



# GREAT FALLS AREA

Long Range Transportation Plan - 2018 Update

## APPENDIX F: Facility Recommendations



# FACILITY RECOMMENDATIONS

October 23, 2019

*Inclusive of Amendment #1*



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Long Range Transportation Plan - 2018 Update



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# FACILITY RECOMMENDATIONS

## 1.0 INTRODUCTION

This memorandum presents a variety of recommended improvements for the Great Falls area transportation system aimed at addressing current and anticipated future needs. Recommendations contained in the 2014 LRTP were reviewed and updated to reflect their current status and the changing needs and desires of the Great Falls community. A combination of public outreach, project solicitation from partnering agencies, travel demand modeling, traffic engineering analysis, and policy choices to support the identified goals and objectives were utilized during development of the 2014 LRTP to guide the identification of recommendations. Public and stakeholder input was solicited during development of the 2018 LRTP to update the recommendations. In most cases, the recommended projects are needed to bring roadways up to current standards, address existing operational concerns, or meet anticipated traffic demands for the year 2038.

As a Metropolitan Planning Organization (MPO), Great Falls is required to develop an LRTP that has a prioritized, fiscally constrained menu of projects. Projects are categorized into categories based on status and availability of funding. Recommendations categorized as “committed” are those with dedicated funding as identified in either the Transportation Improvement Program (TIP), through local funds, transit funds, private funds, or other sources and are planned to be completed in a five-year time frame (2018-2022). “Annual programs” are programs that receive an annual allocation of funding but do not have specific projects assigned to them, these programs occur yearly through the 20-year planning horizon (2018-2038). Projects categorized as “recommended”, are recommended to be completed within the planning horizon (year 2038), but may need further analysis or identification of funding before being fully committed to. “Illustrative” projects are currently unfunded recommendations that are supported by a sponsoring agency, but are not prioritized for implementation over the planning horizon.

Also included are non-motorized recommendations which address needs for accommodating pedestrians and bicyclists in the Great Falls Area, and to provide for mode choice for transportation users. Although estimated costs are given for the non-motorized recommendations, neither a funding source or a year of expenditure are assigned to the projects. It is expected that the non-motorized projects be completed in conjunction with other facility recommendations or as funding becomes available.

## 2.0 PAST PLANNING RECOMMENDATIONS

This section includes a summary of recommendations found in past planning documents within the LRTP study area. Each recommendation provides a description and status of the project (completed, partially completed, or not completed) as well as if the recommendation has been carried forward as part of the current LRTP recommendations. Some of the recommendations from past planning efforts have not been completed and were not included in this report for a variety of reasons. These reasons may include lack of feasibility, changed traffic conditions, or the project may be considered outside the scope of this LRTP.

### 2.1. RIVER DRIVE CORRIDOR STUDY

Completion of a corridor study for River Drive between 15<sup>th</sup> Street North and 38<sup>th</sup> Street North was recommended in the 2014 LRTP as MSN-1. Traffic analyses found that the existing two-lane facility would be inadequate to handle future traffic volumes and an expansion of the existing facility would be needed by the year 2035. A corridor study was recommended due to a high level of public interest in the

corridor and its close proximity to the Missouri River and River's Edge Trail. An assessment of the viability of non-motorized amenities was also recommended as previous public feedback identified this route as an important gap in the visionary bicycle network for the community.

The *River Drive Corridor Study*<sup>1</sup> was completed in September of 2016. Eight spot improvements and two combined improvement options for the study corridor were identified. The two combined options recommended the entire be reconstructed in two phases. The improvement options were each given an estimated implementation timeframe; short-term (0-5 years), mid-term (5-10 years), and long-term (10-20 years). None of the recommended improvement options have been completed and the two combined improvement options have been carried forward in the recommendations for the 2018 LRTP. **Table 1** presents the recommendations from the 2016 corridor study and their status for the current LRTP.

**Table 1: Recommendations from River Drive Corridor Study**

ID	Improvement Option/Location	Past Recommendation	Status for 2018 LRTP
<b>SPOT IMPROVEMENT OPTIONS</b>			
1.	15 <sup>th</sup> Street North Intersection	Mid-term. Extend the westbound right-turn lane to accommodate vehicle queues.	<b>NOT COMPLETE</b> Included with Combined Option 1
2.	19 <sup>th</sup> Street North Intersection	Short-term. Evaluate and install enhanced non-motorized crossing treatments.	<b>NOT COMPLETE</b> Included with Combined Option 1
3.	Big Stack Mobile Home Court Approach	Mid-term. Reconstruct or relocated the existing approach to River Drive.	<b>NOT COMPLETE</b> Included with Combined Option 1
4.	Business District Access	Mid-term. Reconstruct roadway to provide for a center left-turn lane, bike lanes, and sidewalk on the south side.	<b>NOT COMPLETE</b> Included with Combined Option 1
5.	25 <sup>th</sup> Street North Intersection	Mid-term. Install additional traffic control such as a traffic signal or roundabout in coordination with corridor improvement options.	<b>NOT COMPLETE</b> Included with Combined Option 1
6.	Eagle Falls Golf Club Access	Mid-term. Construct a new access along River Drive North near Eagle Falls Golf Club.	<b>NOT COMPLETE</b> Included with Combined Option 2
7.	Rail Road Crossing Review	Short-term. Perform a diagnostic review of the railroad crossing.	<b>NOT COMPLETE</b>
8.	River Drive North Reconstruction	Mid- to Long-term. Reconstruct to include one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations.	<b>NOT COMPLETE</b> Included with Combined Options 1 and 2
<b>COMBINED IMPROVEMENT OPTIONS</b>			
1.	Segment 1 – 15 <sup>th</sup> Street North to 25 <sup>th</sup> Street North	Mid- to Long-term. Include recommendations from options 1, 2, 3, 4, 5, and 8.	<b>NOT COMPLETE</b> Modified and Included as <b>R-1</b>
2.	Segment 2 – 25 <sup>th</sup> Street North to 38 <sup>th</sup> Street North	Mid- to Long-term. Include recommendations from options 6 and 8.	<b>NOT COMPLETE</b> Modified and Included as <b>I-38</b>

<sup>1</sup> River Drive Corridor Study, Montana Department of Transportation, September 19, 2016, <http://www.mdt.mt.gov/pubinvolve/riverdrive/docs/RiverDrive-Final-Report.pdf>

## 2.2. I-15 GORE HILL TO EMERSON JUNCTION CORRIDOR PLANNING STUDY

The 2014 LRTP identified I-15 through Great Falls as a prime candidate for a corridor study. The recommendation, MSN-4, noted that both the Emerson Junction and Gore Hill interchanges were in need of improvements. Needs for added lanes and operational improvements on I-15 and I-315 were also identified. The intent of the Corridor Study was to assist in identifying potential locations, priorities, costs and scope of improvements.

As recommended, the *I-15 Gore Hill to Emerson Junction Corridor Study*<sup>2</sup> was completed in May of 2015 and included I-15 between Gore Hill and Emerson Junction interchanges, as well as I-315 and 10<sup>th</sup> Avenue South to the west of the Missouri River. A total of 14 individual recommended improvement options were identified in the final report. The improvement options were given a recommended timeframe for implementation; short-term (0-5 years), mid-term (5-10 years), and long-term (10-20 years). Of the 14 projects, none have been completed and 5 have been carried forward in the recommendations for the 2018 LRTP. **Table 2** presents the recommendations from the 2015 corridor study and their status for the current LRTP.

**Table 2: Recommendations from I-15 Corridor Planning Study**

ID	Improvement Option/Location	Past Recommendation	Status for 2018 LRTP
<b>INTERSTATE 15</b>			
1.0	Southbound Auxiliary Lane (RP 278.1 to 278.5)	Mid-term. Construct auxiliary lane between Gore Hill and 10 <sup>th</sup> Ave S interchanges in the southbound direction.	<b>IN PROGRESS</b> Modified and Included as <b>R-11</b>
2(a)	Roadway Illumination (RP 282.3 to 283.0)	Mid-term. Install additional illumination along the Interstate.	<b>NOT COMPLETE</b>
2(b)	Reconstruct Roadway (RP 282.3 to 283.0)	Long-term. Reconstruct roadway and bridge structures to meet current design standards.	<b>NOT COMPLETE</b>
<b>INTERSTATE 315</b>			
3.0	Pavement Rehabilitation (RP 0.0 to 1.4)	Mid-term. Resurface both directions of I-315.	<b>NOT COMPLETE</b> Modified and Included as <b>C-16</b>
4.0	Bridge Deck Treatment	Mid-term. Rehabilitate bridge decks on I-15 Overpass (RP 0.01), 14 <sup>th</sup> St SW Overpass (EB), and 14 <sup>th</sup> St SW Overpass (WB).	<b>NOT COMPLETE</b> Modified and Included as <b>C-2</b>
5.0	Diagrammatic Guide Signing (10 <sup>th</sup> Ave S to 14 <sup>th</sup> St SW)	Short-term. Install overhead diagrammatic guide signage for eastbound traffic.	<b>NOT COMPLETE</b>
6.0	Westbound Auxiliary Lane (14 <sup>th</sup> St SW to 10 <sup>th</sup> Ave S)	Mid-term. Reconstruct I-315 westbound and the I-15 on-ramp to provide an auxiliary lane.	<b>NOT COMPLETE</b>
7.0	Westbound Auxiliary Lane (Fox Farm Rd to 14 <sup>th</sup> St SW)	Mid-term. Reconstruct I-315 westbound and the Fox Farm Road intersection to provide an auxiliary travel lane.	<b>NOT COMPLETE</b>
<b>INTERCHANGES</b>			
8.0	Lengthen Southbound Off-ramp (10 <sup>th</sup> Ave S Interchange)	Mid-term. Lengthen southbound off-ramp.	<b>NOT COMPLETE</b>
9.0	Modify Lane Merge (Central Ave West of Interchange)	Short-term. Modify signing and striping.	<b>NOT COMPLETE</b>
10.0	Feasibility Analysis (Emerson Junction)	Mid-term. Secure a local project sponsor to fund an operational analysis/feasibility study of the Emerson Junction Interchange.	<b>NOT COMPLETE</b> Modified and Included as <b>R-10</b>

<sup>2</sup> I-15 Gore Hill to Emerson Junction Corridor Planning Study, Montana Department of Transportation, July 21, 2015, [http://www.mdt.mt.gov/pubinvolve/i15/docs/i-15\\_Final.pdf](http://www.mdt.mt.gov/pubinvolve/i15/docs/i-15_Final.pdf)

ID	Improvement Option/Location	Past Recommendation	Status for 2018 LRTP
<b>INTERSECTIONS</b>			
11.0	Intersection Improvements (Gore Hill Interchange)	Mid-term. Install additional traffic control such as roundabouts or traffic signals.	<b>IN PROGRESS</b> Modified and Included as <b>R-11</b>
12.0	Intersection Improvements (Central Ave Interchange)	Long-term. Install traffic control such as roundabouts or traffic signals.	<b>NOT COMPLETE</b>
13.0	Intersection Improvements (Fox Farm Intersection)	Mid-term. Install dual eastbound left-turn lanes.	<b>NOT COMPLETE</b> Modified and Included as <b>R-2</b>

### 3.0 COMPLETED PROJECTS (2014 LRTP)

Since completion of the 2014 LRTP, the City of Great Falls, Cascade County, and MDT have completed various projects in the LRTP study area. Some of the projects were already committed at the time of the 2014 LRTP and have since been completed. Others were recommended in the plan and have progressed towards project completion in the past four years. The projects which have been completed or are currently in progress will be removed from the recommendations for the 2018 LRTP. **Table 3** presents the projects which were recommended in the 2014 LRTP and have been either completed or are in progress.

**Table 3: Completed Recommendations From 2014 LRTP**

Project	Improvement Option/Location	Past Recommendation	Status for 2018 LRTP
<b>COMMITTED SHORT RANGE PROJECTS</b>			
CSR-1	13 <sup>th</sup> Street South (29 <sup>th</sup> Avenue South to Lower River Road)	Asphalt overlay and chip seal 13 <sup>th</sup> Street South for approximately 2.75 miles. The segment of 13 <sup>th</sup> Street South is in poor condition with varying levels of deterioration.	<b>COMPLETE</b>
CSR-2	Flood Road (Delea Drive to Woodland Estates Road)	Asphalt overlay Flood Road between Delea Drive and Dick Road (1.3 miles), and chip seal between Delea Drive and Woodland Estates Road (2.4 miles).	<b>COMPLETE</b>
CSR-3	MACI Traffic Flow Improvements - 10 <sup>th</sup> Avenue South Signals (UPN 8036-4)	Signal timing & controller upgrades along 10 <sup>th</sup> Avenue South.	<b>COMPLETE</b>
CSR-4	MACI Traffic Flow Improvements – 3 <sup>rd</sup> Street NW Signals (UPN 8036-5)	Signal timing & controller upgrades along 10 <sup>th</sup> Avenue South.	<b>COMPLETE</b>
CSR-5	GTFLS Signal Borders (UPN 7981)	Install retroreflective borders on mainline signals on 10 <sup>th</sup> Avenue South.	<b>COMPLETE</b>
CSR-6	GTFLS Wrong Way Signage – Phase 1 (UPN 8002)	Install wrong way signage at numerous locations on I-15.	<b>COMPLETE</b>
CSR-7	GTFLS Horizontal Curve Signing (UPN 7980)	Install upgraded signing at numerous locations.	<b>PARTIALLY COMPLETE</b>
CSR-8	GTFLS Advanced Signal Flasher (UPN 8119)	Install advanced signal flasher.	<b>COMPLETE</b>
CSR-9	GTFLS Urban Maintenance Program (UPN 7994)	Perform chip seals, overlays and related maintenance activities on urban routes (year 2014).	<b>COMPLETE</b>
<b>RECOMMENDED SHORT RANGE</b>			
SR-3	10 <sup>th</sup> Avenue South and 32 <sup>nd</sup> Street South	Reconfigure 32 <sup>nd</sup> Street South legs of this intersection to align better along a slight skew. These legs are split phased, and by aligning the two legs (i.e. north and south leg), the phasing of the signal can be put on the same phase.	<b>COMPLETE</b>



Project	Improvement Option/Location	Past Recommendation	Status for 2018 LRTP
SR-6	City Pavement Preservation Activities	Mill, overlay, seal and cover, chip seal, and/or striping completed or partially completed on 3 of 17 recommended streets: <b>1. 8<sup>th</sup> Ave N – 6<sup>th</sup> to 38<sup>th</sup> St N</b> (6 <sup>th</sup> to 26 <sup>th</sup> Complete) <b>6. Smelter Ave - Division Rd to 6<sup>th</sup> St NW</b> <b>17. Airport Road</b>	<b>PARTIALLY COMPLETE</b> Modified and Included as P-11
<b>COMMITTED MAJOR STREET NETWORK</b>			
C-1	South Central Urban Area Arterial Improvement Project (UPN 4566)	Reconstruct three segments of roadway to two-lane collector street standards, with additional capacity, at the following locations: 24 <sup>th</sup> Avenue South between 13 <sup>th</sup> Street South and 26 <sup>th</sup> Street South; 13 <sup>th</sup> Street South between 21 <sup>st</sup> Avenue South and 27 <sup>th</sup> Avenue South; and 26 <sup>th</sup> Street South between 18 <sup>th</sup> Avenue South and 24 <sup>th</sup> Avenue South.	<b>COMPLETE</b>
C-2	North Bootlegger Trail – 2KM North of Great Falls North (UPN 4826)	Reconstruct North Bootlegger Trail from the intersection with US 87 to the urban boundary. Between US 87 and the entrance to the Eagle Crossing subdivision the contemplated project is reconstruction to a three-lane typical section. North of the entrance to the Eagle Crossing subdivision the project will rehabilitate the existing surfacing.	<b>COMPLETE</b>
C-4	Emerson Junction – Manchester (UPN 7621)	Major rehabilitation for 3.875 miles	<b>PARTIALLY COMPLETE</b>
C-6	District 3 Fencing - Great Falls North & South (UPN 7958)	Install fencing at numerous locations within MDT's Great Falls District.	<b>COMPLETE</b>
C-7	GTFLS Horizontal Curve Signing (UPN 7980)	Install upgraded signing at numerous locations.	<b>PARTIALLY COMPLETE</b>
C-8	GTFLS Advanced Signal Flasher (UPN 8119)	Install advanced signal flasher.	<b>PARTIALLY COMPLETE</b>
<b>RECOMMENDED MAJOR STREET NETWORK</b>			
MSN-1	River Drive North – 15 <sup>th</sup> Street North to 38 <sup>th</sup> Street North	Complete a detailed corridor study and environmental assessment to consider reconstruction scenarios for River Drive North (15 <sup>th</sup> Street North to 38 <sup>th</sup> Street North). Reconstruct pending results of investigation.	<b>PARTIALLY COMPLETE</b> (corridor study complete)
MSN-3	Reconstruct 36 <sup>th</sup> Avenue NE (9 <sup>th</sup> Street NE to Bootlegger Trail)	Reconstruct to an urban collector standard.	<b>COMPLETE</b>
MSN-4	Interstate 15 Corridor Study	Develop a pre-NEPA/MEPA Corridor Planning Study for the interstate in the Great Falls Urban Limits.	<b>COMPLETE</b>
<b>ILLUSTRATIVE MAJOR STREET NETWORK</b>			
25.	Fox Farm Road – Dick Road to Fawn Drive	Reconstruct to minor arterial standard.	<b>COMPLETE</b>
<b>COMMITTED NON-MOTORIZED</b>			
N/A	Sun River Trail Connection	Bike/Ped facility adjoining Country Club Blvd (from Warden Bridge to Bike/Ped Facility at 6 <sup>th</sup> St SW)	<b>COMPLETE</b>
<b>RECOMMENDED NON-MOTORIZED</b>			
N/A	Overlook Drive Shared Use Path (River's Edge Trail to 10 <sup>th</sup> Ave S)	Construct shared use path adjacent to roadway.	<b>COMPLETE</b>
N/A	25 <sup>th</sup> St N (9 <sup>th</sup> Ave N to Pasta Place)	Provide a pedestrian bridge over the railroad tracks and sidewalks to provide a walking connection to the stadium.	<b>COMPLETE</b>
N/A	Charles Russell Park Trail (29 <sup>th</sup> St S to 33 <sup>rd</sup> St S)	Part of 2013 CTEP process.	<b>COMPLETE</b>

## 4.0 FACILITY IMPROVEMENTS

There are four categories of street improvement projects; committed, annual program, recommended, and illustrative. These categories are consistent with past long range transportation planning efforts completed in the Great Falls community. The categories are defined as follows:

- **Committed:** Committed projects are those with dedicated funding via the TIP, private sources (new development), transit formula funds, local funds, and/or projects with dedicated funding via a completed environmental document. These projects are generally expected to be completed within a five-year time frame (2018-2022).
- **Annual Program:** Programs that receive an annual allocation of funding but do not have specific projects assigned to them, these programs will occur yearly through the 20-year planning horizon.
- **Recommended for Funding:** Projects recommended to be completed through the planning horizon (year 2038), but that may need further analysis before being committed to implementation via inclusion in the TIP.
- **Illustrative (Unfunded):** Projects or project concepts supported by a sponsoring agency, but not prioritized for implementation or federal funding between 2018 and 2038.

All facility improvement projects are shown in **Figures 1 and 2** at the end of this section.

### 4.1. COMMITTED PROJECTS

The definition of a committed project is one that has been approved by the PCC and has committed funding available. Projects known to be completed within the next five years (2018 to 2022) are included in this section. Note that known pavement preservation activities are included in this list, even though they are typically addressed through a general “Pavement Preservation” category in the Transportation Improvement Program (TIP), and are typically not described as specific projects. Future projects will likely be included similarly – either as specific projects or as part of the overall “Pavement Preservation Category”, as well as covered under “Operation and Maintenance” categories and funding types (**see Section 4.2**).

#### C-1. Fox Farm Road – East Fiesta to Dick Road (UPN 8193)

Reconstruct to rural minor arterial standard.

- **Estimated Cost:** \$3,546,459
- **Funding Source:** STPU

#### C-2. Bridge Preservation – Great Falls 2014 (UPN 8085)

Overlay bridge decks over the railroad on I-315 between Fox Farm and 10<sup>th</sup> Ave S.

- **Estimated Cost:** \$1,042,745
- **Funding Source:** NHPB

#### C-3. 14<sup>th</sup> St SW Signals - GF (UPN 9572)

Retime signals at three locations (16<sup>th</sup> Ave SW, 14<sup>th</sup> St SW & Ramp, and Market Place Dr).

- **Estimated Cost:** \$32,000
- **Funding Source:** MACI – Discretionary

#### **C-4. NW Bypass Signals – Great Falls (UPN 9573)**

Retime signals at two locations (6<sup>th</sup> St NW and 9<sup>th</sup> St NW).

- **Estimated Cost:** \$25,600
- **Funding Source:** MACI – Discretionary

#### **C-5. Transit Operating Expenses**

General transit operating expenses.

- **Estimated Cost:** \$39,000
- **Funding Source:** FTA Section 5311

#### **C-6. Transit Capital Purchase**

Acquire vehicles and related equipment.

- **Estimated Cost:** \$884,000
- **Funding Source:** MACI – Guaranteed

#### **C-7. Great Falls - North (UPN 7625)**

Reconstruct and widen US-87, with passing and turn lanes, for approximately 6.67 miles. The project begins approximately 500 feet south of the malting plant approach road, and travels north past the landfill.

- **Estimated Cost:** \$4,400,000
- **Funding Source:** NH

#### **C-8. Great Falls South – Urban (Lower River Rd, 55<sup>th</sup> Ave S and 13<sup>th</sup> St S) (UPN 9511)**

City pavement preservation activities including mill, overlay, seal and cover, chip seal, and/or striping.

- **Estimated Cost:** \$1,647,829
- **Funding Source:** UPP

#### **C-9. 3<sup>rd</sup> St NW – Great Falls (UPN 9053)**

New signal upgrades with flashing yellow left turns and ADA ramps where needed.

