multiuse trails system. Additionally, there is a lot of support from the community for these projects. The MPO and partnering agencies should continue to monitor these projects and look for funding opportunities to implement some of the lower cost non-motorized projects.

PUBLIC TRANSPORTATION

The public transportation committed and recommended projects are focused on the purchase of new vehicles for operating the transit system. Table 11.4 summarizes the committed and recommended projects for public transportation.

All of the illustrative projects, identified in Chapter 5 are necessary for the growth of the Billings Urban Area. The illustrative projects provide new routes to areas not served by transit today and increase the amount of service provided on existing routes. However, at this time, the funding is not in place to implement these projects. Again, it is recommended that additional funding be pursued by the MPO and MET Transit to support future expansion of the public transportation system.

Table 11.1 Committed and Recommended Projects - Streets and Highways

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
Programmed Projects					
R2	32nd Street West - King Ave to Gabel Rd[1]	Reconstruct to a 3-lane urban roadway	Arterial Fee Fund	2019	$4,920,000
R4	Zimmerman Trail - Rimrock Rd to Highway 3[1,2]	Reconstruct to improve roadway geometry	Arterial Fee Fund, Local and Federal	2014	$8,600,000
R5	Poly Drive - 32nd St W to 38th St W[1]	Reconstruct to urban roadway	Arterial Fee Fund, SID Bonds	2015	$2,418,000
R6	36th Street West - Mt. Rushmore to Central Ave[1]	New roadway to connect 36th St to Central Ave	Gas Tax, Arterial Fee FUnd (if combined with R35)	2015	Project part of R35
R7	Calhoun Street - King Ave E to Underpass Ave[1]	Reconstruct to urban roadway	Gas Tax, TIFD	2015	$2,258,880
R8	Orchard Lane - King Ave E to State Ave[1]	Reconstruct to urban roadway	Gas Tax, TIFD	2016	$3,150,360
R9	Wicks Lane - Bench Blvd to Hawthorne Ln[1]	Reconstruct to urban roadway	Arterial Fee Fund, Developer Contributions	2018	$3,340,800
R10	I-90 Bridge Crossing[2,3]	Reconstruct section of bridge crossing Yellowstone River	STP Bridge and IM	2019	$42,240,000
R11	Grand Avenue - Shiloh Rd to 54th St W[1]	Reconstruct to 5-lane urban roadway (design-only)	Arterial Fee Fund	2018	$928,000
R13	Bench Boulevard – Phase II - Hilltop Rd to Highway 312[2]	Reconstruct roadway	STPU	2015	$15,808,000
R19	Central Avenue – 19th Ave to 6th Ave[1]	Road diet to 3 Lanes, part of overlay project	Operations & Maintenance	2019	$1,000,000
R23	Billings Bypass[2]	New roadway connecting Interstate at Johnson Ln to Hwy 87/Hwy312	Earmark, CMAQ, STPU, NH, IM, Bridge	2014	$111,000,000
R26	Barrett Road – Hawthorne to Bitterroot Dr[1]	Reconstruct – 3-lane cross section	Gas Tax	2015	$364,000
R27	27th Street – 1st Ave S to Airport Rd[2,3]	Mill/overlay with updated traffic signals, ADA work, and luminaires	NH	2015	$12,912,064
R28	Yellowstone Bridge Crossing – Flood Repair[3]	Scour protection around one pier of Yellowstone River bridge/east bridge	Bridge Rehabilitation & STPB	2014	$599,000
R29	Main Street - limits to be determined[3]	Pavement preservation with ADA work (3.7 miles)	NH	2017	$1,784,681
R30	D5 Interstate Fencing[3]	Replace existing deteriorated fence on I-90	IM	2014	$650,000
R31	4th Avenue North – N 13th St to Main St[3]	Pavement preservation with ADA work (0.5 miles)	UPP	2015	$522,057
R32	1st Ave S/Minnesota Ave/13th – 27th St to 4th Ave N[3]	Pavement preservation with ADA work (1.5 miles)	UPP	2015	$1,059,508
R34	Grand Avenue – 32nd St to Shiloh Rd[1]	Reconstruct – cross section to be determined	Arterial Fee Fund	2016	$3,024,000
R35	Central Avenue – 35th St to Shiloh Rd[1]	Reconstruct – cross section to be determined	Arterial Fee Fund, Gas Tax	2016	$3,315,600
-	Shawnee Drive Improvements[1]	Road reconstruction	Gas Tax	2015	$67,600
I2	32nd St W/Gabel Rd[1]	Install traffic signal to improve capacity and safety	Arterial Fee Fund	2015	$312,000
I4	Poly Dr/Virginia Ln[1]	Improve intersection capacity, operations, and safety	Arterial Fee Fund	2015	$426,400
I5	Monad Rd/Daniel Street[1]	Improve intersection capacity, operations, and safety	Arterial Fee Fund	2016	$432,000
I6	4th Ave N/Division St[1]	Improve intersection capacity, operations, and safety	Arterial Fee Fund	2016	$345,600

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
I7	24th St W/King Ave[1]	Improve intersection capacity, operations, and safety (interm capacity improvements)	Arterial Fee Fund	2017	$224,000
I8	Central Ave/24th St W[1]	Improve intersection capacity, operations, and safety	Gas Tax	2018	$464,000
I11	Underpass Avenue Improvements[3]	Study to determine the appropriate treatment for reconstruction of the intersection at Underpass Ave/State Ave and construction to follow	CMAQ, NH	2014	$202,740
I14	Poly Drive/Zimmerman[1]	Install traffic signal to improve capacity and safety	Arterial Fee Fund, SID Bonds	2014	Project part of R5
I26	King Avenue West & 56th Street	SF - Construct a roundabout at this intersection	HSIP	2015	$2,991,690
I27	Central Avenue & 56th Street	SF - Construct a roundabout at this intersection	HSIP	2017	$2,699,200
I28	13th Street & Parkhill Road	SF - Construct a traffic signal at this intersection	HSIP	2015	$412,880
-	Grand Avenue and 54th Intersection[1]	Improvements of the intersection	Arterial Fee Fund, Developer Contributions	2015	$182,000
CM1	32nd Street West – King Ave to Zimmerman	Update signal timing for 4 signals	HSIP, CMAQ, Arterial Fee Fund	2014	$40,000
CM2	King Avenue West – Frontage Rd to 32nd St W[2,3]	Update signal timing for 10 signals	HSIP	2014	$184,419
CM6	24th Street West – King Ave to Grand Ave[1]	Update signal controllers and signal timing for 11 signals	Arterial Fee Fund	2017	$246,400
-	Intersection Capacity Improvements[1]	Evaluate and construct improvements to selected intersection trouble areas	Arterial Fee Fund	2019	$420,000
			Total Committed Streets and Highways Project Costs		**$229,745,879**
Recommended Projects					
R12	Inner Belt Loop - Alkali Creek Rd to Highway 3	New roadway connecting Wicks Ln to Zimmerman Trail	Arterial Fee Fund, STPU	2026	$18,500,000
I12	King Ave/24th St	Evaluate intersection to identify alternative intersection treatment (i.e. displaced left turn, median u-turn, etc.)	Arterial Fee Fund, HSIP	2015	$260,000
I13	Grand Ave/24th St	Evaluate intersection to identify alternative intersection treatment (i.e. displaced left turn, median u-turn, etc.)	Arterial Fee Fund, HSIP	2016	$270,000
CM3	Grand Avenue – 3rd St W to 24th St W[4]	Update signal timing for 10 signals	HSIP, Arterial Fee Fund	2017	$112,000
CM4	Broadwater Avenue – 5th St W to Zimmerman[4]	Update signal timing for 8 signals	HSIP, Arterial Fee Fund	2018	$92,800
CM5	Central Avenue – 6th St W to Zimmerman[4]	Update signal timing for 10 signals	HSIP, Arterial Fee Fund	2018	$116,000
CM7	27th Street – State Ave to Poly Dr[4]	Update signal timing for 11 signals	HSIP, Arterial Fee Fund	2015	$114,400
CM8	Main Street – 1st Ave N to Permberton Ln[4]	Update signal timing for 10 signals	HSIP, Arterial Fee Fund	2019	$120,000
CM9	Division Street – Broadwater Ave to 4th Ave N[4]	Update signal timing for 3 signals	HSIP, Arterial Fee Fund	2019	$36,000
CM10	Grand Avenue – 24th St W to Zimmerman[4]	Update signal timing for 3 signals	HSIP, Arterial Fee Fund	2019	$36,000
CM11	Rimrock Road – 38th St W to 13th St W[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2020	$62,000
CM12	15th Street West – Central Ave to Grand Ave[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2020	$62,000
CM13	Wicks Lane – Governors Blvd to Bench Blvd[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2023	$68,000
CM14	State Avenue – 6th St Underpass to Washington St[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2023	$66,000
CM15	19th Street West – Monad Rd to Grand Ave[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2022	$66,000
CM16	17th Street West – Grand Ave to Rimrock[4]	Update signal timing for 5 signals	HSIP, Arterial Fee Fund	2022	$66,000