- **Estimated Cost:** \$809,400
- **Funding Source:** MACI – Discretionary

#### **C-10. SF 169 Cascade Cnty SFTY Imprv (UPN 9426)**

Countywide safety improvements to address road departure crashes (Lower River Road and 13<sup>th</sup> St S).

- **Estimated Cost:** \$84,000
- **Funding Source:** HSIP

#### **C-11. Park Dr/4<sup>th</sup> Ave N Ped Xing – GTF Bike/Ped (UPN 9148)**

Bike and pedestrian crossing.

- **Estimated Cost:** \$265,301
- **Funding Source:** TA

#### **C-12. 2<sup>nd</sup> Ave N Signals - GF (UPN 9530)**

Signal upgrades at four locations, (3<sup>rd</sup> St, 4<sup>th</sup> St, 5<sup>th</sup> St, and 6<sup>th</sup> St).

- **Estimated Cost:** \$23,000
- **Funding Source:** MACI – Discretionary

**C-13. SF139 – 6<sup>th</sup> St / NW Bypass Sfty (UPN 8623)**

Offset of left turn lanes and upgrade signals and ADA ramps.

- **Estimated Cost:** \$489,700
- **Funding Source:** HSIP/MACI – Discretionary

**C-14. SF169 I-15 HT Cable Rail (UPN 9376)**

High tension median barrier rail between Vaughn and Central Ave W on I-15.

- **Estimated Cost:** \$1,790,310
- **Funding Source:** HSIP

**C-15. Ulm – Great Falls (UPN 9589)**

Pavement preservation on Ulm Frontage Road from Ulm to Gore Hill Interchange.

- **Estimated Cost:** \$1,700,322
- **Funding Source:** IM

**C-16. Fox Farm Road – West (I-315) (UPN 9590)**

Pavement preservation on I-315 from Fox Farm Road to I-15.

- **Estimated Cost:** \$1,456,334
- **Funding Source:** IM

**C-17. Stuckey Road (UPN 9532)**

Pave gravel road and improve to rural standards within City Limits.

- **Estimated Cost:** \$605,000
- **Funding Source:** MACI – Guaranteed

**TOTAL COMMITTED PROJECTS = \$18,841,000**

## 4.2. ANNUAL PROGRAMS

Annual allocations for various programs are identified in the Great Falls 2018-2022 TIP. These programs are included to account for typical annual expenditures that are typically less costly and more routine than stand-alone projects. An estimate of annual costs was also made for years beyond those identified in the TIP (2023-2038). Funding for these programs is not guaranteed and is determined on a case-by-case basis. Specific projects have yet to be identified for these programs. These programs are intended to identify funding needs for routine annual projects.

**P-1. Durable Pavement Markings Program**

Install markings on urban routes per City, County, and MDT.

- **Estimated Cost 2018-2022:** \$250,000 (\$50,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$750,000 (\$50,000 annually for 15 years)
- **Possible Funding Source:** STPU

**P-2. Urban System Maintenance Program (Local)**

Perform chip seals, overlays and related maintenance activities on Urban Routes.

- **Estimated Cost 2018-2022:** \$928,090 (\$185,618 annually for 5 years)
- **Estimated Cost 2023-2038:** \$2,625,000 (\$175,000 annually for 15 years)
- **Possible Funding Source:** STPU

**P-3. Operations & Maintenance (Local)**

Operate and maintain federal-aid systems in the Great Falls area.

- **Estimated Cost 2018-2022:** \$10,895,000 (\$2,179,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$30,000,000 (\$2,000,000 annually for 15 years)
- **Possible Funding Source:** O&M State, County, and City

**P-4. Traffic Mitigation**

Complete projects that help mitigate traffic congestion including, traffic signal synchronization, bicycle pedestrian projects, intersection improvements, travel demand management strategies, and traffic flow improvements.

- **Estimated Cost 2018-2022:** \$1,250,000 (\$250,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$3,750,000 (\$250,000 annually for 15 years)
- **Possible Funding Source:** MACI - Discretionary

**P-5. ADA Compliance**

Complete projects that help make the transportation system compliant with the Americans with Disabilities Act. The *Great Falls Public Right of Way ADA Transition Plan* contains various information on design standards, a discussion on ADA compliance, and an inventory of the compliant and non-compliant ADA accommodations.

- **Estimated Cost 2018-2022:** \$1,250,000 (\$250,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$3,750,000 (\$250,000 annually for 15 years)
- **Possible Funding Source:** MACI - Discretionary

**P-6. Transportation Alternatives Projects**

Complete non-motorized transportation projects or other eligible Transportation Alternatives projects.

- **Estimated Cost 2018-2022:** \$1,000,000 (\$200,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$3,000,000 (\$200,000 annually for 15 years)
- **Possible Funding Source:** TA

**P-7. Transit Operating Expense**

General transit operating expenses.

- **Estimated Cost 2018-2022:** \$14,325,000 (\$2,865,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$42,975,000 (\$2,865,000 annually for 15 years)
- **Possible Funding Source:** FTA Section 5307

**P-8. Transit Capital Purchase**

Acquire vehicles and related equipment.

- **Estimated Cost 2018-2022:** \$198,000 (\$39,600 annually for 5 years)
- **Estimated Cost 2023-2038:** \$594,000 (\$39,600 annually for 15 years)
- **Possible Funding Source:** TransADE

**P-9. MDT-nominated HSIP Safety Projects**

MDT evaluates safety trends and concerns on an annual basis. HSIP funds are apportioned to Montana for allocation to safety improvement projects that correct or improve a hazardous road location or feature, or address a highway safety problem. In the Great Falls planning area, MDT identifies potential HSIP projects and programs said projects on an as-needed basis. This program is intended to reflect this MDT-led activity and relies on historical expenditures for this effort as a basis for future expenditures.

- **Estimated Cost 2018-2022:** \$1,000,000 (\$200,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$2,250,000 (\$150,000 annually for 15 years)
- **Possible Funding Source:** HSIP

### P-10. MDT-nominated Pavement Preservation Projects

MDT performs a wide range of pavement preservation activities on MDT routes to include mill, overlay, seal and cover (S&C), chip seal (CS) and striping. Programming of these pavement preservation activities is dynamic and is included in MDTs normal work protocols. This program is intended to reflect MDTs continued efforts to complete pavement preservation activities and relies on historical expenditures for this effort as a basis for future expenditures.

- **Estimated Cost 2018-2022:** \$7,785,355 (\$1,557,071 annually for 5 years)
- **Estimated Cost 2023-2038:** \$22,500,000 (\$1,500,000 annually for 15 years)
- **Possible Funding Source:** NHPP

### P-11: City Pavement Preservation Activities

A range of pavement preservation activities to include mill, overlay, seal and cover (S&C), chip seal (CS) and striping will be necessary over the planning horizon in some locations on various urban roadways. Great Falls has set aside a portion of their yearly budget to complete city pavement preservation activities. Various roadways in need of pavement preservation were identified by Great Falls Public Works for the 2014 LRTP. The annual allocation has been included in the budget for 2018-2038. Some of the projects may be buildable in shorter timeframes. Additionally, pavement preservation actions would not be necessary if subject roadways were part of another identified reconstruction project. If the projects listed below are completed in that timeframe other roadways may be nominated for this program. The projects are listed in priority, as determined by Great Falls Public Works, as follows:

1. 8 <sup>th</sup> Ave N – 26 <sup>th</sup> to 38 <sup>th</sup> St N	Mill, overlay, S&C, Striping	\$1,216,373
2. 38 <sup>th</sup> St N – 6 <sup>th</sup> Ave N to River Dr	Mill, overlay, S&C, Striping	\$247,782
3. 26 <sup>th</sup> St N - Central Ave to 8 <sup>th</sup> Ave N	Mill, overlay, S&C, Striping	\$273,395
4. 25 <sup>th</sup> St N - Central Ave to River Dr N	Mill, overlay, S&C, Striping	\$375,033
5. 6 <sup>th</sup> St S - Central Ave to 10 <sup>th</sup> Ave S	Mill, overlay, S&C, Striping	\$405,829
6. 13 <sup>th</sup> St S – 24 <sup>th</sup> Ave S to 30 <sup>th</sup> Ave S	Mill, overlay, S&C, Striping	\$201,535
7. Lower River Rd - Overlook Dr south to City limits	Mill, overlay, S&C, Striping	\$540,475
8. Central Ave W – 20 <sup>th</sup> St SW to 27 <sup>th</sup> St SW	Mill, overlay, S&C, Striping	\$312,849
9. Watson Coulee Rd - Vaughn Rd to NW Bypass	Mill, overlay, S&C, Striping	\$102,410
10. Sun River Rd – 14 <sup>th</sup> St SW west to City limits	Mill, overlay, S&C, Striping	\$354,151
11. 1 <sup>st</sup> Ave S – 11 <sup>th</sup> St to 14 <sup>th</sup> St S	Mill, overlay, S&C, Striping	\$94,360
12. 2 <sup>nd</sup> Ave S – 9 <sup>th</sup> St to 15 <sup>th</sup> St S	Mill, overlay, S&C, Striping	\$219,579
13. Central Ave W – 27 <sup>th</sup> St SW to 30 <sup>th</sup> St SW	S&C, Striping	\$17,522
14. Giant Springs Rd - River Dr to City Limits	CS & S&C, Striping	\$85,311
15. Park Garden Rd - Fox Farm Rd to Flood Rd	CS & S&C, Striping	\$32,671

- **Estimated Cost 2018-2022:** \$2,500,000 (\$500,000 annually for 5 years)
- **Estimated Cost 2023-2038:** \$7,500,000 (\$500,000 annually for 15 years)
- **Possible Funding Source:** UPP

**TOTAL ANNUAL PROGRAMS (2018-2022) = \$41,381,445**  
**TOTAL ANNUAL PROGRAMS (2023-2038) = \$119,697,000**

### 4.3. RECOMMENDED PROJECTS

During the preparation of the 2018 LRTP, a number of recommended projects, in addition to those not yet completed from the 2014 LRTP, were identified. Project cost estimates for the recommended projects are planning-level estimates. They are in anticipated year-of-expenditure dollars (using a yearly inflation factor of 3%) and include all project phases. Any project considered for advancement should undergo a current cost estimate, which would include an examination of site conditions and subsequent development of more detailed project scope. The identified projects are anticipated to be funded beyond 2022 and within the planning horizon (2038). The following recommended projects are not in any particular order with respect to priority:

#### R-1. River Drive N – 15<sup>th</sup> St N to 25<sup>th</sup> St N

This project was identified in the *River Drive Corridor Study* completed in 2016 and has been carried forward as a recommendation for the 2018 LRTP. This segment of River Drive North consists of multiple access points, businesses and a residential development on the south side of the roadway, and the River's Edge Trail on the north side. The existing traffic volume on this segment is 14,500 vpd with a projected 2035 volume of approximately 20,000 vpd. This area is constrained by terrain to the north and by the businesses to the south. Currently, parking occurs within the River Drive North right-of-way in undesignated areas. There are no parking leases in place between land owners and MDT which would allow parking within the right-of-way. An evaluation of parking provisions should occur during project development.

Reconstruction of this segment is envisioned to consist of one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations. Reconstruction would serve to improve safety and operations by removing turning vehicles from the traffic stream, improving roadway geometrics, and accommodating non-motorized users. The opportunity to expand the roadway is limited by terrain constraints west of 25th Street North. Near the business district, steep slopes exist to the north; near the Big Stack Mobile Home Court, steep slopes exist on both sides of the roadway. This option does include full reconstruction of the intersection with 25th Street North. The intersection is currently operating at a failing LOS during the peak hours and has a history of crash trends. A traffic signal and single lane roundabout are potential options for improving the intersection.

- **Estimated Cost:** \$14,500,000
- **Possible Funding Source:** NHPP, HSIP, MACI, STPU

#### R-2. Fox Farm Intersection Improvements

This project was identified in the *I-15 Corridor Planning Study* completed in 2015 and has been carried forward as a recommendation for the 2018 LRTP. The Fox Farm intersection is a four-way, stop-controlled intersection between 10th Avenue South and Fox Farm Road. The intersection is projected to have a failing LOS during the peak hours. The length of the eastbound left-turn bay is approximately 200 feet, and it does not appear to provide enough vehicle storage. Lengthening the existing turn bay would improve storage for left-turning vehicles, however, the overall delay of the intersection would remain the same.

The northbound approach leg consists of a shared left-turn/through, dedicated through, and dedicated right-turn lane. Because of this configuration, the existing signal timing is split-phased in the northbound and southbound directions. Split-phased signal timing can result in inefficiencies for traffic movements. Ultimately, it would be desirable to provide a dedicated northbound left-turn lane so that the signal timing could be modified to increase efficiency. However, existing development constrains the width of the northbound approach leg.

In the interim, the delay of the intersection could be reduced by installing dual left-turn lanes along the eastbound approach leg. This configuration could be achieved by narrowing (or removing) the existing median separating the left-turn and through lanes on the eastbound approach leg.

- **Estimated Cost:** \$100,000
- **Possible Funding Source:** MACI

### **R-3. Signal Modifications/Upgrades/Roundabout Control**

It is recommended that the community work towards upgrading all traffic signal heads in the City as appropriate. Upgrades would include but not be limited to signal heads, pedestrian push buttons, pedestrian heads, LED upgrades, battery backup systems, etc. The size and location to be upgraded will vary and not necessarily be of a consistent type, but rather should consider the surrounding area and be sensitive to the context for which it will be used. Some locations may require a full intersection upgrade. In primarily industrial and/or commercial areas, a standard signal head, consistent with MDT standards, are appropriate. Roundabouts are also a form of intersection control that should be explored at some intersections, coincident to traffic signal evaluation.

- **Estimated Cost:** \$270,000
- **Possible Funding Source:** MACI

### **R-4. Central Avenue W – 3<sup>rd</sup> St NW to 1<sup>st</sup> Ave N**

It is recommended that this corridor and corresponding intersections undergo re-striping and intersection modifications. Possible improvements are listed below, however a detailed engineering analysis, with feasible recommendations, should be completed prior to any improvements being implemented. Potential improvements include the following:

**Bridge Structure:** The existing bridge is currently striped as a four-lane facility with very wide travel lanes. The bridge is sufficient in width to re-stripe to add two more lanes – making the facility a six-lane roadway. It is recommended that this be completed to accommodate the recommendations below at the adjoining intersections.

**Central Avenue W / 3<sup>rd</sup> Street NW Intersection:** This intersection will require some re-configuration on the south leg to improve level of service and operations. It is recommended that the south leg be re-striped to allow for a left turn lane, a combination through and right turn lane, and an exclusive right turn lane.

**1<sup>st</sup> Avenue N / River Drive Intersection:** This intersection will require modification on the north leg (i.e. River Drive). On the southbound leg, it is desirable to widen to the west slightly and provide for an exclusive right turn lane, a shared right turn / through lane, and an exclusive left turn lane.

**1<sup>st</sup> Avenue N - River Dr to Park Dr):** Re-stripe this segment of roadway to a six-lane principal arterial standard. The available width on the north side of the median is 35 feet. On the south side of the median, there is 33 feet (which is striped as 3 lanes at 11 feet each). The north side of the median should be re-striped at 12 feet, 11 feet, and 12 feet. This measure would improve traffic flow characteristics during the PM peak for vehicles using the intersection of 1<sup>st</sup> Avenue North / Park Drive.

**Park Drive - 2<sup>nd</sup> Ave N to 1<sup>st</sup> Ave N):** Re-stripe this segment of roadway to provide for a two lane roadway on Park Drive, south of 2<sup>nd</sup> Avenue North. Also provide a right turn only lane and a combined thru lane / right turn lane on the north leg of the intersection of 1<sup>st</sup> Avenue North and Park Drive. A designated left turn lane will also be required on the north leg, with applicable geometric modifications



to the south leg to line up the respective turning movements. Consider a modern roundabout at the intersection of 2<sup>nd</sup> Avenue North and Park Drive.

- **Estimated Cost:** \$867,000
- **Possible Funding Source:** NHPP

#### **R-5: 26<sup>th</sup> Street S – 24<sup>th</sup> Ave S to 33<sup>rd</sup> Ave S**

This project includes two projects within the County that are grouped together due to their proximity. Funding for completion of these projects rests with Cascade County solely. These projects are as follows:

**26<sup>th</sup> Street S - 24<sup>th</sup> Ave S to 33<sup>rd</sup> Ave S**: This roadway exhibits rural roadway characteristics and has an extremely abrupt shoulder edge in many spots along this corridor. At a minimum, it is recommended to rebuild the shoulders in spot areas to flatten the fill slopes to benefit roadway safety and potential “run-off-the-road” vehicles. This project primarily relates to the east side of the roadway.

**26<sup>th</sup> Street South and 33<sup>rd</sup> Avenue South**: This intersection exhibits poor sight distance and modifications to all four legs should be made. Stop control of this intersection should be installed on the north and south leg (i.e. 26<sup>th</sup> Street South). The four legs should be modified to gain a suitable approach grade to the intersection.

- **Estimated Cost:** \$478,000
- **Possible Funding Source:** COUNTY

#### **R-6. Central Avenue / 9<sup>th</sup> Street Intersection**

Modify the west leg of this intersection (i.e. Central Avenue) by lengthening the existing left-turn bay to provide more storage for eastbound left-turns onto 9<sup>th</sup> Street North. This will also improve thru-movements on the leg by eliminating the blockage caused by the lack of storage on the existing left-turn bay. This recommendation would require the removal of the angled parking on the north side of Central Avenue, directly west of 9<sup>th</sup> Street. Parallel parking could remain, however.

- **Estimated Cost:** \$17,000
- **Possible Funding Source:** MACI

#### **R-7. 25<sup>th</sup> Street S – 10<sup>th</sup> Ave S to 11<sup>th</sup> Ave S**

Modify this one-block segment of 25<sup>th</sup> Street South to one-way in the southbound direction. The benefit of this is that traffic will be removed from the congested turning movements on 10<sup>th</sup> Avenue South, between 25<sup>th</sup> and 26<sup>th</sup> Streets. By modifying the one-block segment, the lane use on 25<sup>th</sup> Street South, just north of 10<sup>th</sup> Avenue South, can be modified to a southbound right-turn lane, a combination thru/left-turn lane, and a designated left turn lane. This will likely remove pressure on the eastbound right-turning movement at 10<sup>th</sup> Avenue South / 26<sup>th</sup> Street South, and free up more signal time for northbound traffic on 26<sup>th</sup> Street South. Before proceeding with this project as envisioned, a detailed traffic engineering study will be necessary to document operational benefits, costs, and other potential impacts.

- **Estimated Cost:** \$23,000
- **Possible Funding Source:** STPU

#### **R-8. 25<sup>th</sup> Avenue NE – Old Havre Hwy to 15<sup>th</sup> St N**

Based on a recent MDT Traffic Control Study, it is recommended to make several improvements along 25<sup>th</sup> Avenue NE to improve safety and operational characteristics. The corridor is currently a five-lane typical section. The improvements recommended include, but are not limited to:

- Updating all crosswalk yield lines to “sawtooth” design;
- Moving stop bars on the 25<sup>th</sup> Avenue NE approaches closer to the edge of the north/south traveled way;
- Installing “Cross Traffic Does Not Stop” plaque on stop signs;
- Restriping the 25<sup>th</sup> Avenue NE corridor as a 3-lane roadway with shared-use paths to provide a consistent typical section between Old Havre Highway and 15<sup>th</sup> Street; and
- Narrow down 25<sup>th</sup> Avenue NE approaches to match 3-lane corridor width.
  - **Estimated Cost:** \$338,000
  - **Possible Funding Source:** STPU

### **R-9. Emerson Junction Feasibility Study**

Secure a local project sponsor to fund an operational analysis/feasibility study, conducted by a qualified traffic engineer, of the Emerson Junction Interchange which considers state and federal regulations including the *Interstate System Access Informational Guide* and Montana Transportation Commission Policy.

- **Estimated Cost:** \$250,000
- **Possible Funding Source:** CITY

### **R-10. Gore Hill Interchange with Southbound Auxiliary Lane**

Given projected employment and population growth in the area surrounding the airport, volumes exceeding the available capacity are expected. Modifications to the intersections are needed to improve the operations and capacity of this interchange. Due to the proximity of the four intersections, it is desirable to evaluate the intersections as a network rather than individually when analyzing potential improvements.

Additionally, the existing grade between the Gore Hill and the 10th Avenue South interchanges is 5 percent. The steep grade results in a mixture of varying vehicle types and speeds. A high percentage of vehicles travel between the two interchanges resulting in vehicle weaving and operational issues. Construction of a southbound auxiliary lane is recommended and should be completed in conjunction with the Gore Hill Interchange reconstruction.

- **Estimated Cost:** \$10,900,000
- **Possible Funding Source:** NHPP, HSIP, MACI, NHPB

### **R-11. Fox Farm Road – Alder Dr to Park Garden Rd**

It is recommended to re-stripe this roadway to a four-lane facility to accommodate existing traffic volumes, as well as projected future traffic volumes. It is recommended to remove on-street parking within this stretch of roadway. A parking lot to serve the adjacent Meadowlark Elementary School and Montana Park should be built west of the road to mitigate loss of on-street parking.

- **Estimated Cost:** \$810,000
- **Possible Funding Source:** STPU

### **R-12. Giant Springs Road – Hatchery to Rainbow Dam**

Overlay with new asphalt and widen as needed in existing narrow sections.

- **Estimated Cost:** \$3,377,000
- **Possible Funding Source:** UPP

**R-13. 9<sup>th</sup> Street NW – NW Bypass to Central Ave W**

This roadway serves as an important north-south collector and is located in an urban setting. The roadway exhibits aging infrastructure. The roadway is very narrow and lacks consistent pedestrian facilities. Concerns have been expressed from the public on the removal of on-street parking along the route, especially closer to NW Bypass. Increased traffic on this roadway is expected so it is recommended that this roadway be reconstructed to a collector street standard.