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
CM17	Monad Road – 19th St W to 32nd St W[4]	Update signal timing for 4 signals	HSIP, Arterial Fee Fund	2021	$51,200
CM18	Governors Boulevard/Hilltop Road – Wicks Ln to Main St	Update signal timing for 3 signals	HSIP, Arterial Fee Fund	2021	$38,400
CM19	ITS Signage and Advanced Warning System	Implement a signage and advanced warning system to inform transportation users of crossing delays due to incoming and stopped trains	HSIP, Arterial Fee Fund	2017	$560,000
CM20	Downtown Billings Signal Upgrades[3]	Traffic signal controller and signal timing upgrades at 36 signals in the down-town area, excluding 27th Street	HSIP, Arterial Fee Fund	2015	$318,110
CM21	Downtown Billings Signal Upgrades[3]	Traffic signal controller and timing upgrades at 13 signals in downtown	HSIP, Arterial Fee Fund	2015	$318,110
CM22	Downtown Billings Signal Upgrades[3]	Traffic signal controller and timing upgrades in the downtown area	HSIP, Arterial Fee Fund	2016	$3,413,784
CM23	S. Billings Boulevard Signal Timing[3]	Traffic signal controller and timing upgrades at 6 signals on S Billings Blvd.	HSIP, Arterial Fee Fund	2016	$100,440
CM24	Lockwood Interchange Signal Timing[3]	Traffic signal controller and timing upgrades at 3 signals	HSIP, Arterial Fee Fund	2016	$50,220
CM25	Citywide Signal Timing[3]	Traffic signal controller and timing upgrades at 24 signals within Billings	HSIP, Arterial Fee Fund	2016	$401,760
			Total Recommended Streets and Highways Project Costs		**$39,187,849**

Source: [1]City of Billings Capital Improvement Program (FY 2015-2019)
[2]Billings Urban Area Transportation Improvement Program (FY 2012-2016)
[3]Montana Department of Transportation
[4]City of Billings

Project ID: R - Roadways
I - Intersections
CM - Congestion Management

Table 11.2 Illustrative Projects - Streets and Highways (Not funded in LRTP—after 2035)

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost (Represent Year 2035)
Illustrative Projects					
R1	Grand Avenue - 17th St W to 24th St	Reconstruct to a 5-lane urban roadway	To be determined	Beyond 2035	$18,768,000
R3	Old Hardin Road - Lockwood Interchange to Johnson Ln	Reconstruct to a 3-lane urban roadway	To be determined	Beyond 2035	$10,488,000
R14	1st Avenue South-Minnesota Avenue - 21st St to N 13th St	Reconstruct to urban roadway	To be determined	Beyond 2035	$1,840,000
R15	Pemberton Lane - BBWA to Lake Elmo Dr	Reconstruct to urban roadway	To be determined	Beyond 2035	$5,336,000
R16	Broadwater Avenue – BBWA to Shiloh Rd	Reconstruct to urban roadway	To be determined	Beyond 2035	$7,360,000
R17	Rimrock Road – 56th to 62nd	Reconstruct – cross section to be determined	To be determined	Beyond 2035	$5,520,000
R18	54th Street West – Grand Ave to Rimrock Rd	Reconstruct – cross section to be determined	To be determined	Beyond 2035	$5,520,000
R19	Central Avenue – 19th Ave to 6th Ave	Road diet to 3 Lanes	To be determined	Beyond 2035	$12,512,000
R20	48th Street West – King Ave to Grand Ave	Reconstruct – cross section to be determined	To be determined	Beyond 2035	$10,120,000
R21	King Avenue West – 44th St to 56th St	Reconstruct – cross section to be determined	To be determined	Beyond 2035	$7,728,000
R22	King Avenue East – Orchard Ln to Sugar Ave	Reconstruct to a 3-lane urban roadway	To be determined	Beyond 2035	$5,888,000
R24	N 21st Street – Montana Ave to 1st Ave S	Reconstruct railroad underpass	To be determined	Beyond 2035	$5,615,680

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost (Represent Year 2035)
R25	N 13th Street – 1st Ave N to Minnesota Ave	Reconstruct railroad underpass	To be determined	Beyond 2035	$18,400,000
R33	1st Avenue North - Division St to Main St	Reconstruct existing cross section	To be determined	Beyond 2035	$12,880,000
R36	Highway 3 to Molt Road Connection	Construct a new Roadway connecting Highway 3 to Molt Road	To be determined	Beyond 2035	$21,353,412
I1	Rimrock Rd/N 27th St	Improve intersection capacity, operations, and safety	To be determined	Beyond 2035	$8,648,000
I3	1st Ave/US 87 Roundabout	Install roundabout to improve operations and safety	To be determined	Beyond 2035	$11,040,000
I9	Airport Rd/Main St	Improve intersection capacity, operations, and safety	To be determined	Beyond 2035	$8,280,000
I10	Rimrock Rd/Virginia Ln	Improve intersection capacity, operations, and safety	To be determined	Beyond 2035	$754,400
I15	Division/Grand/6th Ave/N32nd St	Improve intersection capacity, operations, and safety	To be determined	Beyond 2035	$373,042
I16	Division/Broadway/1st Ave N	Improve intersection capacity, operations, and safety	To be determined	Beyond 2035	$460,000
I17	Lockwood Road & N Frontage Road	Reconfiguration of existing intersection	To be determined	Beyond 2035	$460,000
I19	Johnson Lane & Old Hardin Road	Intersection improvements and access management around Johnson Lane Interchange	To be determined	Beyond 2035	$1,030,400
I20	Shiloh Interchange	Geometric improvements to improve operations and safety	To be determined	Beyond 2035	$1,030,400
I21	South Billings Blvd Interchange	Additional EB and WB mainline lanes under and through the Interchange	To be determined	Beyond 2035	$910,800
I22	27th Street Interchange	Construct additional EB and WB mainline lanes under and through Interchange. Restripe EB off-ramp and improve pedestrian facilities	To be determined	Beyond 2035	$1,159,200
I24	Johnson Ln Interchange	Geometric improvements to improve operations and safety	To be determined	Beyond 2035	$3,496,000
I25A	West Billings Interchange	Update geometry to match MDT standards, improve landscaping and improve pedestrian facilities	To be determined	Beyond 2035	$2,944,000
I25B	West Billings Interchange	Construct additional EB and WB mainline lanes through interchange, modify vertical curve, reconstruct bridge segments and restripe WB off-ramp at West Billings Interchange.	To be determined	Beyond 2035	$3,496,000
			Total Illustrative Streets and Highways Project Costs		**$193,683,654**

Table 11.3 Committed and Recommended Projects – Pedestrian, Bicycle, and Multiuse Trails

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
Committed Projects					
P9	SRTS - Poly Drive Sidewalk Improvements	Pedestrian Improvements at the Poly Drive and Arvin Road intersection	CTEP, BikeNet, Private Contribution	2014	$97,147
BL49	6th Avenue North	Provide bicycle facilities along 6th Avenue North to facilitate a safe connection from the east of Swords Lane on the north side of Airport Road	CTEP, TIFD, Private contribution	2016	$540,000
M3	Alkali Creek Trail	Extend trail from Swords Park northeast along Alkali Creek or Swords Lane to Main Street Pedestrian Underpass	TAP, BikeNet	2017	$280,000