- **Estimated Cost:** \$5,177,000

**R-14. Watson Coulee Road – NW Bypass to Vaughn Rd**

Aging infrastructure, lack of pedestrian facilities, traffic mixture, termini geometrics are noted as problems on Watson Coulee Road. This roadway generally has curb and gutter on both sides, but no sidewalks. The roadway surfacing is in varying states of deterioration. Reconstruction of this roadway to bring up to current standards would improve this north-south link on the western edge of the city limits. It is recommended that this roadway be reconstructed to a collector street standard.

- **Estimated Cost:** \$2,052,396

**TOTAL RECOMMENDED PROJECTS = \$39,159,396**

**4.4. ILLUSTRATIVE (UNFUNDED) PROJECTS**

System deficiencies and needs are often not fundable in the foreseeable future. However, funding opportunities often arise over time, often from unexpected sources. To be prepared to take advantage of such opportunities, the following list of projects is provided, with no identified funding source or schedule for construction/implementation. While the project costs have been estimated, most are presented in a 2038 year-of-expenditure, using a 3% yearly inflation rate to reach year-of-expenditure. Such projects are included for illustration purposes only, and are not considered to be applicable components of the fiscal constraint requirements of the LRTP. However, it is likely that some of them will become funded at some point during the 20-year planning horizon even though no current source is known.

**I-1. 40<sup>th</sup> Avenue S – Upper River Rd to 13<sup>th</sup> St**

It is recommended that this piece of roadway be overlaid with new asphalt. This project was contained in the past transportation plan for Great Falls.

- **Estimated Cost:** \$2,926,000

**I-2. Franklin Avenue – Lower River Rd to 13<sup>th</sup> St**

It is recommended that this piece of roadway be overlaid with new asphalt. This project was contained in the past transportation plan for Great Falls.

- **Estimated Cost:** \$1,688,000

**I-3. Wilson Butte Road – Eden Rd to LRTP boundary**

It is recommended that poor sections on this piece of roadway be overlaid with new asphalt.

- **Estimated Cost:** \$2,251,000

**I-4. Upper River Road – 19<sup>th</sup> Ave S to 40<sup>th</sup> Ave S**

It is recommended that poor sections on this piece of roadway be overlaid with new asphalt. This project was contained in the past transportation plan for Great Falls.

- **Estimated Cost:** \$4,615,000

**I-5. 33<sup>rd</sup> Avenue S / 13<sup>th</sup> Street S Intersection**

This intersection exhibits poor sight distance and modifications to the intersection legs should be made. Specifically, intersection should be reconfigured to a conventional “T” intersection with stop control on the east leg (33<sup>rd</sup> Avenue South). In addition, a detailed sight distance study should be completed to examine improvements to the north leg of 13<sup>th</sup> Street South.

- **Estimated Cost:** \$163,000

**I-6. 36<sup>th</sup> Avenue NE Traffic Calming**

Until a future project north of Great Falls can be completed to establish a grid street network in the newly developing areas, 36<sup>th</sup> Avenue NE will continue to encounter the effects of increasing traffic, higher travel speeds, and peak travel demands. Due to the width of the roadway and the aforementioned concerns, traffic calming along the route should be implemented. The purpose of the traffic calming is to slow travel speeds by giving the appearance of “pinch-points”, and to increase the visibility of pedestrians in the area. Curb bulb-outs placed at the major north-south routes that intersect with 36<sup>th</sup> Avenue NE should be considered, and an evaluation of stop sign control warrants should periodically be made. The likely candidates for curb bulb-outs on 36<sup>th</sup> Avenue NE include the following intersections: 2<sup>nd</sup> Street NE; 4<sup>th</sup> Street NE; 7<sup>th</sup> Street NE; and 9<sup>th</sup> Street NE.

- **Estimated Cost:** \$113,000

**I-7. 25<sup>th</sup> Avenue NE / 8<sup>th</sup> Street NE Intersection**

Poor levels of service under existing and projected conditions suggest a four-way stop control be appropriate at this intersection to better meter traffic and provide gaps for the various traffic movements. Four-way stop control would also help pedestrian crossing activity in front of the middle school by allowing gaps for pedestrians to be created.

- **Estimated Cost:** \$28,000

**I-8. 11<sup>th</sup> Avenue S Traffic Calming**

It is recommended to provide aggressive traffic calming on 11<sup>th</sup> Avenue South, between 26<sup>th</sup> Street South and 32<sup>nd</sup> Street South, to heighten pedestrian visibility and slow traffic down. Traffic calming may include a combination of curb bulb-outs and/or raised speed tables at the major intersections.

- **Estimated Cost:** \$84,000

**I-9. 11<sup>th</sup> Avenue S / 32<sup>nd</sup> Street S Intersection**

Continue to monitor this intersection for 4-way stop control. It is presently stop-sign controlled on the south and north legs (i.e. 32<sup>nd</sup> Street South). With future connectivity improvements (i.e. the extension of 15<sup>th</sup> Avenue South to 32<sup>nd</sup> Street South) recommended later in the LRTP, the intersection may see an increase in volume on 32<sup>nd</sup> Street South that may meet 4-way stop control warrants.

- **Estimated Cost:** \$11,000

**I-10. Speed Studies**

Several segments of roads may be ideal candidates for periodic speed studies. These include Central Avenue West (from 9<sup>th</sup> Street NW to 20<sup>th</sup> Street NW); 3<sup>rd</sup> Street SW / 4<sup>th</sup> Avenue SW (from Central Ave West to 6<sup>th</sup> Street SW); and 36<sup>th</sup> Avenue NE.

- **Estimated Cost:** \$39,000

**I-11. Signal Warrant Analysis**

A number of intersections should be periodically checked for signal warrants as development and projects occur around the community. These intersections include: the north and west sides of the airport interchange; the intersection of Central Avenue West and Vaughn Road; Fox Farm Road and Park Garden Road; Fox Farm Road and 18<sup>th</sup> Avenue SW; 3<sup>rd</sup> Avenue South and River Drive; 6<sup>th</sup> Street SW and 4<sup>th</sup> Avenue SW; 38<sup>th</sup> Street and Central Avenue; and other locations as the need may arise.

- **Estimated Cost:** \$214,000

**I-12. 38<sup>th</sup> Street N – 10<sup>th</sup> Ave N to River Dr N**

Narrow width and increased traffic, as well as truck traffic, suggests this segment would function better as an urban collector. It is the only segment on the 38<sup>th</sup> Street North collector corridor that is not an urban standard. It is recommended that this roadway be reconstructed to collector street standard.

- **Estimated Cost:** \$3,827,000

**I-13. Flood Road – Park Garden Rd to Dick Rd**

This roadway has limited capacity, is very narrow, and is expected to see traffic increases. It is recommended that this roadway be reconstructed to a collector street standard.

- **Estimated Cost:** \$22,510,000

**I-14. 6<sup>th</sup> Street NW – Smelter Ave to 36<sup>th</sup> Ave NE**

This roadway is currently very narrow and lacks shoulders. Poor sight distance is noted in some locations along the roadway. Reconstruct to a collector street standard with urban roadway features (such as curb & gutter, lighting, sidewalks, etc.). Consider extension north of Skyline Drive to 36<sup>th</sup> Avenue Northeast to accommodate development in this area of the City.

- **Estimated Cost:** \$9,679,000

**I-15. River Drive – 3<sup>rd</sup> Ave S to 1<sup>st</sup> Ave N**

This roadway is narrow with several curves and is approaching capacity under existing conditions. Reconstruct to minor arterial standards, along with a railroad underpass, in conjunction with intersection improvements at the intersection of 1<sup>st</sup> Avenue North and River Drive. Perform signal warrant analysis at the intersection of River Drive and 3<sup>rd</sup> Avenue South periodically as development infill occurs. This corridor is extremely important to the users of the River's Edge Trail and to connecting downtown with the riverfront and hotels on the riverfront with downtown. It is suggested that the access to the Broadwater Bay Park, across from the Applebee's Restaurant, be closed to improve traffic flow in the area. Also, access control along the corridor should be reviewed periodically, as more development occurs to the south of 3<sup>rd</sup> Avenue South.

- **Estimated Cost:** \$12,831,000

**I-16. Park Drive – 8<sup>th</sup> Ave N to 2<sup>nd</sup> Ave N**

This roadway is narrow with several curves. There are also concerns for safe pedestrian crossing across Park Drive. Reconstruct to collector street standards. Particular focus should be given to the intersection of Park Drive/6<sup>th</sup> Street North/8<sup>th</sup> Avenue North for a more standard intersection design that may better define the use in the intersection. In addition to the standard treatments, a modern "roundabout" should be evaluated at this location. Ample right-of-way appears to be available to accommodate a roundabout configuration. Potential pedestrian improvements should be included in the project, including additional marked crosswalks across Park Drive to connect the neighborhoods to Gibson Park. Although the overall project may not be a high priority given other Great Falls area needs, individual improvements could be

contemplated and phased over time. Improvements for pedestrian access and to the 3-way intersection, as well as curb and gutter improvements, could be considered at lower costs.

- **Estimated Cost:** \$6,783,000

#### **I-17. Central Avenue W – 20<sup>th</sup> St NW to 29<sup>th</sup> St NW**

This facility lacks shoulders and does not fit within the context of the community. Existing curb, gutter, and sidewalks terminate at 20<sup>th</sup> St SW just west of the Central Ave W / I-15 interchange. It is recommended that this roadway be reconstructed to collector street standards.

- **Estimated Cost:** \$7,879,000

#### **I-18. 21st Avenue S**

Construct 21st Avenue South, between 23rd Street South and 26th Street South, to a two-lane collector street standard.

- **Estimated Cost:** \$2,251,000

#### **I-19. 67<sup>th</sup> Street N – Giant Springs Rd to 18<sup>th</sup> Ave N**

Reconstruct portion of 67<sup>th</sup> Street North to paved roadway to match Giant Springs Road to the west. Rural, local roadway section is applicable for this roadway.

- **Estimated Cost:** \$8,892,000

#### **I-20. Sun River Road – Urban Boundary to 14<sup>th</sup> St SW**

Overlay with new asphalt, and also reconstruct as needed in sections with poor pavement conditions. There are also several narrow sections along this corridor that should be widened.

- **Estimated Cost:** \$5,740,000

#### **I-21. Upper River Road – Overlook Dr to 19<sup>th</sup> Ave S**

This facility lacks shoulders and does not fit within the context of the community. Existing curb, gutter, and pedestrian facilities terminate at Overlook Drive. Reconstruct to a collector street standard.

- **Estimated Cost:** \$6,753,000

#### **I-22. 17<sup>th</sup> Avenue S – 7<sup>th</sup> St S to 13<sup>th</sup> St S**

This facility has limited capacity and does not fit within the context of the community. It is recommended that this roadway be reconstructed to collector street standards. Note that 17<sup>th</sup> Ave S from 9<sup>th</sup> St S to 13<sup>th</sup> St S is an urban route and a local route from 7<sup>th</sup> St S to 9<sup>th</sup> St S.

- **Estimated Cost:** \$4,840,000

#### **I-23. 36<sup>th</sup> Avenue NE – 1<sup>st</sup> St NE to 6<sup>th</sup> St NW**

Extend 36<sup>th</sup> Avenue NE from its present termini (~350 feet west of 1<sup>st</sup> Street NE) to the intersection with 6<sup>th</sup> Street NW. Completion of this segment will allow traffic to better distribute throughout the surrounding neighborhood. This link can only be accomplished with the help of willing landowners upon which the route would be considered. This segment should be built to a collector standard to match existing roadway geometrics.

- **Estimated Cost:** \$4,502,000

**I-24. 15<sup>th</sup> Avenue S – 30<sup>th</sup> St S to 32<sup>nd</sup> St S**

Extend 15<sup>th</sup> Avenue South from its current termini (near the theoretical extension of 30<sup>th</sup> Street South) eastward to connect to 14<sup>th</sup> Avenue South, at 32<sup>nd</sup> Street South. This segment should be built to a collector standard.

- **Estimated Cost:** \$1,351,000

**I-25. 43<sup>rd</sup> Avenue NE – Bootlegger Trail to 6<sup>th</sup> St NW**

Construct a new roadway along the theoretical alignment of 43<sup>rd</sup> Avenue NE, between Bootlegger Trail (eastern termini) and 6<sup>th</sup> Street NW (western termini). This route should be built to a minor arterial standard with limited access control, and can only be accomplished with the help of willing landowners upon which the route would be considered. This could occur during individual property development phases, or all at once. As development leap frogs to the north of Great Falls, a new east-west collector route will be necessary to distribute traffic from local, neighborhood roads to area arterials.

- **Estimated Cost:** \$19,134,000

**I-26. 43<sup>rd</sup> Avenue NE – Bootlegger Trail and US 87**

Construct a new roadway segment along the theoretical alignment of 43<sup>rd</sup> Avenue NE, between Bootlegger Trail (western termini) and US 87 (eastern termini). This route should be built to a minor arterial standard with limited access control, and can only be accomplished with the help of willing landowners upon which the route would be considered.

- **Estimated Cost:** \$2,983,000

**I-27. North / South Connectors**

Extend existing north-south routes from north of 36<sup>th</sup> Avenue NE to the new 44<sup>th</sup> Avenue NE to complete a gridded network of roads. Routes envisioned for future connections include the following: 2<sup>nd</sup> Street NE; 4<sup>th</sup> Street NE; 7<sup>th</sup> Street NE; and 9<sup>th</sup> Street NE.

- **Estimated Cost:** \$9,904,000

**I-28. 25<sup>th</sup> Street N – River Dr to 2<sup>nd</sup> Ave N**

Reconstruct to a minor arterial street standard. The roadway currently exhibits a mixture of urban and rural road characteristics – i.e. curb and gutter, sidewalk, lighting, etc. It is desirable to reconstruct the road to an urban minor arterial to accommodate increasing traffic, provide better non-motorized facilities and connectivity, and plan for the varied uses in the area (Centene Park, Pasta Montana, General Mills, etc.). The project would require a new bridge crossing of the railroad (estimated size is 100 feet long by 80 feet wide; planning level cost is \$150 per square foot). The intersection of 25<sup>th</sup> Street North and River Drive North should be reconstructed with consideration for either traffic signalization or a modern roundabout. Both treatments may be difficult due to the grade of River Drive North, to the west of 25<sup>th</sup> Street North.

- **Estimated Cost:** \$12,155,000

**I-29. 10<sup>th</sup> Avenue S – 26<sup>th</sup> St S to 32<sup>nd</sup> St S**

There are both existing and future capacity concerns on this roadway due to increasing traffic. Widen to a six-lane principal arterial standard, including sidewalks. Expansion to a six-lane facility will provide typical section continuity to match roadway sections in place west of 26<sup>th</sup> Street South.

- **Estimated Cost:** \$12,943,000

**I-30. Downtown Traffic Flow Conversion**

Modify 1<sup>st</sup> and 2<sup>nd</sup> Avenues South, and 5<sup>th</sup> and 6<sup>th</sup> Streets, to maintain one-way traffic flow, but reduce typical section by one vehicle lane to accommodate new on-street bicycle facilities (see *Downtown Access, Circulation and Streetscape Plan - April 2013*). The existing 3-lane sections of 1<sup>st</sup> Avenue South, 2<sup>nd</sup> Avenue South, 5<sup>th</sup> Street and 6<sup>th</sup> Street in the downtown area provides traffic capacity in excess of that needed to adequately accommodate existing and forecast traffic volumes. Areas of modification are as follows:

- 1<sup>st</sup> Avenue South (between Park Drive and 10<sup>th</sup> Street South)
  - 2<sup>nd</sup> Avenue South (between Park Drive and 7<sup>th</sup> Street South)
  - 5<sup>th</sup> Street (North and South) between 2<sup>nd</sup> Avenue North and 6<sup>th</sup> Avenue South
  - 6<sup>th</sup> Street (North and South) between 2<sup>nd</sup> Avenue North and 5<sup>th</sup> Avenue South
- **Estimated Cost:** \$225,000

**I-31. 20<sup>th</sup> Street S – 17<sup>th</sup> Ave S to 24<sup>th</sup> Ave S**

Extend 20<sup>th</sup> Street South from 17<sup>th</sup> Avenue South to 24<sup>th</sup> Avenue South. Build to a collector standard. This can only be accomplished with the help of willing landowners upon which the route would be considered. This extension would require the acquisition of a private parcel with several outbuildings in the vicinity of 18<sup>th</sup> Avenue South.

- **Estimated Cost:** \$4,389,000

**I-32. 23<sup>rd</sup> St S – 21<sup>st</sup> Ave S to 24<sup>th</sup> Ave S**

Extend 23<sup>rd</sup> Street South from 21<sup>st</sup> Avenue South to 24<sup>th</sup> Avenue South. Build to a collector standard, and can only be accomplished with the help of willing landowners upon which the route would be considered.

- **Estimated Cost:** \$1,835,000

**I-33. Wilson Butte Road / 55<sup>th</sup> Avenue S / Eden Road / Lower River Road**

It is recommended that this intersection be reconfigured with a modern roundabout to better define geometrics and control turning movements through the intersection.

- **Estimated Cost:** \$371,000

**I-34. 26<sup>th</sup> Street N – 8<sup>th</sup> Ave N to 2<sup>nd</sup> Ave N**

Noted concerns on this roadway include limited capacity; narrow roadway facility; and lack of consistent pedestrian facilities. Reconstruct to a minor arterial street standard. The roadway currently exhibits a mixture of urban and rural road characteristics – i.e. curb and gutter, sidewalk, lighting, etc. It is desirable to reconstruct the road to an urban minor arterial to accommodate increasing traffic, provide better non-motorized facilities and connectivity, and plan for the varied uses in the area.

- **Estimated Cost:** \$7,203,000

**I-35. Vaughn Road – Interstate 15 to Central Ave W**

Reconstruct Vaughn Road to a principal arterial street standard. Justification for the project includes limited future capacity, an existing narrow roadway facility, and the presence of heavy truck traffic. The project envisioned is approximately 2.24 miles in length. The influence of a potential “full movement” interchange (see I-39) may necessitate evaluating both projects (i.e. I-39 and I-40) in tandem to determine potential impacts and project limits.

- **Estimated Cost:** \$16,995,000



**I-36. River Drive N – 25<sup>th</sup> St N to 38<sup>th</sup> St N**

This segment of River Drive North consists of limited access points, higher speeds, and lower traffic volumes than Segment 1 (R-12). Reconstruction is envisioned to consist of one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations. Reconstruction would improve safety and operations by removing turning vehicles from the traffic stream, improving roadway geometrics, and accommodating non-motorized users. Unlike Segment 1 (R-12), there are likely fewer locations where a center left-turn lane is needed due to less access points and approaches.

- **Estimated Cost:** \$11,800,000

**I-37. US 87 – Old Havre Hwy / 33<sup>rd</sup> Ave NE to Bootlegger Trail**

Reconstruct the area between Old Havre Highway / 33<sup>rd</sup> Avenue NE and Bootlegger Trail. A detailed traffic engineering analysis should be completed before implementing any improvements. The following measures should be explored to mitigate existing and future traffic concerns:

**Intersection of Old Havre Highway / 33<sup>rd</sup> Avenue NE and 15<sup>th</sup> Street NE:** Reconfigure by eliminating the skew of Old Havre Highway to line up directly opposite the 33<sup>rd</sup> Avenue NE leg. The reconfigured intersection would have a combined LT/TH/RT-turn lane on the 33<sup>rd</sup> Avenue NE leg, a combined LT/TH and a separate channelized RT on the Old Havre Highway leg, and two thru lanes with left-turn bays on both legs of 15<sup>th</sup> Street NE. Also, a SB right-turn “slip-lane” would be created via an additional third lane between Bootlegger Trail and Old Havre Highway.

**Southbound Lane:** Add a third southbound lane between Bootlegger Trail and Old Havre Highway. This new third lane would allow a swift exit off of Bootlegger Trail in a southerly direction to a new slip lane at Old Havre Highway.

**Intersection of Bootlegger Trail and US 87:** Reconfigure by creating a raised channelization island to separate SB right-turns off Bootlegger Trail from NB left turns.

- **Estimated Cost:** \$5,628,000

**TOTAL ILLUSTRATIVE PROJECTS = \$215,505,000**

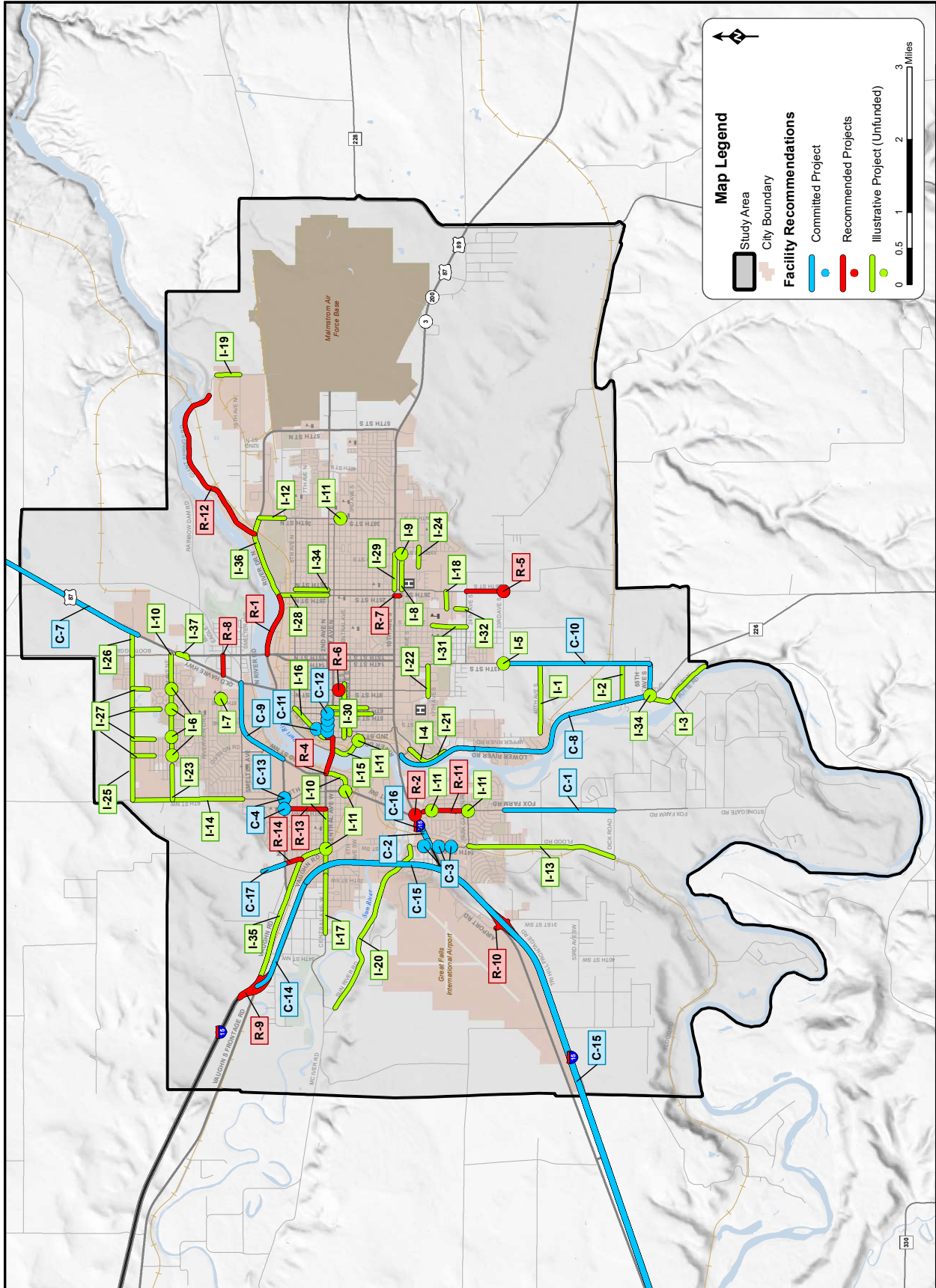


Figure 1: Facility Recommendations

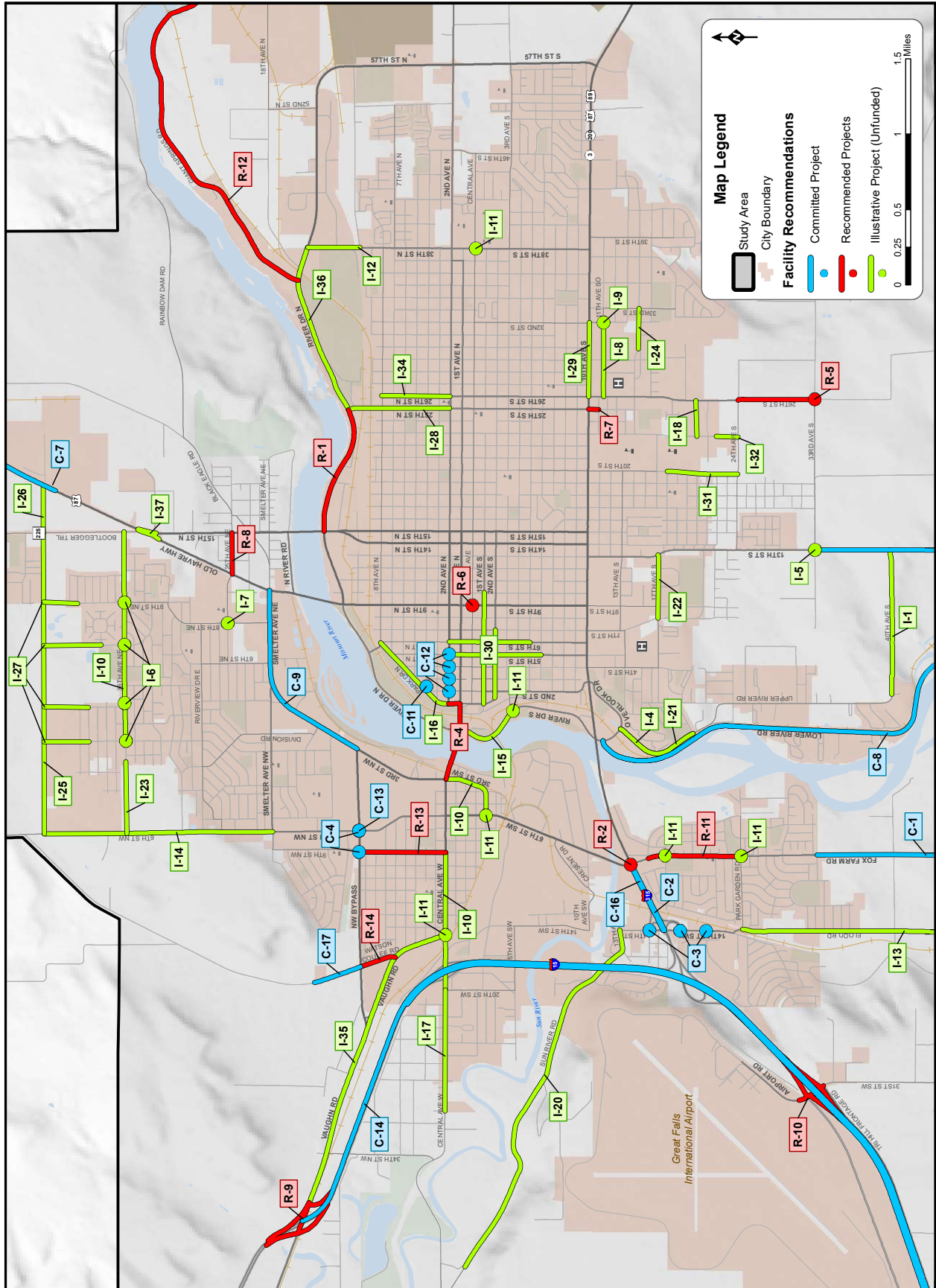


Figure 2: Facility Recommendations - Detail Area

## 5.0 NON-MOTORIZED NEEDS AND RECOMMENDATIONS

This section outlines priority issues and proposed recommendations for improving walking and bicycling in the Great Falls area based on analysis of deficiencies, crash data, public input (survey responses and open house comments), and overall opportunities and constraints in the Great Falls area.

### 5.1. GREAT FALLS TRANSPORTATION IMPROVEMENT PROGRAM FFY 2018-22

The Great Falls TIP includes review of projects related to walking and bicycling that have been completed since 2013 and which are planned for implementation during the Federal Fiscal Years (FFY) of 2018 to 2022. **Table 4** shows those projects that were completed, in progress, and upcoming. Note that the Park Dr/4<sup>th</sup> Ave N Pedestrian Crossing project listed in **Table 4** is a “committed” project, indicating that funds have been programmed and allocated for implementation.

**Table 4: Great Falls Area TIP FFY 2018-2022 Bicycle and Pedestrian Projects**

Category	Project	FFY	Description	Funding Agency	Total Cost	Status
<b>Pedestrian Only</b>	1 <sup>st</sup> Ave N	2013	Sidewalks/Ramps 25 <sup>th</sup> -38 <sup>th</sup> Sts	State/Federal	\$176,200	<b>COMPLETE</b>
<b>Pedestrian Only</b>	2 <sup>nd</sup> Ave N	2013	Sidewalks/Ramps 15 <sup>th</sup> -37 <sup>th</sup> Sts	State/Federal	\$306,800	<b>COMPLETE</b>
<b>Pedestrian and Disability</b>	1 <sup>st</sup> Ave N/2 <sup>nd</sup> Ave N	2014	Curb Ramps/Pavement Preservation	State/Federal	\$964,319	<b>COMPLETE</b>
<b>Pedestrian and Disability</b>	9 <sup>th</sup> St N	2014	Pavement Preservation/ADA	State/Federal	\$1,174,371	<b>COMPLETE</b> Not Closed
<b>Bicycling and Pedestrian</b>	Sun River Connector Trail	2015	Bike/ped facility adjoining Country Club Blvd. from Warden Bridge to Bike/ped facility at 6 <sup>th</sup> St SW	CMAQ	\$2,469,470	<b>COMPLETE</b> Not Closed
<b>Bicycling and Pedestrian</b>	Overlook Drive Sidewalk/Trail	2015	Sidewalk/trail from 10 <sup>th</sup> Ave S to vicinity of Visitor's Center	TA	\$810,988	<b>COMPLETE</b> Not Closed
<b>Bicycling and Pedestrian</b>	West Bank Park Trail ADA Improvements	2015	Trail widening, ADA connection in West Bank Park	TA	\$272,710	<b>COMPLETE</b> Not Closed
<b>Pedestrian only</b>	Great Falls Sidewalk Infill Project	2018	Sidewalks-various locations	CMAQ	\$483,000	<b>IN PROGRESS</b>
<b>Bicycling and Pedestrian</b>	Park Dr/4 <sup>th</sup> Ave N Ped Xing-GTF	2019	Pedestrian/Bicycle crossing improvement	TA	\$307,529	<b>COMMITTED (C-11)</b>

**TOTAL COST OF BICYCLING AND PEDESTRIAN PROJECTS (2013-2019): \$6,965,387**

## 5.2. PEDESTRIAN IMPROVEMENTS

This section outlines potential active transportation facilities relative to sidewalks, street crossings, and natural surface trails. The recommendations are intended to encourage active living by residents and visitors and accommodate a variety of ability levels with particular emphasis on establishing a well-connected pedestrian network that is comfortable and accessible to a wider range of the population. Priority issues and proposed recommendations are based on analysis of deficiencies, crash data, public input, and overall opportunities and constraints in the Great Falls area.

### 5.2.1. Overview

All residents within the Great Falls area are pedestrians at some point in their day – whether walking the dog, walking to the store or work, or from a vehicle to a final destination. This section includes pedestrian needs, system deficiencies, needs of those with disabilities or limited mobility, observation and recommendation development methodology, and proposed recommendations for pedestrian facility improvements that were developed from the public involvement process and from field observations.

Even though the River's Edge Trail provides a high-quality backbone to the Great Falls non-motorized transportation system, it lacks frequent neighborhood connections and its location does not make the trail a viable option for most utilitarian walking trips. The trail is typically the destination for the majority of its users. This, in addition to sidewalk network gaps (in areas of the city) and the attitude and perception of motorists towards non-motorized modes (such a low yielding rates to pedestrians in crosswalks) pose additional challenges to increased rates of walking.

### 5.2.2. Pedestrian Needs

People walk for various reasons and needs vary, often depending on trip purpose. All pedestrians share some common needs including safety, connectivity, and accessibility (especially for persons with disabilities). Senior citizens and mobility-impaired pedestrians may lack motorized transportation options and may consequently depend on transit and pedestrian-focused aspects of the transportation network.

#### **Needs of Pedestrians with Disabilities**

To adequately plan for pedestrians with disabilities, each disability and its corresponding limitations should be considered. It is important to also be aware of how planning for people with one disability may affect users with other impairments.

People with mobility impairments range from those who use wheelchairs, crutches, canes, orthotics, prosthetic devices, and face constraints. Uneven or rough surfaces that hinder movement or narrow surfaces that make maneuvering and rolling difficult, and steep uphill, downhill, and cross slopes are common obstacles for disabled users. Walking-aid users are most affected by the above mentioned obstacles, as well as long distances between crossing opportunities and situations that require fast reaction time.

Visually-impaired people (those who are partially or full blind or deaf, those with limited perceptions of touch or balance, and those with color blindness) face difficulties with lack of depth perception, information about their surroundings, and non-visual information; the inability to react quickly; complex intersections; and detection of street crossing timing.

Hearing-impaired pedestrians rely on visual information. Their primary mobility difficulties include the inability to hear approaching vehicles and detect the time of their arrival. This is especially an issue in locations with limited sight distances, such as curved street segments, or overgrown vegetation impeding sight lines.

People with cognitive impairments encounter difficulties in thinking, learning, responding, and performing coordinated motor skills and these impairments can cause some to experience difficulty finding their way. They may also not understand standard street signage, and may be unable to read and benefit from signs with symbols and colors.

Each proposed facility must be designed in accordance with the Americans with Disabilities Act (ADA) design standards.

### **Children and the Elderly**

Children are less mentally and physically developed than adults, and often have limited peripheral vision and less ability to judge speed and distance, locating sounds and comprehending street signs, they lack familiarity with traffic, and may act impulsively or unpredictably.

Older adults often exhibit degrading sensory or physical capabilities. This can lead to loss of vision and hearing, the ability to react quickly, and the strength to walk otherwise normal distances between places.

Similar to designing walking facilities for users with disabilities, similar consideration should be given to young and elderly users.

### **5.2.3. Recommended Improvement Methodology**

Pedestrian network improvements have been selected to close gaps in the network, make connections to and from major destinations, and improve overall comfort and sense of security for pedestrians.

Improvements to the pedestrian network will occur over time along the major street network in the Great Falls Area as part of roadway improvement projects, signal upgrade projects and as standalone pedestrian focused projects. In residential areas improvements could occur as part of a coordinated sidewalk program or as standalone publicly funded projects using sources like the Transportation Alternatives Program.

### **Sidewalk Program**

Sidewalk construction, management, and maintenance programs help renew and expand sidewalk networks that, due to myriad reasons, are currently fragmented, disconnected, or poorly maintained. Many Montana communities, including Great Falls, have programs for repairing aging sidewalk infrastructure; however, fewer communities have programs for funding or financing the installation of new sidewalk.

It is recommended that a solid funding source of at least \$50,000 annually be provided to match property owners' costs in a 50/50 cost share split. This program is a model that splits the cost of sidewalk replacement and/or construction between the property owner and the local agency. The source of funding can vary, but is typically a defined item in the agency's annual budget. Funding sources can be diverse and do not necessarily have to come directly from the City's revenue; they can include federal funding, voter-approved taxed or bond measures, fuel taxes, parking tolls, and others. Other cities around Montana utilize a variety of methods including low cost or no interest loans to property owners, adding the expense to street assessments, Special Improvement Districts, and Missoula's 'health plan' style approach where the city provides a minimum level of support and provides property owners with a maximum contribution independent of lot size.

Smaller cities in Montana have a smaller tax base and the total amount of funding (and therefore the amount of sidewalk management and maintenance that can be done) is less than larger cities like Missoula and Billings. For example, Kalispell's FY 2013 general fund appropriation was approximately

\$40,000 for sidewalk replacement only, while Missoula’s was between \$500,000 and \$800,000 for new sidewalk construction. Great Falls may wish to increase funding over time if the sidewalk program is successful. **Table 5** presents suggested sidewalk program elements for consideration.

**Table 5: Sidewalk Program Elements**

Target	Notes
<b>Coordinating Agency and Partners</b>	City of Great Falls Public Works Department
<b>Key Elements</b>	Cost sharing, sidewalk replacement and expansion policies, and City budget appropriation
<b>Timeframe</b>	On-going
<b>Potential Funding Sources</b>	Property owners; City of Great Falls; MDT
<b>Sample Programs</b>	Missoula, MT; Kalispell, MT

### 5.2.4. Recommended Facilities

This section includes all recommended facilities for pedestrian travel. Pedestrian network improvements are depicted graphically in **Figure 3**.

#### Sidewalks

Completing the sidewalk network gaps on the major street network will allow more predictable trips for pedestrians and will improve the overall connectivity of the Great Falls area.

**Table 6: Recommended Sidewalks**

ID	Location	Description	Length (miles)	Estimated Cost
SW-1	<b>4th St S</b> <i>13th Ave S to 12th Ave S</i>	Close gap in sidewalk.	0.02	\$5,100
SW-2	<b>4th St S</b> <i>10th Ave S to 12th Ave S</i>	Sidewalk gap on parcel of land between Pro Lube and Holiday Inn. This could be completed with new development in the future.	0.02	\$6,800
SW-3	<b>6th St N</b> <i>River's Edge Trail to 8th Ave N</i>	There is need for a connection to River's Edge Trail from the neighborhoods. There are ample goat trails in this area showing established use. The road could be converted to one lane through the bridges with a directional yield scenario.	0.05	\$15,200
SW-4	<b>17th Ave NE</b> <i>River's Edge Trail to 3rd St NW</i>	Connect existing sidewalk to River's Edge Trailhead.	0.15	\$43,200
SW-5	<b>16th Ave NW / 1st St NW</b> <i>16th Ave NW to 17th Ave NW</i>	Fill gap in existing sidewalk on 16th Ave NW and 1st St NW. This will connect businesses in the area.	0.07	\$20,600
SW-6	<b>Division Rd</b> <i>16th Ave NW to Smelter Ave NE</i>	Sidewalk is unlikely to be added with new development.	0.16	\$46,400
SW-7	<b>8th Street NE and Sacajawea Dr</b> <i>South of Baseball Field to West of Baseball Field</i>	Fill in sidewalk gap around the baseball field. Only 8th Street NE is on the major street network, but the entire length of sidewalk could be a Transportation Alternatives project.	0.14	\$41,900
SW-8	<b>NW Bypass</b> <i>9th St NW to 6th St NW</i>	Retrofit needed to close sidewalk gap.	0.06	\$18,000
SW-9	<b>9th St NE</b> <i>32nd Ave NE to 33rd Ave NE</i>	Close gap in sidewalk on both sides of the street.	0.02	\$3,800
SW-10	<b>36th Ave NE</b> <i>5th St NE to 6th St NE</i>	Construct sidewalk around park perimeter on 36th Ave NE. Fills gap and provides a greater hard edge to the park.	0.09	\$26,700

ID	Location	Description	Length (miles)	Estimated Cost
SW-11	<b>15th St N</b> <i>Railroad to River Drive</i>	Large gaps on the east side of the street.	0.08	\$24,200
SW-12	<b>15th St N</b> <i>8th Ave N to 10th Ave N</i>	Close gap in sidewalk as this path may eventually access River's Edge trail. Large goat trails are already present.	0.1	\$30,000
SW-13	<b>14th St N</b> <i>8th Ave N to 12th Ave N</i>	Large gaps on west side of roadway.	0.21	\$61,300
SW-14	<b>NW Bypass</b> <i>Stuckey Road to 9th St NW</i>	Install sidewalks on both sides of roadway, there are currently no sidewalks on this route.	0.74	\$220,200
SW-15	<b>3rd Ave S</b> <i>46th St S to 51st St S</i>	Most of these lots are developed and may not redevelop. Sidewalks should be retrofitted.	0.22	\$65,900
SW-16	<b>4th St S</b> <i>15th Ave S to 13th Ave S</i>	Gap in sidewalk exists over 3 parcels, two of which are already developed.	0.05	\$14,300
SW-17	<b>4th St S</b> <i>16th Ave S to 17th Ave S</i>	Sidewalk gap along one side of residential lot.	0.01	\$2,800
SW-18	<b>4th St S</b> <i>17th Ave S to 18th Ave S</i>	Sidewalk gap along one side of residential lot.	0.02	\$5,600
SW-19	<b>23rd Ave NE</b> <i>Division Road to 4th St NE</i>	Provides a sidewalk connection to Jaycee Park (pool) and helps get people from their cars to the front door. Also connects to new crosswalk.	0.19	\$56,100
SW-20	<b>13th Ave S</b> <i>5th St S to 7th St S</i>	Sidewalk gaps exist and about half of corridor is already developed. This is low priority as the south side of the road already has sidewalks.	0.15	\$45,600
SW-21	<b>7th St S</b> <i>10th Ave S to 13th Ave S</i>	Sidewalk gaps exists over developed parcels on both sides of the street. Will need some access control.	0.09	\$28,000
SW-22	<b>13th Ave S</b> <i>7th St S to 9th St S</i>	Discontinuity in sidewalk in front of ERA American Horizon. Modifications should be made to make this continuous for pedestrians.	0.03	\$9,700
SW-23	<b>5th Ave NW</b> <i>9th St NW to 6th St NW</i>	Complete sidewalks on both sides of the street.	0.17	\$49,800

**TOTAL SIDEWALK PROJECTS: \$841,200**

### 5.3. BICYCLE IMPROVEMENTS

This section outlines potential active transportation facilities relative to shared lane markings, bike lanes, shared use paths, and other spot improvements. The recommendations are intended to encourage active living by residents and visitors and accommodate a variety of ability levels with particular emphasis on establishing a well-connected bicycling network that is comfortable and accessible to a wider range of the population. Priority issues and proposed recommendations are based on analysis of deficiencies, crash data, public input, and overall opportunities and constraints in the Great Falls area.

#### 5.3.1. Overview

Improving the on- and off-street bicycling network will provide cohesive connections between destinations and will contribute to the viability of the bicycle as a transportation mode choice. Although the existing roadway network does not preclude bicycle use, connectivity needs to be accounted for when considering bicycle features.

The on-street network of bicycle facilities is largely undeveloped; there is significant potential to create rapid expansion with much apparent 'low-hanging fruit'. As it is for pedestrians, the River's Edge Trail is a high-quality backbone to the Great Falls bicycling network, but the trail's relatively few neighborhood



connections and location does not make it as attractive for most utilitarian bicycling trips and the trail is typically a destination for the majority of its users.

### 5.3.2. Policy and Program Recommendations

While improving walking and bicycling infrastructure is a vital component to increasing active transportation use, supportive programs and policies are a cost-effective complement and their impact should not be underestimated. Working directly with the public to encourage walking and bicycling can increase use of those modes, improve road safety, and strengthen the role of bicycling as a tourism generator in the Great Falls area. This section describes current efforts and future recommendations related to these programs and policies. The goals of these recommendations are to:

- Increase the visibility and legitimacy of bicycling and bicyclists in the Great Falls area;
- Support and enhance the infrastructure recommendations in this Plan; and
- Increase the number, safety, and comfort of people walking in the Great Falls area.