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
M3	Alkali Creek Trail	Extend trail from Swords Park northeast along Alkali Creek or Swords Lane to Main Street Pedestrian Underpass	TAP, BikeNet	2017	$280,000
M16	Downtown - Coulson Park Trail Connection	Extend trail from South 25th Street to 8th Ave. South to South 26th Street to Lillian Avenue and Coulson Park Trail	TAP, Private Contribution	2016	$1,080,000
M22	SRTS - Arrowhead School Path	Construct a 10-foot wide multiuse path from Shiloh Road to Arrowhead Elementary School	CTEP, BikeNet, Private Contribution	2014	$84,000
M35	Transtech Connector	Bring McCail trail segment up to standards and complete connection to Transtech Center Trail at 32nd Street West	TAP, RTP, BikeNet, Private contribution	2017	$537,600
M38	Riverfront Park	Construct a multi-use trail from Mystic Park Trails to Riverfront Park Trails	TAP, Private Contribution, RTP	2015	$1,560,000
M42	Ponderosa Elementary School Multi Use Connector	Extend trail from Kings Green Subdivision to Ponderosa School	CTEP, TIFD	2015	$187,200
M44	Rim Top Trail from 27th Street West/Airport Road to Zimmerman Trail Vicinity	New Trail along the Rims resulting from Highway 3 corridor study	HSIP, TAP, Private Contribution, BikeNet	2016	$1,296,000
M44	Downtown BBWA Corridor Trail/On Street Facilities	Complete Trail through MSU-B Campus in alignment with MSU-B Master Plan and trail/on-street facilities along Poly Dr. through Virginia Lane intersection to 13th/Poly Drive	TAP, Gas Tax	2016	$226,800
M45	Swords Park/6th Avenue North Connector	Trail connection from Swords Park Trail/Airport Road/6th Avenue N to existing sidewalk on 6th Avenue N	CTEP, BikeNet	2015	$124,800
-	Bike Lane Striping	Provide program funding for striping of bike lanes as needs and opportunities arise	TAP, BikeNet	2016	$124,200
-	Misc. Curb, Gutter, and Sidewalk	Annual replacement and infill program of curb, gutter, and sidewalk (Cost includes 5-year total)	Sidewalk Bonds, Gas Tax, Storm Drain	2015-2019	$2,010,500
-	Annual ADA Replacement	Replace ADA ramps in accordance with the signed agreement between the City of Billings and the Department of Justice (Cost includes 5-year total)	Arterial Fee Fund, Gas Tax	2015-2019	$1,000,000
			Total Committed Pedestrian, Bicycle, and Multiuse Trail Project Costs		**$9,629,717**
Recommended Projects					
P29	1st Ave N/US 87/ Main St (Exposition Dr)	Add pedestrian crossings to existing intersections	TAP, TIFD, HSIP	2020	$34,720
P30	US 87 Pedestrian Easement	1.0 miles adjacent to Metra Park from Airport Rd to Yellowstone River	TAP, TIFD	2025	$532,224
P31	Metra Park Pedestrian Overpass	Crossing Main St (Exposition Dr) near 3rd Ave N	TAP, TIFD	2025	$2,419,200
P32	N 10th St/1st Ave N	Add pedestrian crossings to existing intersection	TAP, TIFD	2025	$403,200
P33	1st Ave N/US 87 Sidewalk	Add 0.7 miles of sidewalks to N 10th Street to Yellowstone River	TAP, TIFD, HSIP	2025	$372,557
P34	US 87 Sidewalks	Add 0.3 miles of sidewalks to northside of Bridge crossing Yellowstone River	TAP, TIFD, HSIP	2025	$159,667
P38	Poly Drive Sidewalks	Add sidewalks between 13th and Virginia (BL1 includes the bike lane project)	CTEP	2014	$120,000
P39	Calhoun Lane Sidewalks	Construct new 5-foot sidewalk on both sides of Calhoun Lane from King Avenue to State	CTEP	2014	$173,000
P40	Jackson Street Sidewalks	Construct new 5-foot sidewalk on west side of Jackson/crossing at Orchard	CTEP	2014	$216,500
P41	Broadwater Elementary School	Install sidewalk, fencing, and landscaping	CTEP	2014	$131,290
BL5	Lewis Avenue	Add bike lanes from Parkview Dr to Division St	TAP, BikeNet	2025	$63,867
BL16	Central Avenue	Add bike lanes from Shiloh Rd to Access St	TAP, BikeNet	2025	$372,441
M40	25th Street Railroad Bridge	Construct a multi-use trail from Montana Avenue to Minnesota Avenue	TAP, BikeNet	2025	$2,448,000