#### **BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE (BPAC)**

A Bicycle and Pedestrian Advisory Committee (BPAC) is made of citizen volunteers to advise the community leaders on bicycling and pedestrian issues and to make recommendations for Transportation Alternatives and other grant applications. The BPAC establishes the area's commitment to making bicycling and walking safer and more desirable, and has the potential to assist the City in securing funding for bicycle and pedestrian projects. Having an established BPAC is also desirable for receiving Bicycle or Walk Friendly Communities designation.

The charges of the BPAC may include some or all of the following:

- Review and provide citizen input on capital project planning and design as it affects bicycling and walking (e.g., corridor plans, street improvement projects, signing or signal projects, and parking facilities).
- Review and comment on changes to zoning, development code, comprehensive plans, and other long-term planning and policy documents.
- Participate in the development, implementation, and evaluation of the Transportation Plan recommendations.
- Provide a formal liaison between local government, staff, and the public.
- Develop and monitor goals and indices related to bicycling and walking in the jurisdiction.
- Promote bicycling and walking, including bicycle and pedestrian safety and education.

Because BPAC members are volunteers, it is essential to have strong staffing supporting the committee in order for it to be successful. A designated city staff member is the logical liaison to the BPAC and should take charge of managing the application process, managing agendas and minutes, scheduling meetings, bringing agency issues to the BPAC, and reporting back to the agency and governing body about the BPAC's recommendations and findings.

## ALTERNATE MODES COORDINATOR

The City of Great Falls does not have a designated Alternate Modes Coordinator, though the Planning Department has served some functions. In order for the goals of this plan to be realized, the Alternate Modes Coordinator should be the primary staff person overseeing implementation. In addition, the Alternate Modes Coordinator may have many other duties, including:

- Monitoring the design and construction of bikeways and trails, including those constructed in conjunction with private development projects.
- Ensuring bicycle and pedestrian facilities identified in specific plans are designed appropriately and constructed expediently.
- Serving as the staff liaison to the Bicycle and Pedestrian Advisory Committee.
- Coordinating implementation of the recommended projects and programs listed in this Plan.
- Identifying new projects and programs that would improve the community's environment for bicycling and walking.
- Coordinating evaluation of projects and programs.
- Pursuing external funding sources for project and program implementation.
- Updating the City website and other information portals with bicycling, walking, and trail resources.
- Completing the Bicycle-Friendly Communities application to the League of American Bicyclists.

It is recommended that the City of Great Falls provide dedicated funding for this important position.

## BICYCLE PARKING

Adequate bicycle parking is an important component of the bicycle network and represents end-of-trip accommodation for those who choose to travel by bicycle. The recommendations for bicycle parking are separated into several categories, including recommended ordinance and code language, parking design, short- and long-term parking, how bicycle parking may differ depending on land uses and neighborhoods of Great Falls, and how more bicycle parking can be implemented when it doesn't fall into previously outlined categories.

There are no current requirements for providing bicycle parking with new development in Great Falls. The incentive to provide bicycle parking is that it may substitute for a vehicular parking space up to a maximum of 5 percent of the required number of parking space, or 10 spaces, whichever is less (17.36.3.010). Because bicycle parking is not required, it may not be considered for a variety of reasons.

Without a mandatory bicycle parking requirement, existing and potential bicyclists in Great Falls cannot depend on secure, dedicated parking spaces at their destinations. Bicycle parking and end-of-trip facilities can be a determining factor in whether someone decides to make a bicycling trip.

### Short-term Bicycle Parking

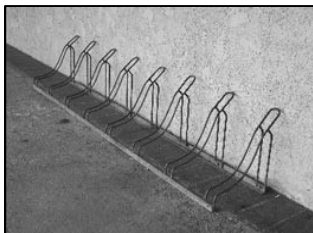
Short-term bicycle parking is intended for shoppers, customers, and other visitors who require bicycle storage and security for up to several hours. Short-term bicycle parking should serve at least the main entrance of a building and should be visible to pedestrians and bicyclists. Acceptable racks enable the bicyclist to lock the frame and one or both wheels with a user-provided U-lock or cable and support a bicycle by its frame in a stable upright position without damage to the bicycle or its finish.

In addition to the existing standards for bicycle parking in the Great Falls Municipal Code in 17.36.3.010-B (which are not included in the recommendations below, but are available in the Existing Conditions section), the City should consider adding the following as bicycle parking area design requirements:

1. If located outside, bicycle parking shall be located within 50 feet of each entrance to the building in a visible and obvious location to bicyclists. Bicycle parking should be permanently secured to a paved surface and be located such that it will not become buried by snow removal operations. Covered bicycle parking is recommended wherever possible.
2. Bicycle parking may be provided within a building, but the location must be easily accessible.
3. Bicycle racks and the area required for parking and maneuvering must meet the following standards:
  - a. In covered situations the overhead clearance must be at least 7 feet.
  - b. Each required bicycle parking space must be accessible without moving another bicycle.
  - c. Areas set aside for bicycle parking must be clearly marked and reserved for bicycle parking only.
  - d. At the same grade as the sidewalk or at a location that can be reached by an accessible route

**Rack Design**

Rack design standards ensure that required bicycle racks are designed so that bicycles may be securely locked to them without undue inconvenience and will be reasonably safeguarded from accidental damage. In addition to the requirements outlined already in the Great Falls Municipal Code, bicycle racks must hold bicycles securely and meet the following criteria:



- Allow the frame and one wheel to be locked to the rack when both wheels are left on the bike
- Allow the frame and both wheels to be locked to the rack if the front wheel is removed
- Be usable by bikes with no kickstand
- Be usable by bikes with water bottle cages



**Recommended Racks**

The following is based on guidance published by the Association of Pedestrian and Bicycle Professionals (APBP).

‘Inverted U’, or ‘Staple’ racks are typically secure to a concrete base and are very secure and easy to use.

‘Coat Hanger’ racks, if used properly, can support a bicycle at two points and can operate fixed to a concrete base or can be moved where needed.



*Recommended Bike Racks*



‘Post and Loop’ or ‘Lollypop’ racks have many of the same characteristics as ‘Inverted U’ racks, but are more compact. They can be installed in series (shown) or along a curb line in the sidewalk furnishing zone.

**Discouraged Racks**

‘Wheelbender’ racks only support the wheel of the bicycle and can cause serious damage to the bicycle if twisted while secured in the rack. These racks also do not work with all types of locks.

*Discouraged Bike Racks*

'Comb' racks suffer from many of the same shortcomings as 'Wheelbender' type racks where only the front or rear wheel of the bicycle is supported. Many users of this rack type lift their bicycle over the top and rest the frame on the rack to allow use of a bicycle lock.

'Wave' racks require the cyclist to place their bicycle through the 'wave' pattern, where it is only supported at one point, in order to properly secure the bicycle. Bicycle parked in these racks are unstable and frequently tip over. Many cyclists park their bicycle sideways in this rack to gain stability, thereby reducing the capacity by 60-80 percent.

### **Bike Corrals (In-street Bicycle Parking)**

This type of bicycle parking offers greater quantities of short-term bicycle parking (that would normally be placed on the sidewalk) in a consolidated space on the street occupying a traditional motor vehicle parking space. Bike corrals are commonly installed at locations that attract a high number of bicyclists and where parking bicycles at traditional short-term racks may crowd available sidewalk space. This approach is rapidly gaining popularity in the United States and in Montana (Missoula and Bozeman, pictured).



*Example bike corral in Missoula, MT.*

Before installing bike corrals, the responsible agency should determine how they will fit into snow removal and storage plans and street sweeping programs. The City may also delegate the installation and/or the maintenance of bike corrals to the BID or similar local, district-based associations.

The bike corral parking area can be delineated or protected using poured concrete curbs, bollards, or planter boxes. Whichever type of delineation is chosen, corrals should be designed with the user in mind, allowing for ingress to and egress from the parking area and maintaining the same aisle and spacing standards desired for the short-term bicycle parking.



*Example bike corral in Bozeman, MT.*

The benefits of bike corrals are not limited to the users themselves. Corrals can also provide, on average, a ratio of 8 to 12 customers to one parking space, and can focus more customers in targeted areas of downtowns or nearby businesses that tend to attract bicyclists.

### **Long-term Parking**

Long-term bicycle facilities are intended for bicyclists who need to park a bicycle for extended periods during the day, overnight or for a longer duration. Long-term bicycle storage is typically designed for and used by employees, students, residents, and commuters. The facility also frequently protects the bicycle from inclement weather.

These facilities may include:

1. **Lockers:** Fully enclosed, secure, and burglar-proof bicycle parking space accessible only to the owner or operator of the bicycle.
2. **Restricted Access Parking:** A location that provides short-term-style bicycle racks within a locked room or locked enclosure accessible only to the owners of bicycles parked within.



*Example on-site parking in Seattle, WA.*

3. **Personal Storage:** Storage within the view of the bicycle owner either in his or her office or another secure location within the building.

Facilities that support the above types of long-term bicycle parking include additional end-of-trip facilities like showers and changing areas. It is recommended that the City of Great Falls create a long-term bicycle parking section of the bicycle parking ordinance that provides requirements for new or remodeled buildings, including minimum space standards that should be included in the design and engineering of the building. If a new or remodeled building does not meet the required long-term parking space requirements below, it shall be exempt from this section of the ordinance. An example of ordinance language for long term parking in new and renovated buildings is found in the San Francisco Planning Code, Sections 155.3 and 155.4 (see <http://sfgov.org/planning/index.htm>).

### **Downtown Great Falls Bicycle Parking Recommendations**

Downtowns are a focal point for bicycle activity due to the high density of employment, restaurants and services. Downtowns are often under supplied in available motor vehicle parking, with many visitors unable to find parking in the immediate vicinity of their destination. Riding a bicycle downtown can offer many advantages to driving, including the ability to park a bicycle at the visitor's intended destination, and as a way to avoid parking fees at meters or in garages. Great Falls' downtown has a few bicycle racks, but there is not a dedicated program to ensure that these prime destinations have adequate accommodations for bicyclists. The 'Inverted U' or 'Post and Loop' rack type located parallel to the curb line in the sidewalk furnishing zone along with bicycle corrals at key locations are recommended.

### **Request-A-Rack**

The City or the Downtown Association should maintain a supply of bicycle racks that can be installed at the request of an existing business owner such a supply will increase the supply of bicycle parking downtown and provide strategic expansion for bicycle parking and to mitigate bicycles locked to posts, signs, and trees.

### **Minimum Required Bicycle Parking Spaces Ordinance**

It is proposed that the following be incorporated into City codes and ordinances (17.36.3.010). Cascade County should also incorporate the same bicycle parking requirements as stated below into existing zoning districts where commercial uses are permitted. Additionally, Cascade County should incorporate bicycle parking requirements into any proposed zoning districts or County-wide zoning efforts for commercial areas. Only those bicycle parking requirements pertaining to allowed uses for each zoning district should be included for that district.

Currently, the Great Falls Municipal Code lists land uses and number of bicycle parking spaces as recommended, with the language, "Bicycle parking *may* be provided consistent with the *recommended* standards contained in [this]...exhibit." The following land use categories and uses, as well as the short- and long-term bicycle parking spaces should be *required*. This ensures that bicyclists will be able to have predictable parking at their destinations.

At minimum, the number of spaces shown in **Table 7** should be considered.

**Table 7: Recommended Minimum Required Bicycle Parking Spaces by Land Use**

Use Categories	Specific Uses	Long-term spaces	Short-term spaces
<b>Residential Categories</b>			
<b>Household Living</b>	Multi-dwelling	1 per 4 units; or if no garage is available, 1 per unit	2, or 1 per 20 units
<b>Group Living</b>		2, or 1 per 20 residents	2, or 1 per 20 units
	Dormitory	1 per 8 residents	2, or 1 per 20 units
<b>Commercial Categories</b>			
<b>Retail Sales and Service</b>		2, or 1 per 12,000 sq. ft. of net building area	2, or 1 per 5,000 sq. ft. of net building area
	Temporary Lodging	2, or 1 per 20 rentable rooms	2, or 1 per 20 rentable rooms
<b>Office</b>		2, or 1 per 10,000 sq. ft. of net building area	2, or 1 per 40,000 sq. ft. of net building area
<b>Commercial Parking</b>		10, or 1 per 20 auto spaces	None
<b>Commercial Outdoor Recreation</b>		10, or 1 per 20 auto spaces	None
<b>Major Event Entertainment</b>		10, or 1 per 40 seats	2, or 1 per 40,000 sq. ft. of net building area
<b>Industrial Categories</b>			
<b>Manufacturing and Production</b>		2, or 1 per 15,000 sq. ft. of net building area	1 per 5,000 sq. ft. of floor space
<b>Warehouse and Freight Movement</b>		2, or 1 per 40,000 sq. ft. of net building area	1 per 20,000 sq. ft. of floor space
<b>Institutional Categories</b>			
<b>Basic Utilities</b>	Transit stations	8	None
<b>Community Service</b>		2, or 1 per 10,000 sq. ft. of net building area	2, or 1 per 10,000 sq. ft. of net building area
	Park and Ride	10, or 5 per acre	None
<b>Parks and Open Areas</b>		Per review	Per review
<b>Schools</b>	Elementary and/or Junior High	2 per classroom, or 1 per 5 students	2 near administrative offices
	Senior High or similar school	4 per classroom, or 1 per 10 students	2 near administrative offices
<b>Colleges</b>	Excluding dormitories (see Group Living, above)	2, or 1 per 20,000 sq. ft. of net building area, or per review	2, or 1 per 10,000 sq. ft. of net building area, or per review
<b>Medical Centers</b>		2, or 1 per 70,000 sq. ft. of net building area, or per review	2, or 1 per 40,000 sq. ft. of net building area, or per review
<b>Religious Institutions</b>		2, or 1 per 4,000 sq. ft. of net building area	2, or 1 per 2,000 sq. ft. of net building area
<b>Daycare</b>		2, or 1 per 10,000 sq. ft. of net building area	None
<b>Other Categories</b>			
<b>Aviation and Surface Passenger Terminals, Detention Facilities</b>		5 per terminal	None

Note: Wherever this table indicates two numerical standards, such as “2, or 1 per 3,000 sq. ft. of net building area,” the larger number applies.

## EDUCATION AND ENCOURAGEMENT PROGRAM RECOMMENDATIONS

The following programs are designed to raise awareness of walking and bicycling; connecting users to existing and proposed resources; educating these users; and encouraging residents and visitors in the Great Falls area to walk and ride a bicycle more often. Many of the recommended programs can be administered or implemented by volunteer groups or non-profit organizations.

### Bicycling Map

**Target:**

All bicyclists or potential bicyclists who are interested in knowing how and where to ride a bicycle.

**Coordinating Agency and Partners:**

City of Great Falls, Recreational Trails, Inc., Great Falls Bicycle Club, Chamber of Commerce, Cascade County.

**Key Elements:**

Clear symbology, designations, and services attractive for bicyclists. Use the map as a visual representation of bicycle infrastructure in the area and guide bicyclists, potential bicyclists, and visitors to designated bicycling routes, lanes, trails, paths, and related amenities. Update it regularly.

**Time frame:**

When coordinating agency and partners feel that the on- and off-street infrastructure network has developed to the point that it can and should be mapped; on-going.

**Potential funding sources:**

City of Great Falls; bike shops (in-kind donation); printers; active wellness, hospitals, and insurance companies; other sources of advertising; other revenue-generating sources to offset cost of printing and distribution.

**Sample programs:**

Salt Lake City:  
<http://bikeslc.com/Wheretoride/PDF/SLC2013BikeMapWebsite.pdf>

One of the most effective ways of encouraging people to bike is through the use of visual information on maps to show where existing or proposed infrastructure is located, communicate the ease of bicycling in Great Falls, and highlight recreational areas, popular destinations, and the area's trails system. The existing River's Edge Trail map, which is displayed and available for free at trail kiosks and in bike shops, provides excellent paved and unpaved trail information for the area. As the on-street bicycling network expands, a print and web version of an area-wide Great Falls bicycle map of on- and off-street bicycle facilities should be created not only to guide users and potential users, but also to provide a visual progress report from edition to edition. Maps should be available from the Chamber of Commerce, City Hall, bike shops, area hotels, and in kiosks along the River's Edge Trail.

### Recreation and Bicycle Tourism

**Target:**

Recreational and touring bicyclists; out-of-town bicyclists

**Coordinating Agency and Partners:**

Great Falls Area Chamber of Commerce, City of Great Falls, Cascade County, Great Falls Bicycling Club, Recreational Trails, Inc., Adventure Bicycling Association, Get Fit Great Falls

**Key Elements:**

Create and promote existing and future bicycling attractions and events (i.e. River's Edge Trail and mountain bike trails);

encourage out-of-town bicyclists to visit, stay, recreate, and spend money

**Time Frame:**

On-going

**Potential Funding Sources:**

Chamber of Commerce; hotels associations; mountain biking organizations (local, state, and national); City of Great Falls; bike shops (in-kind donation)

**Sample Programs:**

<http://www.adventurecycling.org>  
<http://www.warmshowers.org>

Partnering with the Great Falls Area Chamber of Commerce, the Great Falls area can cater to and attract touring and recreational bicyclists. Great Falls has the opportunity to raise its profile as a recreational bicycling destination and as the home to a world class paved and unpaved trail system. A partnership of the City of Great Falls, the Great Falls Chamber of Commerce, Great Falls Bicycle Club, and Recreational Trails, Inc., can plan how to use their meetings, websites, and other promotional tools to market cycling to current and potential visitors. Additional strategies could include launching a branding and signage campaign; promoting routes to, from, and within Great Falls via the Adventure Cycling Association, a national bicycle tourism and recreational route organization; and organizing a signature event in Great Falls capitalizing on its trails and other attractions that would be inviting to bicyclists, spectators, and other users (similar to Helena’s mountain biking events).



*Bicycle Touring in Libby, MT*

**Media Campaign**

**Target:**

Motorists, bicyclists, and pedestrians

**Coordinating Agency and Partners:**

Great Falls Area Chamber of Commerce, City of Great Falls, Cascade County, Great Falls Police Department, Get Fit Great Falls

**Key Elements:**

Media outreach, enforcement, education through media

**Time Frame:**

On-going, targeted between March and November

**Potential Funding Sources:**

Local print, television, and digital news outlets; billboard companies; traffic safety foundations and grant programs

**Sample Programs:**

Portland’s “See & Be Seen” Campaign:  
<http://www.portlandonline.com/transportation/index.cfm?&c=deib&a=bebfjh>  
 Pittsburgh’s “Care” Campaign: <http://bikepgh.org/care>



People often do not walk or ride a bike because they don't know the rules of the road or where to walk or ride. A marketing campaign that highlights these elements, safety, other support programs, etc., is an important part of creating awareness of bicycling and walking in the Great Falls area. This type of high-profile campaign is an effective way to reach the general public, highlight bicycling and walking as viable forms of transportation, and reinforce safety for all road users. Campaigns are particularly effective when kicked off in conjunction with other bicycling/walking events, back to school in the fall, major community events, baseball games, or other related initiatives.



Tacoma, WA's media campaign.

### Youth Bicycle Safety Education

<b><u>Target:</u></b>	Youth and elementary and secondary school-age students
<b><u>Coordinating Agency and Partners:</u></b>	Journey from Home Montana, Safe Routes to Schools, Great Falls Public Schools, City of Great Falls
<b><u>Key Elements:</u></b>	In-school or otherwise student and youth-focused instruction; safety; transportation mode choice
<b><u>Time Frame:</u></b>	On-going
<b><u>Potential Funding Sources:</u></b>	Federal and state safety grant funding; grants or other funding sources from the public school district; Department of Education
<b><u>Sample Programs:</u></b>	<a href="http://www.journeysfromhomemontana.org">http://www.journeysfromhomemontana.org</a> <a href="http://www.saferoutesinfo.org">http://www.saferoutesinfo.org</a>



***Journey from Home Montana safety clinic.***

School-based bicycle education programs educate students about the rules of the road, proper use of bicycle equipment, biking skills, street crossing skills, and the benefits of biking. These types of education programs can be part of a Safe Routes to School program (for more information, visit <http://www.saferoutesinfo.org>), which are usually sponsored by a joint City/school district committee that includes appointed parents, teachers, student representatives, administrators, police, active bicyclists and engineering department staff. The program can be effectively administered by a non-profit or other third-party bicycling, education, or safety-oriented organization.

## OTHER BICYCLING AND WALKING RECOMMENDATIONS

### Data Collection and User Counts

<b><u>Target:</u></b>	n/a
<b><u>Coordinating Agency and Partners:</u></b>	City of Great Falls, Cascade County, Recreational Trails, Inc., Great Falls Bicycle Club, Get Fit Great Falls, PPL Montana
<b><u>Key Elements:</u></b>	Regular bicycle and pedestrian user counts and surveys at set locations to provide for evaluation over time.
<b><u>Time Frame:</u></b>	Annually
<b><u>Potential Funding Sources:</u></b>	General funds, private donations
<b><u>Sample Programs:</u></b>	National Bicycle & Pedestrian Documentation Project: <a href="http://www.bikepeddocumentation.org">http://www.bikepeddocumentation.org</a> <a href="http://www.fhwa.dot.gov/environment/bikeped/study">http://www.fhwa.dot.gov/environment/bikeped/study</a>



*Bicycle intercept survey and count.*

Addressing the lack of existing bicycle and pedestrian count data and beginning data collection will help provide objective, data-driven support for the expansion of a bicycle and pedestrian network. Regularly documenting and assessing actual bicycle/pedestrian activity will help the City of Great Falls and Cascade County target investments where they are most beneficial and measure changes in rates of bicycling and walking over time. Bicycle and pedestrian user counts and surveys can be performed by trained volunteers and can require little, if any, supervision by City staff. In order to determine this Plan’s success at increasing bicycling and walking rates, it is necessary to

establish an annual data collection program. This program should tally the number of cyclists, pedestrians, and path users at key locations around the community (particularly at pinch points, in downtown, near schools, and on trails/paths); the same locations should be counted in the same manner annually or at standard times of the year to show changes in usage. If major non-motorized infrastructure projects (both public and private) are planned, baseline and post-construction user counts can be performed through this coordinated annual count process for maximum efficiency. Bozeman, Missoula, and Billings have all recently instituted counting programs using both manual volunteer-based counts and also automatic counters using various forms of detection.

A quality data-monitoring program can also help Great Falls obtain funding for new projects. Most grant programs require awardees to monitor the results of funded projects, including a baseline count and usage over time. Cities and counties with established bicycle and pedestrian monitoring programs have an advantage over others when pursuing funding, especially where they are able to suggest a relationship between rising activity levels and new investment(s) over a substantial period of time. Bozeman found in 2005 that adding bicycle lanes and sidewalks during a road retrofit increased bicycling and walking by a combined 258 percent. Subsequent observation over the 2011-2013 period has shown even more dramatic increases in bicycling. Data collection, including the collection of traffic speeds and volumes, crashes, compliance, weather conditions, or other factors (as the City of Great Falls and MDT already do) is also an essential tool for analyzing the success of any project, particularly projects that employ innovative or new treatments. Great progress on area-wide counts has already made through

some unique partnerships. For example, PPL Montana funding has allowed Pinnacle Research to collect user count data on the Rivers Edge Trail (RET) since 2007. The resulting data has been used for a variety of purposes. Most recently, the PPL Montana funded count information on RET has been used to bolster several grant applications for improvements to the RET.

It is recommended that the data collection program use methodology developed by the National Bicycle and Pedestrian Documentation project (<http://www.bikepeddocumentation.org>). In order to capitalize on moderate climate conditions, counts should be performed in the second week in September; one weekday count (from 5-7 PM on a Tuesday, Wednesday, or Thursday) and one Saturday count (12-2 PM) should be completed. Counters can be volunteers or agency staff, as long as proper training is provided. Procedures, answers to frequently asked question, forms, example, and more information in general are found on the website listed above.

By establishing and dedicating staff resources to a formal count program or initiative, Great Falls can begin to document progress on increasing walking and biking rates via a ‘Report Card’ and build community support and awareness for future projects.

**Benchmarking Report**

<b><u>Target:</u></b>	n/a
<b><u>Coordinating Agency and Partners:</u></b>	City of Great Falls, Cascade County, MDT
<b><u>Key Elements:</u></b>	Regular examination of key metrics to track trends in bicycling and walking over time.
<b><u>Time Frame:</u></b>	Annually or biannually
<b><u>Potential Funding Sources:</u></b>	General funds or grant funding for initial report, staff time to update at regular intervals
<b><u>Sample Programs:</u></b>	Minneapolis Bicycle Account: <a href="http://www.ci.minneapolis.mn.us/www/groups/public/@publicworks/documents/images/wcms1p-085029.pdf">http://www.ci.minneapolis.mn.us/www/groups/public/@publicworks/documents/images/wcms1p-085029.pdf</a>

A benchmarking report will be able to help guide the City of Great Falls as it moves towards improving conditions for non-motorized users by tracking and visualizing past investments and future investments at regular intervals. The document will be created in its first edition to establish baselines in non-motorized user counts, miles of facilities developed over time, crashes and other metrics that can be updated by the city on a regular basis. Such a document is helpful to maintain steady investment over time and to track the benefits of those investments.

**5.3.3. Recommended Facilities**

Bicycle facilities vary from bicycle routes designated by signage or shared lane markings to separated, off-street facilities along exclusive rights-of-way. Opportunities to develop bicycle facilities and a cohesive network also vary and may range from deliberate and coordinated development on the part of the city to taking advantage of independent street construction, reconstruction and resurfacing projects. Street resurfacing in particular, is a low-cost way to provide bicycle infrastructure. When streets are resurfaced, new pavement markings are required. During this process, bicycle facilities can often be added depending on existing roadway width and feasibility.

The recommended Great Falls area bike network represents a comprehensive set of existing and proposed bicycle transportation and recreation facilities. Bicycle network improvements are depicted graphically in **Figure 3**. The proposed bicycling network for the Great Falls area consists of:

- Shared lane markings
- Bike lanes
- Buffered bike lanes
- Shared use path projects and connections to trails and paths
- Spot improvements including signalization, crossings, tunnels, traffic diverters, etc.

In the case of roadway retrofit projects where a street may be reconfigured to provide the physical space for bicycle or buffered bicycle lanes additional study, neighborhood outreach, business outreach and other activities may be needed prior to implementation.

### Shared Lane Markings

Shared lane markings, or sharrows, are stenciled markings installed as an on-street facility where bicycles share the travel lanes with automobiles. Typically, these facilities occur on local roadways or on roadways with low traffic volumes and speeds. Streets with low motor vehicle volumes and speeds that are prioritized for bicycle travel are known as ‘Bicycle Boulevards’. Such streets ideally have speeds of less than 25 mph and volumes of less than 3,000 vehicles per day. Treatments could include reconfiguring or providing stop signs to favor bicyclists, pavement markings, wayfinding signage, and intersection treatments. The level of treatment varies between facilities and is dictated by traffic conditions and safety. Traffic calming should only be applied to bicycle boulevards where traffic speeds or volumes are deemed excessive, or where the neighborhood supports or requests such treatments. **Table 8** depicts recommended segments of the major street network for consideration of shared lane markings.

**Table 8: Recommended Shared Lane Markings**

ID	Location	Length (miles)	Notes	Estimated Cost
SLM-1	<b>9th Ave S</b> 47th St S to 54th St S	0.49	Shared lane markings as alternative to 10th Avenue South; replaces Bike-4 from 2009 LRTP Update which recommends 8th Ave.	\$7,100
SLM-2	<b>9th Ave S</b> 29th St S to Ella Dr	1.26	Alternative to 10th Avenue South; replaces Bike-4 from 2009 LRTP Update which recommends 8th Ave.	\$18,200
SLM-3	<b>9th Ave S</b> 2nd St S to 27th St S	2.03	Alternative to 10th Avenue South; replaces Bike-4 from 2009 LRTP Update which recommends 8th Ave.	\$29,300
SLM-4	<b>13th Ave S</b> River's Edge Trail to 20th St S	1.55	East-west route south of 10th Avenue South; part of Bike-13 recommendation from 2009 LRTP Update.	\$22,200
SLM-5	<b>University of Great Falls West</b> 20th St S to Administration Complex	0.09	Shared lane markings.	\$1,400
SLM-6	<b>University of Great Falls East</b> Providence Hall to 23rd St S	0.08	Shared lane markings.	\$1,300
SLM-7	<b>12th Ave S</b> 23rd St S to 26th St S	0.24	Shared lane markings.	\$3,700
SLM-8	<b>17th Ave NE</b> River's Edge Trail to 17th Ave NE	0.04	Connection to River's Edge Trail for NW neighborhoods; part of Bike-2 Recommendation from 2009 LRTP Update.	\$700
SLM-9	<b>20th St</b> 9th Ave S to 8th Ave N	0.88	Possible bike boulevard (traffic diversions already exist).	\$12,700
SLM-10	<b>36th St</b> 10th Ave S to 38th St N	1.16	Bicycle boulevard on a quieter street, will need wayfinding on the north side of the route to reach the shared use path; Bike - 3 recommendation from 2009 LRTP Update.	\$16,700

ID	Location	Length (miles)	Notes	Estimated Cost
SLM-11	<b>2nd St</b> <i>2nd Ave S to 4th Ave N</i>	0.3	Shared lane markings on 2nd Street South from recommended bike lanes at 2nd Avenue South to Riverfront Park. Turn lanes and parking suggest bike lanes may not be realistic for this segment. Parking on one side, or the center turn lanes could be removed, to provide a continuous bike lane at least up to 2nd Avenue North.	\$4,400
SLM-12	<b>4th Ave N</b> <i>38th St N to 52nd St N</i>	0.96	Partially from the Bike-6 recommendation in the 2009 LRTP Update, but instead of terminating at 46th Street South, the route is continuous to 52nd Street North, connecting to many additional trails.	\$13,900
SLM-13	<b>46th St</b> <i>Ella Dr to 4th Ave N</i>	0.7	Bike route connecting 4th Avenue North to 9th Avenue South. Partially from the Bike-6 recommendation in the 2009 LRTP Update, but instead of terminating at 3rd Avenue South, the route continuous to 9th Avenue South.	\$10,100
SLM-14	<b>Park Garden Rd</b> <i>14th St SW to Park Garden Estate</i>	0.81	New bike route; partial fulfillment of Bike-10 recommendation in the 2009 LRTP Update.	\$11,800
SLM-15	<b>13th Ave SW</b> <i>14th St SW to 11th St SW</i>	0.36	Bike route	\$5,200
SLM-16	<b>14th St SW</b> <i>Park Garden Rd to 13th Ave SW</i>	0.51	Connects Park Garden Road to 13th Avenue SW. Option exists to remove a northbound travel lane, south of Country Club Blvd, and re-stripe road to have bike lanes in both directions. Turn lanes to I-15 interchange can be rebuilt. This bike route was proposed as part of the Bike-14 recommendation in the 2009 LRTP Update. The trail along the BNSF line will provide a more comfortable connection to the mall than designating this arterial as a bike route.	\$7,500
SLM-17	<b>18th Ave SW</b> <i>BNSF Rail Trail to Fox Farm Rd</i>	0.36	If trail along BNSF railroad is completed.	\$5,200
SLM-18	<b>6th St NW</b> <i>Smelter Ave NE to 36th Ave NE</i>	0.65	Install only if 38th Avenue NE connects through. This is part of the Bike-15 recommendation in the 2009 LRTP Update. This will likely not be a very comfortable route due to gradient and the narrowness of the unimproved road. If the road is ever reconstructed, consider bike lanes, or at least an uphill bike lane.	\$9,500
SLM-19	<b>Park Garden Rd</b> <i>Gore Hill Connector to 14th St SW</i>	0.54	This part of the connection does not tie into the eastern section of Park Garden Road and would have marginal value without the shared-use path at Gore Hill. If the Gore Hill shared-use path is completed, this street should have sharrows added to aid wayfinding. This is part of the Bike-10 recommendation in the 2009 LRTP Update.	\$7,800
SLM-20	<b>36th Ave NE</b> <i>6th St NW to Bootlegger Trail</i>	2.46	Road is 44 feet wide and could support bike lanes, but due to the character of the street, shared lane markings are recommended. If 36th Avenue NE ever extends to 6th Street NW, the sharrows should be added when constructed. This is part of the Bike-15 and Bike -19 recommendations in the 2009 LRTP Update.	\$35,400
SLM-21	<b>17th &amp; 19th Ave S</b> <i>Upper River Rd to Overlook Dr</i>	0.53	Part of Bike-17 recommendation in the 2009 LRTP Update.	\$7,700
SLM-22	<b>4th Ave S</b> <i>3rd St S to 3rd Ave S / 43rd St S</i>	3.29	Traffic volumes range from 400-900 vpd - should be a successful bike route. High School provides barrier in vehicular flows.	\$47,300
SLM-23	<b>17th Ave S</b> <i>13th St S to 20th St S</i>	0.54	Connecting bike lanes at each end and Sunnyside Elementary School.	\$7,900
SLM-24	<b>6th St N</b> <i>8th Ave N to River Rd N</i>	0.1	Shared lane markings.	\$1,500
SLM-25	<b>2nd Ave S</b> <i>15th St S to 38th St S</i>	1.88	Continues from buffered bike lane couplet.	\$26,900

ID	Location	Length (miles)	Notes	Estimated Cost
SLM-26	<b>Black Eagle Connector</b> <i>15th St N to 20th St N</i>	0.28	Much of this is unpaved, so wayfinding signage is important. The intent is to make Black Eagle more aware of good connections to the River's Edge Trail.	\$4,100
SLM-27	<b>19th St N</b> <i>Black Eagle Connector to 25th Ave N</i>	0.19	North / south spine bike route for Black Eagle. Leads to the River's Edge Trail. Wayfinding signs are important.	\$2,900
SLM-28	<b>6th St &amp; 9th St NE</b> <i>Smelter Ave NE to 36th Ave NE</i>	0.98	This bike route has changed slightly from the 2009 LRTP Update to incorporate access to the school on Sacajawea Dr.	\$14,100
SLM-29	<b>Division Rd / Riverview 4 / 2nd St NE</b> <i>Smelter Ave NE to 40th Ave NE</i>	0.95	This is modified from the 2009 LRTP Update which calls for the bike route to continue up Division Road and terminate at Riverview Drive. There is considerable growth in this area and modifying the bike route to utilize 2nd Street NE will create more connectivity.	\$13,700
SLM-30	<b>3rd Ave S</b> <i>43rd St S to 57th St S</i>	0.84	This recommendation differs from the 2009 LRTP Update in that it terminates at 57th Street South (future bike lanes), and also at 43rd Street South, to connect with the 4th Avenue South bike route that goes all the way downtown.	\$12,200
SLM-31	<b>Cherry Drive / Meadowlark Dr</b> <i>Fox Farm Rd to Meadowlark Dr Connector</i>	0.46	From the 2009 LRTP Update. Only makes sense to implement if the Country Club connection can be made at the east end of Meadowlark Drive.	\$6,700
SLM-32	<b>32nd St</b> <i>Charles Russell Park Trail to 8th Ave N</i>	1.26	From the 2009 LRTP Update, with modification at south end to connect with medical center and future trail	\$18,200
SLM-33	<b>8th Ave N</b> <i>6th St N to 38th St N</i>	2.62	Street is already signed as a bike route, shared lane markings would help emphasize bicycle presence, particularly westbound where downhill grades may influence high speeds.	\$37,600
SLM-34	<b>4th Ave N</b> <i>2nd St N to 38th St N</i>	2.93	Street is already signed as a bike route; shared lane markings would help emphasize bicycle presence.	\$42,100
SLM-35	<b>12th Ave N / 19th St N</b> <i>15th St NE to River Dr N</i>	0.39	Low volume road used by bicyclists to access River's Edge Trail, shared lane markings would help emphasize bicycle presence.	\$5,700
SLM-36	<b>5th Ave SW</b> <i>4th St SW to 6th St SW</i>	0.15	Add shared lane markings, per MPO request.	\$2,300

**TOTAL SHARED LANE MARKING PROJECTS: \$475,000**

### Bike Lanes

A bike lane provides a striped and stenciled lane for one-way travel on a street or highway. Many of the identified projects will be completed by the City of Great Falls, Cascade County, or MDT through retrofit or as part of maintenance activities (striping and signage only).

Similar to a bike lane in that a striped and stenciled lane is provided for one-way bicycle travel on a street or highway, buffered bicycle lanes provide additional width to 'buffer' the bike lane, on the side of the adjacent travel lane and/or parking lane. They provide a more comfortable experience for bicyclists, but they also are an effective tool to discourage motorists from driving or parking in the bike lane that would otherwise be excessively wide. This excessive width can sometimes be present when a roadway reconfiguration project converts an underutilized travel lane or parking lane to a bike lane.

**Table 8** contains segments on the major street network that are recommended for bike lanes or buffered bike lanes. The type of project that is ultimately chosen is at the discretion of the planning staff.

**Table 9: Recommended Bike Lanes**

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-1	<b>4th St S</b> 10th Ave S to 17th Ave S	0.31	Identified as a bike route in the 2009 LRTP Update. Street is approximately 38 feet wide, with surface parking lots along the street. Recommend 6 foot bike lanes be added. No striping changes needed otherwise.	\$3,500
BIKE-2	<b>11th Ave S</b> 26th St S to 32nd St S	0.5	Typical section options include 12-foot travel lanes and 5-foot bike lanes, or 11-foot travel lanes and 6-foot bike lanes. ADT is 4,750 vpd (in 2011 per MDT). Curb-to-curb width is 34 feet.	\$5,700
BIKE-3	<b>11th Ave S</b> 32nd St S to 39th St S	0.56	Adapted from Bike-7 in 2009 LRTP Update. Road exhibits 44-45 feet of curb-to curb width. No traffic counts are available. Typical section options include: Option 1: 10-foot travel lanes, 5-foot bike lanes and 7.5-foot parking lanes. Option 2: 12-foot travel lanes, 6-foot bike lanes 8-foot parking lane. Parking would be eliminated on one side of street. Recommend eliminating parking on south side due to land use and availability of off-street parking. Option 3: Provide shared lane markings 13 feet from curb face.	\$5,800
BIKE-4	<b>2nd Ave N</b> 38th St N to 57th St N	1.22	Pavement symbols and signs needed only.	\$8,800
BIKE-5	<b>20th St S</b> 10th Ave S to 17th Ave S	0.34	Just south of 10th Avenue South, ADT is 7,790 vpd (in 2011 per MDT). Curb-to-curb width is 34 feet. Typical section options include 12-foot travel lanes and 5-foot bike lanes, or 11-foot travel lanes and 6-foot bike lanes.	\$4,000
BIKE-6	<b>16th Ave S</b> 20th St S to 23rd St S	0.24	ADT is 3,720 vpd (in 2011 per MDT). Curb-to-curb width is 34 feet. Typical section options include 12-foot travel lanes and 5-foot bike lanes, or 11-foot travel lanes and 6-foot bike lanes.	\$2,900
BIKE-7	<b>23rd St S</b> 10th Ave S to South of Hospital Trail	0.33	ADT is 4,410 vpd (in 2011 per MDT). Curb-to-curb width is 34 feet. Typical section options include 12-foot travel lanes and 5-foot bike lanes, or 11-foot travel lanes and 6-foot bike lanes.	\$3,800
BIKE-8	<b>26th St S</b> 11th Ave S to 24th Ave S	0.63	ADT is 12,380 vpd just south of 10th Avenue South. No turn bay configuration changes would be proposed. ADT is 3,850 vpd just north of 24th Avenue South and 1,560 vpd just south of 24th Avenue South (in 2011 per MDT). 4- to 3-lane conversions have been successful on streets with as high as 23,000 vpd. 20,000 vpd is the generally accepted rule of thumb in the industry. Proposed changes include providing TWLTL and bike lanes. The curb-to-curb width is 50 feet, which would allow for 6-foot bike lanes, 12-foot travel lanes and a 12-foot TWLTL.	\$58,800
BIKE-9	<b>13th St S</b> 10th Ave S to 24th Ave S	0.53	Road is already striped with a white line and sufficient shoulder in most places. ADT is 7,530 vpd just south of 10th Avenue South, 4,950 vpd just south of 22nd Avenue South and 3,270 vpd just south of 24th Avenue South. When this is restriped, areas with three lanes (turn lane) may need to be narrowed up slightly to provide bicycle access.	\$20,800
BIKE-10	<b>24th Ave S</b> 13th St S to Eastern Terminus	1.51	Future project if road is reconstructed or widened. Part of Bike-11 recommendation in the 2009 LRTP Update.	\$17,200

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-11	<b>Fox Farm Road</b> Cherry Dr to E Fiesta	0.74	Road width is 50 feet (curb-to-curb). ADT is 6,880 vpd (in 2011) just north of Park Garden Road and has generally been declining since 2007 (MDT). ADT reduces to 5,290 vpd south of Park Garden Road and 2,760 vpd near E Fiesta.  Bike lanes can be added while maintaining existing parallel parking, 8.5-foot parking lanes, 5-foot bike lanes, and 12-foot travel lanes.  As a second option, parking could be eliminated on the east side of the street where all houses on this section have either existing side street parking or are not oriented to Fox Farm Road. In this option the road would have an 8-foot parking lane on the west, a 2-foot buffer, a 5-foot parking lane, two 12-foot travel lanes, a 10-foot center turn lane (TWLTL) and a 5-foot bike lane.	\$7,600
BIKE-12	<b>20th St S</b> 10th Ave S to 9th Ave S	0.05	Short section of bike lane to provide continuity with bike lane on south side off 10th Avenue South. Prohibit parking - ample parking exists along this street off-street.	\$600
BIKE-13	<b>38th St</b> 10th Ave S to River Dr N	1.24	For northern portion (10th Avenue North to River Drive North) pavement width is about 27 feet and would need to be widened at some point in the future during a resurfacing or reconstruction project.  For southern portion the road is currently 34 feet in width, making each side of the road about 17 feet - which is not a comfortable dimension for on-street parking.  Suggest 11-foot driving lanes and 6-foot bike lanes all the way to 10th Avenue South. This was previously recommended in the 2009 LRTP Update.	\$14,100
BIKE-14	<b>2nd St S</b> 10th Ave S to 2nd Ave S	0.45	This project replaces the Bike-5 recommendation from the 2009 LRTP Update, which recommended a bike route be established. The street is approximately 47 feet wide which would translate to two options.  Option 1: 8-foot parking lanes, 5-foot bike lanes, and 10.5-foot travel lanes, or  Option 2: 7.5-foot parking lanes, 5-foot bike lanes, and 11-foot travel lanes.  At the extreme south end, suggest ramping southbound bike lane up on to sidewalk and either connecting to trail along north side of 10th Avenue South, or crossing users to the NE corner to connect with the Overlook Drive Path.	\$4,700
BIKE-15	<b>57th St S</b> 10th Ave S to 2nd Ave N	0.65	All that is needed is to paint the symbols and sign the route. Consider adding a through bike lane at 2nd Avenue North and a bike slip lane going east to Malmstrom AFB.	\$4,800
BIKE-16	<b>10th Ave N</b> 38th St N to 10th Ave N AFB Gate	1.38	Provide bike lanes if and when road is reconstructed. For approach to Malmstrom AFB, two eastbound lanes currently exist, though these constrict to one in a chicane near the guarded entry point. Consider restriping road to provide bike lanes, and a link for residents on base, to the rest of the Great Falls bicycle system.	\$15,700
BIKE-17	<b>Central Ave W</b> Sun River Trail to I-15	1.08	If road is ever improved or widened, 4-foot shoulders would suffice. Part of Bike-12 recommendation in the 2009 LRTP Update.	\$12,300
BIKE-18	<b>Central Ave W</b> I-15 to 3rd St NW	1.39	Consider prohibiting on-street parking and providing bike lane symbols and signs west of 9th Street NW.  East of 9th Street NW the travel lanes would need to be resized to 10-foot travel lanes to provide 5-foot bike lanes. Road is currently between 60 and 62 feet curb-to-curb. Consider exploring the idea of a road diet which would result in a 3/lane cross-section (which have been shown to handle ADTs in excess of 20,000 vehicles per day). Buffered bike lanes could be created to the railroad crossing if the road were reduced to 3 lanes.	\$10,000



ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-19	<b>6th St NW</b> <i>NW Bypass to Smelter Ave NW</i>	0.39	This street is too narrow to provide bicycle lanes and parking. Parking appears to be underutilized. Road appears to have been re-built in recent years with new sidewalks and curb and gutter.  Options are to prohibit parking completely, providing for 9-foot bike lanes (no change to the existing striping would be required other than adding pavement markings and signage), or to prohibit parking on one side of the street, relocate the centerline and provide 5-foot bike lanes in both directions. In this second option the street would have one 8-foot parking lane, 5-foot bike lanes and two 12-foot travel lanes.	\$2,900
BIKE-20	<b>17th Ave S</b> <i>4th St S to 13th St S</i>	0.75	Bike lanes can be striped along this entire stretch with no changes to configuration. This route connects several major destinations. No on-street parking is currently available except for one stretch where the street has been widened.  This project differs from the bike route that was proposed in the Bike 17 recommendation in the 2009 LRTP Update.	\$8,500
BIKE-21	<b>25th St N</b> <i>8th Ave N to N River Rd</i>	0.15	Street is 34 feet wide. Prohibit parking (all businesses have large off-street lots) and provide 5-foot bike lanes. Unless a connection to the River's Edge Trail can be made, there is little point to this project.	\$1,700
BIKE-22	<b>15th St N</b> <i>Wire Mill Rd to Bootlegger Trail</i>	0.49	Add bicycle pavement markings and signs to existing shoulder of 15th Street North, from Montana Avenue to 36th Avenue NE. This project replaces the Bike 19 Recommendation in the 2009 LRTP Update, which recommends bike route signage only. This project also does not connect directly to the River's Edge trail as adequate width does not exist in the street south of Montana Avenue where the road is constrained. Speeds are too high for a shared lane.	\$3,500
BIKE-23	<b>9th St N</b> <i>2nd Ave N to 8th Ave N</i>	0.31	Sharrow pavement markings are installed on this segment. Street is 46 feet wide. Bike lanes were recommended on 9th Street in the past two versions of the LRTP.  Option 1: Narrow parking and travel lanes. Arrive at a section that includes 7.5-foot parking lanes, 5-foot bike lanes and 10.5-foot travel lanes.  Option 2: Most residences/businesses have parking off of east-west cross streets. Remove one parking lane to provide a cross section of an 8-foot parking lane, 2-foot buffer, 5-foot bike lane, 12-foot travel lanes, 2-foot buffer, and a 5-foot bike lane. Removing parking would have to be by action of the City Commission and is highly unlikely.	\$5,200
BIKE-24	<b>9th St N</b> <i>1st Ave N to 2nd Ave N</i>	0.05	Sharrow pavement markings have been installed on other segments of this corridor. Street is 42 feet wide curb-to-curb. Reduce travel lanes to 10.67 feet in width, and provide 5-foot bike lanes.	\$1,900
BIKE-25	<b>9th St N</b> <i>Central Ave to 1st Ave N</i>	0.05	Sharrow pavement markings have been installed on other segments of this corridor. Remove southbound right turn bay, convert through lane to a combination lane and provide bike lanes. From 2013 RPA TMC's, right turns account for 15% of AM Peak and less than 11% of PM Peak. Because through bicyclists will be to the right of some turning traffic, intersection markings and "yield to bikes" signs should be added at this intersection.	\$1,900
BIKE-26	<b>9th St S</b> <i>1st Ave S to Central Ave</i>	0.05	Sharrow pavement markings have been installed on other segments of this corridor. Remove northbound right turn bay. According to 2013 RPA TMC's, AM Peak hour shows 6% of northbound traffic turning right at Central, whereas PM Peak hour shows 8% of northbound traffic turning right. Eliminating this turn lane will have a very minor impact on traffic. Space can be used to provide bike lanes in both directions. Intersection alignments may be slightly off, but not greatly so.	\$1,900
BIKE-27	<b>9th St S</b> <i>2nd Ave S to 1st Ave S</i>	0.05	Sharrow pavement markings have been installed on other segments of this corridor. Street is 42 feet wide curb-to-curb. Reduce travel lanes to 10.67 feet in width, and provide 5-foot bike lanes.	\$1,900

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-28	<b>9th St S</b> 10th Ave S to 2nd Ave S	0.41	Sharrow pavement markings have been installed on other segments of this corridor. Street section varies as 44-to-46 feet (changes block by block). Bike lanes were recommended on 9th Street in the past two versions of the LRTP. Option 1: Where 46 feet wide - narrow parking and travel lanes. Arrive at a section that includes 7.5-foot parking lanes, 5-foot bike lanes and 10.5-foot travel lanes. Where 44 feet wide: 7-foot parking lanes, 5-foot bike lanes and 10-foot travel lanes. Option 2: Most residences/businesses have parking off of east-west cross streets. Remove one parking lane to provide a cross section of an 8-foot parking lane, 2-foot buffer, 5-foot bike lane, 12-foot travel lanes, 2-foot buffer, and a 5-foot bike lane. Removing parking would have to be by action of the City Commission and is highly unlikely.	\$4,200
BIKE-29	<b>9th St S</b> 17th Ave S to 10th Ave S	0.31	Sharrow pavement markings have been installed on other segments of this corridor. Section is approximately 34 feet. Street is continuously served by off-street parking lots. Provide 6-foot bike lanes and 11-foot travel lanes. Prohibit parking along entire length. Prohibiting parking would have to be by action of the City Commission and is highly unlikely.	\$8,000
BIKE-30	<b>Smelter Ave NW</b> 6th St NW to 5th St NE	0.99	Smelter Avenue has vital importance for non-motorized connectivity for adjacent neighborhoods. 2013 realized new widened sidewalks from Riverview Blvd NW to 3rd Street NW. This project reiterates the recommendation for bike lanes from 6th Street NW to Riverview Blvd NW (2009 LRTP Update), however it also recommends continuing them to 3rd Street NW to reduce the need for bicyclists to weave across traffic to access the sidepath and to offer options for those who would rather ride on the street. The street is wide enough for bike lanes with a 52-foot typical section (where it has been improved). Additional curb/gutter/sidewalk work is needed where the street has not yet been improved. Parking would be prohibited at the extreme western extent for a short interval.	\$12,900
BIKE-31	<b>9th St N</b> 8th Ave N to River Dr N	0.17	North of railroad tracks, widths get tight. Option in this area is to provide one-way travel on sidewalk and ramp down near tracks to bike lanes converted from existing shoulder/parking lanes. Parking lanes not needed along this stretch. Convert parking lanes to bike lanes. Recommend using 10 feet as 6-foot bike lanes with 3 to 4 feet of buffer space	\$2,300
BIKE-32	<b>3rd Ave S</b> River's Edge Trail to 2nd St S	0.13	Road is 40 feet wide with two lanes. All businesses along it have large surface parking lots. 2012 volumes are 4,300 vpd. This connects on-street users to the RET. Ideally the westbound approach to River Drive S would have a through bike lane to connect with the trail. This was recommended as a bike route in the 2009 LRTP Update.	\$1,600
BIKE-33	<b>Smelter Ave NE</b> 3rd St NW to Western Walmart Entrance	0.17	For this segment the existing shoulders are not large enough for buffered bike lanes (at least on the north side). Mark pavement for conventional bike lanes.	\$1,300
BIKE-34	<b>Division Rd</b> 3rd St NW to Smelter Ave NE	0.26	Recommendation in the 2009 LRTP Update. Road is 40 feet wide. Recommend 14-foot travel lanes and 6-foot bike lanes.	\$3,000
BIKE-35	<b>River Dr N</b> 15th St N to 38th St N	1.95	If River Drive North is improved to a 3-lane arterial section, an assessment to the viability of this non-motorized amenity should be made as public sentiment and stakeholder feedback has identified this route as an important gap in the visionary bicycle network for the community.	\$19,700
BIKE-36	<b>25th St S</b> 15th Ave S to 10th Ave S	0.2	If 25th Street South is converted to a one-way street, south of 10th Avenue South, it makes sense to continue the bike lane south of 10th Avenue South. Depending on configuration there could be one travel lane and a bike lane with two parking lanes, or on-street parking could be prohibited. However, in this area parking seems well utilized.	\$1,200

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-37	<b>13th St S</b> 21st Ave S to 24th Ave S	0.15	If roadway is ever reconstructed bike lanes should be included.	\$1,700
BIKE-38	<b>5th St N</b> 2nd Ave N to Park Dr N	0.26	Travel volumes are relatively low (ADT under 2,000 vpd). This street will function well with a single travel lane and buffered bike lanes. Alternatively, on-street parking could be prohibited as most residences front side streets and businesses have off-street lots.	\$2,100
BIKE-39	<b>6th St SW</b> Country Club Blvd to Central Ave W	0.91	Shoulders are already 10 feet wide. Designating existing wide shoulders as bike lanes has been done in Kalispell and Missoula on similar roadways. Prohibit non-emergency parking. Bike lane should be buffered, if possible, by putting a 2- to 3-foot buffer between the travel lane and bike lane.	\$10,400
BIKE-40	<b>Fox Farm Road</b> Cherry Dr to Country Club Blvd	0.13	Currently 5-lane section with ADT of 12,760 vpd just south of Country Club Blvd (becomes 10th Avenue South). Typical section could be narrowed to a single travel lane in each direction, with a wide buffered bike lane, with little significant impact to traffic congestion. Approach lanes at Country Club Blvd would be maintained if possible.	\$6,600
BIKE-41	<b>1st Ave S</b> Park Dr S to 10th St S	0.73	Recommendation taken from the Downtown Great Falls Access Circulation and Connectivity Study - this buffered bike lane was the preferred alternative. Section includes 5-foot one-way bike lane, a 3-foot travel lane buffer, and a 2-foot parking side buffer (in addition to travel lanes).	\$9,500
BIKE-42	<b>2nd Ave S</b> 2nd St S to 6th St S	0.33	Recommendation taken from the Downtown Great Falls Access Circulation and Connectivity Study - this buffered bike lane was the preferred alternative. Section includes 5-foot one-way bike lane, a 3-foot travel lane buffer, and a 2-foot parking side buffer (in addition to travel lanes).	\$6,600
BIKE-43	<b>2nd Ave S</b> 7th St S to 15th St S	0.65	From 7th Street South to 15th Street South, drop one of the two travel lanes and provide a buffered bike lane. ADT is just under 1,850 vpd, and at two one-way lanes there is excess capacity - even with a single travel lane. Recommend buffered bike lane aligning with wider section to the west. Provide travel lane and parking lane side buffers.	\$9,300
BIKE-44	<b>5th St</b> 6th Ave S to 2nd Ave N	0.41	Recommendation taken from the Downtown Great Falls Access Circulation and Connectivity Study - this buffered bike lane was the preferred alternative. Section includes 5-foot one-way bike lane, a 3-foot travel lane buffer, and a 2-foot parking side buffer (in addition to travel lanes).	\$7,100
BIKE-45	<b>6th St S</b> 5th Ave S to 2nd Ave N	0.36	Recommendation taken from the Downtown Great Falls Access Circulation and Connectivity Study - this buffered bike lane was the preferred alternative. Section includes 5-foot one-way bike lane, a 3-foot travel lane buffer, and a 2-foot parking side buffer (in addition to travel lanes).	\$6,700
BIKE-46	<b>2nd Ave S</b> 6th St S to 7th St S	0.08	Continue the buffered bike lane to the east one block from the Downtown study's recommendations	\$1,400
BIKE-47	<b>6th St NW</b> Central Ave W to NW Bypass	0.42	Street is currently 4 lanes with a center median that controls access and provides space for left turn bays. MDT's traffic counts indicate a 2011 ADT of 9,780 vpd, with a peak ADT of 10,740 vpd (in 2010). This is well below the available capacity of a 3-lane cross-section.  To add a bike lane (which the 2009 LRTP Update recommends) will require removing a travel lane. This results in between 10 and 11 feet of space being available on each side of the road.  This plan recommends a 7-foot bike lane with a 3-foot buffer area. At intersections where a right turn bay is needed the buffered bike lane can terminate with shared lane markings leading bicyclists along the left edge of the right only lane.	\$9,800

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-48	14th St 10th Ave S to River Dr N	1.15	<p>This street currently experiences volumes ranging from 5,300 vpd to 7,000 vpd (ADT) with two southbound travel lanes and a 9-foot parking lane. Speed limit is 30 mph, making shared lane use less desirable. Parking is somewhat utilized, however most homes/businesses have ample parking in off-street areas or with frontage on side-streets. Bicycle warning signs are posted along the corridor. Due to the few stops and signalized crossings, this is an attractive fast through route for bicyclists. The recommended facility type is a buffered bicycle lane. This can be achieved via the following two options:</p> <p>Option 1: The parking lane can be removed to provide a 9-foot bicycle area, with a 6-foot wide bike lane and a 3-foot buffer. This would be the most desirable option.</p> <p>Option 2: The road could still likely function well with a single travel lane given the volumes. The buffered bicycle lane could exist either between the parking lane and the driving lane, or on the side of the road with no parking. The buffered bike lane could become an 'add lane' turn bay with shared lane markings where necessary to improve intersection level of service.</p> <p>A conventional bike lane could also be considered. The street is approximately 32 feet wide. If travel lanes were reduced to 10 feet, and the parking lane reduced to 7 feet, a 5-foot bike lane could be provided. However, all of these dimensions are at the absolute minimum of current engineering practice.</p> <p>The 2009 LRTP Update recommended bike lanes north of 8th Avenue North in Bike-18.</p>	\$11,100
BIKE-49	15th St 10th Ave S to River Dr N	1.18	<p>This street currently experiences volumes ranging from 6,400 vpd to approximately 7,400 vpd (ADT), with two northbound travel lanes and a 9-foot parking lane. Speed limit is 30 mph, making shared lane use less desirable. Parking is somewhat utilized, however most homes/businesses have ample parking in off-street areas or with frontage on side-streets. Bicycle warning signs are posted along the corridor. Due to the few stops and signalized crossings, this is an attractive fast through route for bicyclists. The recommended facility type is a buffered bicycle lane. This can be achieved via the following two options:</p> <p>Option 1: The parking lane can be removed to provide a 9-foot bicycle area, with a 6-foot wide bike lane and a 3-foot buffer. This would be the most desirable option.</p> <p>Option 2: The road could still likely function well with a single travel lane given the volumes. The buffered bicycle lane could exist either between the parking lane and the driving lane, or on the side of the road with no parking. The buffered bike lane could become an 'add lane' turn bay with shared lane markings where necessary to improve intersection level of service.</p> <p>A conventional bike lane could also be considered. The street is approximately 32 feet wide. If travel lanes were reduced to 10 feet, and the parking lane reduced to 7 feet, a 5-foot bike lane could be provided. However all of these dimensions are at the absolute minimum of current engineering practice.</p> <p>The 2009 LRTP Update recommended bike lanes north of 8th Avenue North in Bike-18.</p>	\$11,300
BIKE-50	1st Ave S 10th St S to 15th St S	0.41	<p>ADT is just under 2,000 vpd. At two one-way lanes, there is excess capacity even with a single travel lane.</p> <p>Recommend buffered bike lane aligning with wider section to the west. Provide travel lane and parking lane side buffers.</p>	\$6,600

ID	Location	Length (miles)	Notes	Estimated Cost
BIKE-51	25th St 10th Ave S to 8th Ave N	0.93	<p>This street currently experiences volumes ranging from 3,000 vpd to approximately 7,000 vpd (ADT), with two southbound travel lanes and a 9-foot parking lane. Speed limit is 30 mph, making shared lane use less desirable. Parking is somewhat utilized, however most homes/businesses have ample parking in off-street areas or with frontage on side-streets. Bicycle warning signs are posted along the corridor. Due to the few stops and signalized crossings, this is an attractive fast through route for bicyclists. The recommended facility type is a buffered bicycle lane. This can be achieved via the following two options:</p> <p>Option 1: The parking lane can be removed to provide a 9-foot bicycle area, with a 6-foot wide bike lane and a 3-foot buffer. This would be the most desirable option.</p> <p>Option 2: Less likely, but it is possible that the road could still function with a single travel lane given the volumes. The buffered bicycle lane could exist either between the parking lane and the driving lane, or on the side of the road with no parking. The buffered bike lane could become an 'add lane' turn bay with shared lane markings where necessary to improve intersection level of service.</p> <p>A conventional bike lane could also be considered. The street is approximately 32-34 feet wide. If travel lanes were reduced to 10 feet, and the parking lane reduced to 7 feet, a 5-foot bike lane could be provided. However all of these dimensions are at the absolute minimum of current engineering practice.</p> <p>This recommendation was depicted as a bike lane in the 2009 LRTP Update.</p>	\$9,300
BIKE-52	26th St 10th Ave S to 8th Ave N	0.92	<p>This street currently experiences volumes ranging from 3,000 vpd to approximately 4,500 vpd (ADT), with two northbound travel lanes and a 9-foot parking lane. Speed limit is 30 mph, making share lane use less desirable. Parking is somewhat utilized, however most homes/businesses have ample parking in off-street areas or with frontage on side-streets. Bicycle warning signs are posted along the corridor. Due to the few stops and signalized crossings, this is an attractive fast through route for bicyclists. The recommended facility type is a buffered bicycle lane. This can be achieved via the following two options:</p> <p>Option 1: The parking lane can be removed to provide a 9-foot bicycle area, with a 6-foot wide bike lane and 3-foot buffer. This would be the most desirable option.</p> <p>Option 2: Less likely, but it is possible that the road could still function with a single travel lane given the volumes. The buffered bicycle lane could exist either between the parking lane and the driving lane, or on the side of the road with no parking. The buffered bike lane could become an 'add lane' turn bay with shared lane markings where necessary to improve intersection level of service.</p> <p>A conventional bike lane could also be considered. The street is approximately 32-34 feet wide. If travel lanes were reduced to 10 feet, and the parking lane reduced to 7 feet, a 5-foot bike lane could be provided. However all of these dimensions are at the absolute minimum of current engineering practice.</p> <p>This recommendation was depicted as a bike lane in the 2009 LRTP Update.</p>	\$9,300
BIKE-53	3rd St NW Central Ave W to Smelter Ave	1.12	<p>10-12 foot shoulders currently exist on this stretch of 3rd Street NW. With bicycle stencils and signs, bike lanes could be created. It is recommended to provide a 7-foot bike lane and a 3-footbuffer to provide a greater feeling of separation. As the road is resurfaced in the future, opportunities should be utilized to provide through bike lanes into the intersections. ADT volumes are 14,000 vpd to 17,000 vpd.</p>	\$12,800

ID	Location	Length (miles)	Notes	Estimated Cost
<b>BIKE-54</b>	<b>Smelter Ave</b> <i>West Walmart Entrance to 10th St NE</i>	0.38	Shoulders are wide enough for buffered bike lanes on this segment of Smelter Avenue. If deceleration lanes are strongly desired, they can be shared lanes, with shared lane markings down the middle. Making them as short as possible will be crucial to reduce the speed differential.	\$4,300
<b>BIKE-55</b>	<b>5th St S</b> <i>10th Ave S to 6th Ave S</i>	0.2	Travel volumes are relatively low (2,500-3,000 vpd). A buffered bike lane could be maintained until half a block south of 9th Avenue South where the street would revert to existing for intersection capacity.  Alternatively, on-street parking could be prohibited as most residences front side streets and businesses have off-street lots.	\$2,500
<b>BIKE-56</b>	<b>6th St S</b> <i>10th Ave S to 5th Ave S</i>	0.26	ADT volumes are 2,500 vpd - 3,000 vpd). On-street parking could be prohibited as most residences front side streets and businesses have off-street lots.	\$3,000
<b>BIKE-57</b>	<b>6th St N</b> <i>2nd Ave N to 8th Ave N</i>	0.31	ADT volumes are 800 vpd - 1,500 vpd). This street would function well with a single travel lane and buffered bike lanes. Alternatively, on-street parking could be prohibited as most residences front side streets and businesses have off-street lots.	\$3,400

**TOTAL BIKE LANE PROJECTS: \$429,500**

### Shared Use Paths

A shared use path provides pedestrian and bicycle travel on a paved right-of-way completely separated from any street or highway. The River's Edge Trail is an example of a shared use path. Shared use paths in the Great Falls area are designed at a minimum to be ten feet wide. **Table 9** depicts locations that should be considered for shared use paths.