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
M46	34th Street Pedestrian Bridge	Construct a multi-use bridge to cross the tracks near 34th Street	TAP, BikeNet	2025	$2,880,000
M47	44th Street West	Construct a multiuse bike/pedestrian path along 44th Street from Shiloh Conservation Area to King Avenue West	TAP, BikeNet	2025	$146,880
M48	Wicks Lane	Construct a multiuse bike/pedestrian path along south side of Wicks Lane to the Inner Belt Loop	TAP, BikeNet	2025	$367,200
M49	Heights Middle School Path	Construct a trail from the Kiwanis trail to New Heights Middle School near Bench and Barrett	TAP, BikeNet	2025	$189,058
M50	King Avenue West Sidewalks, 32nd to BBWA	Enhance the existing sidewalk to a multiuse path between 32nd and BBWA	TAP, BikeNet	2025	$110,160
			Total Recommended Pedestrian, Bicycle, and Multiuse Trail Project Costs		**$11,139,964**

Table 11.4 Committed and Recommended Projects – Public Transit

Project ID	Project Name	Project Description	Eligible Funding Source	Anticipated Year of Construction	Year of Expenditure Cost
Committed Projects					
-	Transit Capital[1]	Replacement vehicles	FTA Section 5310 and local funds	2015	$210,000
-	Transit Capital[1]	Replacement vehicles	FTA Section 5310 and local funds	2016	$177,840
-	Transit Capital[1]	Replacement vehicles	FTA Section 5339 and local funds	2015	$410,211
			Total Committed Public Transit Project Costs		**$798,051**
Recommended Projects					
-	Transit Capital (2017-2020)	Replacement vehicles	FTA Section 5310, Section 5339, and local funds	2017-2020	$1,483,453
-	Transit Capital (2021-2025)	Replacement vehicles	FTA Section 5310, Section 5339, and local funds	2021-2025	$1,985,887
-	Transit Capital (2026-2030)	Replacement vehicles	FTA Section 5310, Section 5339, and local funds	2026-2030	$2,261,521
-	Transit Capital (2031-2035)	Replacement vehicles	FTA Section 5310, Section 5339, and local funds	2031-2035	$3,291,943
			Total Recommended Public Transit Project Costs		**$9,022,804**

[1]Billings Urban Area Transportation Improvement Program (FY 2012-2016)

Utilizing Performance Measures in Future Planning Efforts

The 2035 LRTP network consists of a comprehensive transportation network for streets and highways, public transportation, pedestrian, bicycle, and multiuse trails. This network is discussed in the early chapters and further explained in this chapter regarding the specific projects that are committed and recommended for the LRTP.

Simply examining roadway capacity and automobile travel times as a means of monitoring performance of the transportation system is no longer sufficient. Preliminary performance measures were identified as part of this planning process and highlighted in Chapter 1. The performance measures are directly related to the goals and objectives outlined in Chapter 1 to provide a means to measure progress toward achieving the goals and objectives. The performance measures incorporate all transportation modes, safety, and environmental elements to help with plan implementation and monitoring. These preliminary measures should be incorporated into the planning process moving forward with the MPO and partnering agencies. As part of the next LRTP update, these performance measures can be reviewed and assessed to better understand any missing data needs and if the performance measures identified are appropriate for the region.

Summary of LRTP Recommendations

The recommended 2035 LRTP provides the framework for the development, operations, and maintenance of the multimodal transportation system to meet the travel needs of the Billings Urban Area through the year 2035. The LRTP meets the requirements set forth by the current federal legislation and regulations, but most importantly incorporates the community's desires into the transportation planning process. Table 11.5 summarizes the capital costs of the recommended LRTP projects by mode.

Table 11.5 Summary of LRTP Projects Cost

Mode	Committed	Recommended	2035 LRTP Total
Streets and Highways	$229,745,879	$25,311,849	$255,057,728
Pedestrian, Bicycle, and Multiuse Trails	$9,629,717	$11,139,964	$20,769,681
Public Transportation	$798,051	$9,022,804	$9,820,855
Total Projects	**$240,173,647**	**$45,474,616**	**$285,648,263**

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