**Table 10: Recommended Shared Use Paths**

ID	Location	Length (miles)	Notes	Estimated Cost
<b>SUP-1</b>	<b>University of Great Falls Connector</b> <i>Administration Complex to Providence Hall</i>	0.06	Provides an east-west bike route in a section of the city that lacks connectivity.	\$41,600
<b>SUP-2</b>	<b>Clara Park Path</b> <i>Ella Ave to 47th St S</i>	0.16	Formalize existing goat trail. Replaces Bike-4 from 2009 LRTP Update, which recommends 8th Avenue.	\$77,300
<b>SUP-3</b>	<b>Lions Park Path</b> <i>27th St S to 29th St S</i>	0.15	Connects 9th Avenue South. Replaces Bike-4 from 2009 LRTP Update, which recommends 8th Avenue.	\$73,500
<b>SUP-9</b>	<b>Westgate Development Master Plan Pathway</b> <i>17th Ave NE to Smelter Ave</i>	0.23	Part of Westgate Development Master Plan by CTA Architects.	\$152,700
<b>SUP-10</b>	<b>Meadowlark Dr Connector</b> <i>Meadowlark Dr to Existing Country Club Blvd/Bridge Path</i>	0.38	From the Bike-8 recommendation in the 2009 LRTP Update. Uses existing underpass and connects to path along north side of bridge.	\$247,400
<b>SUP-11</b>	<b>BNSF Rail Trail</b> <i>14th St SW to 13th Ave SW</i>	0.43	Connects River's Edge Trail to the Marketplace (with underpass).	\$728,600
<b>SUP-12</b>	<b>Gore Hill Connection</b> <i>1st West Hill Dr to Air Cargo Drive</i>	0.22	Connection to airport on west side of I-90 per request of MPO.	\$104,700

ID	Location	Length (miles)	Notes	Estimated Cost
SUP-13	<b>67th Street N</b> 18th Ave N to River's Edge Trail	0.35	From the Bike -16 recommendation in the 2009 LRTP Update.	\$165,200
SUP-14	<b>15th St N Connector Trail</b> 15th St N to 19th St N	0.33	As recommended in Bike-18 recommendation in the 2009 LRTP Update. If deemed feasible, a trail descending to the existing River's Edge Trail as close as possible to the 15th Street North bridge would be preferred, as it would better serve trail users wanting to go west.	\$157,300
SUP-16	<b>South of Hospital Trail</b> 23rd St S to 29th St S	0.5	To be completed as land develops. Easements at least with plat as construction may be optimized as one project, or in greater batches than by parcel.	\$329,000
SUP-17	<b>10th St Bridge Rehabilitation</b> River Dr N to N River Rd	0.2	If the 10th Street Bridge is ever rehabilitated.	\$1,969,700
SUP-18	<b>6th St N Access Ramps</b> River's Edge Trail to River's Edge Trail	0.08	Access down to 6th Street North from River's Edge Trail.	\$49,800
SUP-19	<b>River Drive South Trail</b> 1st Ave N to 3rd Ave S	0.33	Will stay on the riverbank under the RR bridge, between River Drive South and the river. Results in no "at-grade" road crossings.	\$1,441,800
SUP-20	<b>10th Ave N Sidepath</b> 38th St N to 57th St N	1.17	Connects existing path and downtown system to Malmstrom AFB.	\$556,100

**TOTAL SHARED USE PATH PROJECTS: \$7,020,100**

## 5.4. SPOT IMPROVEMENTS

Improvements that are recommended at specific locations rather than along a corridor are known as spot improvements. These could include signalization, crossing improvements, 4-way stop control, streetscape, trail connections or other small connections fall under this category. Crosswalks and intersection improvements are another type of spot improvement, or a recommendation to improve the non-motorized transportation system by simultaneously improving the roadway network for all users. Crosswalks allow pedestrians and other non-motorized users to cross streets in predictable and designated places.

Bicycle and pedestrian facilities may be also able to be accommodated once a roadway's shoulders are widened or improved. This type of improvement is typically found in non-urban settings. Areas where shoulder widening can be accommodated are include in **Table 11** along with the locations of other recommended bike and pedestrian spot improvements.

**Table 11: Recommended Spot Improvements**

ID	Improvement	Type	Notes	Estimated Cost
<b>Pedestrian Spot Improvements</b>				
SPOT-1	NW Bypass & 3rd St NW	Crosswalks	"T" intersection (i.e. three-legs). Crosswalks are faded on the west and north leg of intersection and non-existing on the south leg. Because of high traffic volumes, ladder crossings (high-visibility) are recommended in order to maintain appearance of crosswalks and designated pedestrian space. Consider adding 'pork chop' islands on both directions on the NW Bypass legs to reduce pedestrian crossing distance.	\$11,900
SPOT-2	Ave B NW & 9th St NW	Crosswalks	Near school.	\$2,800
SPOT-3	23rd Ave NE & Jaycee Park	Crosswalks	Access to/from playground and pool. Some parking spaces may need to be removed in order to accommodate a safe crosswalk.	\$1,500
SPOT-4	23rd Ave NE & 4th St NE	Crosswalks	Add crosswalks on all sides of intersection.	\$2,800
SPOT-5	2nd Ave N & 7th St N	Crosswalks	Crosswalks, traffic calming, and increased speed limit enforcement will benefit high pedestrian traffic (especially during school year) that is produced by Whittier and the Community Rec Center.	\$1,300
SPOT-6	2nd Ave N & 8th St N	Crosswalks	Crosswalks, traffic calming, and increased speed limit enforcement will benefit high pedestrian traffic (especially during school year) that is produced by Whittier and the Community Rec Center.	\$1,300
SPOT-7	3rd Ave S & 46th St S	Crosswalks and Sidewalks	Provide crosswalks on northern and eastern legs of intersection; provide sidewalk along 46th Street South to curb line.	\$6,100
SPOT-8	10th Ave S & 18th St S	New Ped Signal or Hybrid Beacon	There are no pedestrian crossings between 15th and 20th Streets (5 pedestrian crashes have been reported in this section).	\$103,400
SPOT-9	10th Ave S & 29th St S	New Ped Signal or Hybrid Beacon	There are no pedestrian crossings between 26th and 32nd Streets (5 pedestrian crashes have been reported in this section).	\$103,000
SPOT-10	4th Ave S & 9th St S	Crosswalks	Near recorded pedestrian crashes on 9th St; mark crossings with yield signs and lines.	\$4,100
SPOT-11	5th Ave S & 9th St S	Crosswalks	Near recorded pedestrian crashes on 9th St; mark crossings with yield signs and lines.	\$4,100
SPOT-12	8th Ave S & 9th St S	Crosswalks	Near recorded pedestrian crashes on 9th St; mark crossings with yield signs and lines.	\$4,100



ID	Improvement	Type	Notes	Estimated Cost
SPOT-13	25th Ave NE & 8th St NE	4-Way Stop	Convert two-way (east-west) stop to a full, four-way stop. Near school, lower speeds.	\$800
SPOT-14	3rd St NW & River's Edge Trail	Trail Connection	Connect NW Bypass & 3rd St NW to West Bank Park and the River's Edge Trail	\$55,800
SPOT-15	1st Ave N & Park Dr	Intersection Improvement	Accessing Gibson Park difficult from downtown. Improve crossing by prioritizing pedestrian traffic on porkchops, and by improving signal timing (leading pedestrian interval).	\$6,100
SPOT-16	2nd Ave S / Park Drive 2nd Ave S to 1st Ave S	Streetscape	Sidewalk is lacking in this area, though there is plenty of paved surface. Cars are parking where pedestrians would be walking. Suggest creating a new streetscape with pullouts for parking and a defined sidewalk that has curb separation.	\$11,500
SPOT-17	Smelter Ave NE 8th St NE to 10th St NE	Streetscape	Sidewalk needs to be defined - ideally some access management could occur along here as well.	\$25,300
<b>Bicycle Spot Improvements</b>				
SPOT-18	Upper River Rd 40th Ave S to Overlook Dr	Shoulder Widening	If road is ever rebuilt, provide at least four feet of rideable shoulder. If rumble strips are considered, widen shoulder design to allow for four feet of rideable width. This is a modification of the Bike-17 recommendation from the 2009 LRTP Update.	\$1,713,600
SPOT-19	Lower River Rd 40th Ave S to Overlook Drive	Shoulder Widening	If road is ever rebuilt, provide at least four feet of rideable shoulder. If rumble strips are considered, widen shoulder design to allow for four feet of rideable width. This is a modification of the Bike-20 recommendation from the 2009 LRTP Update.	\$859,700
SPOT-20	25th St N & River Dr	Trail Connection	Investigate viable neighborhood connections between 25 <sup>th</sup> St N and River's Edge Trail. Incorporate bicycle and pedestrian needs with River Drive improvements in this location.	Unknown
SPOT-21	14th St SW & 20th Ave SW	Railroad Tunnel	Connects River's Edge Trail to the Marketplace.	\$394,000
SPOT-22	15th St N & River Dr	Intersection Improvement	Facilitate connections from 15th Street North to new trail connection.	\$12,900
SPOT-23	Central Ave W & I-15	Travel Lane Reduction	Remove travel lane on north side for bike lane/shoulder.	\$20,000
SPOT-24	Central Ave W & RR Crossing	Remove Raised Median	Remove raised median and provide bike lane.	\$50,000
SPOT-25	Fox Farm Rd & 33rd Ave S	General Roadway Improvement	Improve south of development, in addition to providing bike lanes where most people live. The undeveloped section of this road is where most open house and survey suggestions were identified (of those within this neighborhood) and it is also where a fatal crash occurred.	Unknown
SPOT-26	4th Ave S & 19th St S	Improve Existing Full Roadway Closure	Make this an obvious part of a bicycle route rather than just bollards sticking out of the concrete. Ensure adequate bicycle passage clearance and include pavement markings and wayfinding signage.	\$2,900
SPOT-27	4th Ave S & 18th St S	Improve Existing Full Roadway Closure	Make this an obvious part of a bicycle route rather than just bollards sticking out of the concrete. Ensure adequate bicycle passage clearance and include pavement markings and wayfinding signage.	\$2,900
SPOT-28	Fox Farm Rd & 18th Ave S	Intersection Signalization Improvement	Possible RRFB.	\$25,500
SPOT-29	19th St N Intersection	Intersection Improvement	Evaluate and install enhanced non-motorized crossing treatments to River's Edge Trail.	\$40,000

**TOTAL SPOT IMPROVEMENT PROJECTS: \$3,467,400**

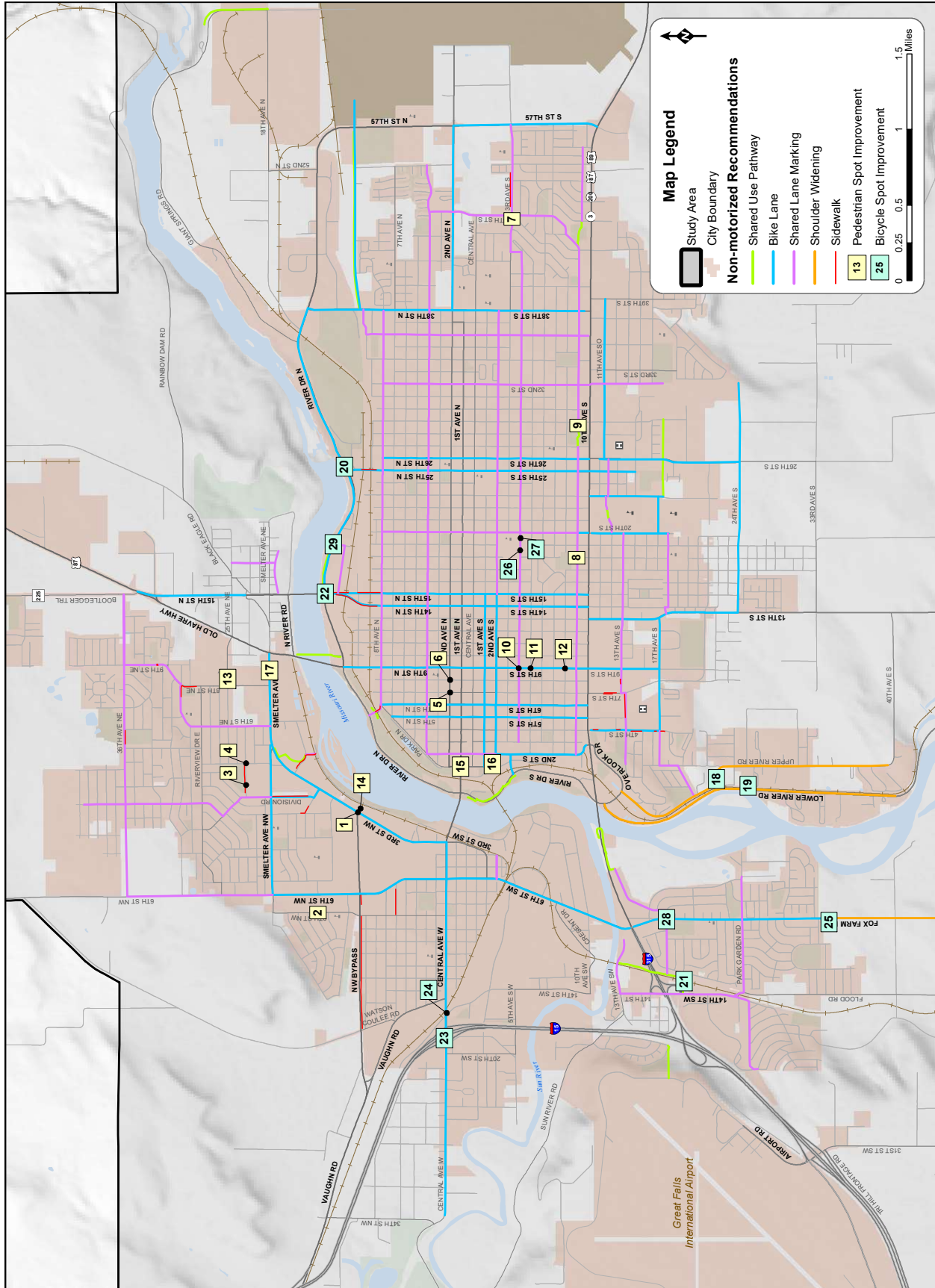


Figure 3: Non-Motorized Recommendations

## 6.0 TRANSIT IMPROVEMENTS

Public transportation services in the Great Falls area take the form of fixed-route passenger bus service operating on a scheduled service, and "demand-responsive" bus/van service providing door-to-door service for the elderly and those unable to use the fixed-route service. Public transit has been characterized in the Great Falls Area as a service for transit dependents. With one hour gaps between buses, loop routes that add time and inconvenience to bus travel, and lack of support facilities such as connecting sidewalks, bus pads, and stop amenities, service is minimal.

The LRTP envisions an integrated multimodal transportation system that meets sustainable growth expectations, supports economic vitality, and improves quality of life. To achieve this vision, transit must play a much greater role in providing travel choice within the Great Falls Area. This includes increased service frequency, longer service hours, and expanded coverage.

### 6.1. PLANNED COMMITTED IMPROVEMENTS

Due to extensive funding limitations, there are few "committed" projects on the horizon concerning transit. Transit District personnel have reiterated that due to limited funds, they are essentially in a survival mode. Although their recent TDP identified a number of short-term and long-term improvements, none have been implemented due to funding constraints.

Transit service requires a bus fleet and spares. If transit service is to be expanded over time to increase frequency and add coverage area, this fleet needs to expand. In order to be competitive, the buses need to be replaced when approximately 12 years old. With an aged fleet, there are several drawbacks that impact customer satisfaction. Vehicle reliability is not as good as a more modern fleet, leading to an increased number of road failures and service disruptions. Customers are not given the advantage of new technology, such as improvements in seating, accessibility, and comfort when older equipment is kept in service beyond its useful life. Associated with a larger fleet is the requirement for servicing these buses and an improved/expanded fleet facility

As of the 2014 LRTP, there were 21 fixed-route vehicles and nine paratransit vehicles in the existing transit fleet. Seven of the fixed-route buses were 19 years old and had exceeded their useful life, and another four were 11 years old. Although the TDP identified a handful of recommendations, inadequate funding for vehicles and additional drivers dictate that these items be placed on hold. These improvements are described in greater detail in the following section. Route changes coincident to these recommendations are as shown on **Figure 4**.

Fleet replacement on a designated four-year cycle is the most pressing transit need to continue successful operations. As the older vehicles are cycled out of the fleet, and a consistent replacement cycle is realized, GFT will turn attention to other recommendations in the TDP such as installation of bus stops, shelters and route service changes.

### 6.2. RECOMMENDED IMPROVEMENTS FROM TDP UPDATE

The TDP prepared as a part of past planning efforts identified several service design needs and fixed stop considerations that were recommended for implementation. The Great Falls Transit District plans to eventually implement the recommendations upon realization of improved funding mechanisms. The needs as identified are as follows:

### Short-Term (1-3 Years)

A “preferred service plan” was chosen in conjunction with Great Falls Transit staff from the available transit service information and options in the TDP analysis. The preferred service seeks to provide a high level of quality service to residents of Great Falls at minimal additional cost. The TDP estimates the increase in cost to implement the preferred service plan to be \$250,000. The additional costs are due to operating an additional vehicle all day (due to splitting Route 1) and the increased mileage on Route 7 (due to the decreased headway). The preferred service is presented in **Figure 4**.

As shown in the figure, Route 1 would be split into two segments—east and west. The east portion of the route will be referred to as Route 1, while the western portion will become Route 8. Splitting this route into two segments provides multiple benefits for the rider. Individuals would now have access to 9<sup>th</sup> Avenue South stops, which provide access to 10<sup>th</sup> Avenue South locations as well. In addition, users of Route 1 would have a shorter travel time to Benefis East from downtown.

Route 7 would also be altered to provide a more direct route to the Great Falls Marketplace, which will allow it to be on a 30-minute headway. The portion of Route 7 that was operating in the northwest portion of the city is being covered by Route 5. This change eliminates some of the duplication that was present in the previous service, while allowing for better headways on Route 7. The rest of the routes remain unchanged.

To implement the preferred service plan, an additional vehicle will be required and higher operational costs with an estimated amount of \$250,000 may be realized.

### Long-Term (4-5 Years)

A more long-term goal for Great Falls Transit is to provide evening service for passengers. Although providing Sunday service was a comment made during various surveys associated with the TDP, it is not a reasonable or feasible service change within the five-year horizon due to funding limitations and more pressing needs. Current service ends at approximately 6:30 PM, which is not late enough for some users. The option that was examined in the TDP report extends fixed-route service 30 minutes (until 7:00 PM) and provides demand-responsive service thereafter. Providing evening service in this manner will allow Great Falls Transit to provide evening service in a cost-effective way, as the demand will likely not be substantial during the onset of service extension. The estimated cost to extend service until 7:00 PM, with demand-responsive service thereafter until 10:00 PM, is \$164,000. Four vehicles are likely needed to provide this service during the time span. As the service is demand-responsive, the number of vehicles required can be changed fairly easily to match the demand of the general public. This cost estimate includes extending the fixed-route service 30 minutes as well as providing three hours of general public demand-response service. While this option is listed in the implementation plan as beginning in four to five years, it is contingent on funding increases and seen as a long-term goal, compared to the route reconfigurations mentioned above under “short-term” goals.

To extend fixed-route service an additional 30 minutes, and provide demand-responsive service thereafter until 10 PM, four vehicles will need to be allocated to the extension, with an overall estimated operational cost of \$164,000.

### Service Schedules

The overall service concept of the system remains the same. Headways are generally at one hour during off-peak periods (with the exception of Route 7 that will be 30 minutes all day) and 30 minutes during peak periods. New schedules are identified for Route 5, Route 7, Route 1, and Route 8. Note that daily boardings for GFTD were analyzed in the TDP by various times of the day by route to identify “peak periods”. The total boardings were broken down by time period and route, and the percentage of total

boardings for various time periods and routes were calculated. The number of passengers by time period determines the boarding patterns during various times of the day, which helps determine peak load times, peak-hour vehicle allocations, and schedules. The following information was determined from the analysis for four time periods:

- Prior to 9 AM 18.4% of total boardings
- 9 AM – Noon 21.2% of total boardings
- Noon – 3 PM 28.0% of total boardings
- After 3 PM 32.5% of total boardings

Routes that are maintaining their current alignment also have a minor schedule change. The current schedules provide for a 15-minute break in the middle of the day to ensure that afternoon schedules better align with passenger needs and to give drivers a lunch break. These 15-minute breaks occur at the outbound terminus of each route. Because the service gap occurs on the outbound portion of the route, many riders must wait for 15 minutes at Noon's, the Twilite Center, or Great Falls Marketplace. By making a minor change to the schedule and allowing for that break to occur at the downtown transfer center, passengers will have access to the transfer facility and downtown amenities during this break.

Great Falls Transit should coordinate with the local schools to ensure that students are able to use transit for travel to and from school. This may require minor changes to the proposed schedules or adjustments to school start and stop times.

### **Fixed Stops**

Great Falls Transit currently uses a flag stop system for their fixed-route service. Buses will stop at any safe location along a route, preferably near an intersection. While this service provides a great deal of flexibility for the rider, it can be confusing for new or infrequent users to determine where a potential stop may be. The amount of current ridership being experienced by Great Falls Transit is conducive to creating fixed stops for service. Boarding and alighting data show users boarding in primary locations throughout the core service area. The creation of fixed stops will still allow users to board at convenient locations, if they are placed properly.

The addition of fixed stops will allow Great Falls Transit to have greater visibility to the passenger. Knowing that standing at a designated location will result in a transit vehicle passing by provides reassurance to riders, especially those that may be unfamiliar with the system. This may also reduce some of the confusion that is associated with benches currently located throughout the city that are not affiliated with Great Falls Transit.

Bus stops should be placed at least every 1,000 feet, which equates to roughly every two blocks. Boarding and alighting data can be used to help determine the best potential locations for stops. All attempts should be made to place bus stop signs in the most accessible locations for passengers.

In addition to including fixed bus stops, shelters should be placed at the locations with the highest amount of activity. Great Falls Transit currently provides shelters at a few locations that denote transit stops. Placing shelters at popular boarding locations such as Benefis West, Benefis East, Westwood Shopping Center, and Walmart gives passengers better protection from the elements and once again provides Great Falls Transit with greater visibility.

The potential costs to realize fixed stops and shelters at high activity locations range from a potential year one cost of approximately \$50,000 (assumes adding five shelters in year one) to \$20,000 for years two through five (assumes two new shelters per year).

### **Development Review**

As Great Falls continues to grow at the fringe, newly developed areas should be evaluated for transit need. Great Falls Transit should have a presence in the development review process for the city. This will allow future projects to be considered by Great Falls Transit and for their transit need to be determined. Great Falls Transit would then have the ability to discuss the feasibility of providing transit to a development during the planning stages. Great Falls Transit would also have firsthand knowledge of planned developments so that service changes can be considered and evaluated well before the development is completed.