

15th Street North—38th Street

September 19, 2016











Prepared for: Montana Department of Transportation Helena, MT





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Comments Received During Public Comment Period (07/29/16-08/31/16) Comments Received Outside of Public Comment Period

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ADA

AADT

AFB

ARM

CAPS

CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
со	Carbon Monoxide
DEQ	Department of Environmental Quality
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FLAP	Federal Lands Access Program
FPPA	Farmland Protection Policy Act
FWP	Fish, Wildlife, and Parks
GIS	Geographic Information System
GO	General Obligation Bonds
HSIP	Highway Safety Improvement Program
HSSR	Highway State Special Revenue
LID	Low Impact Development
LOS	Level of Service
LRTP	Long Range Transportation Plan
LWCFA	Land and Water Conservation Fund Act
MACI	Montana Air and Congestion Initiative
MAP-21	Moving Ahead for Progress in the 21st Century Act
MCA	Montana Code Annotated
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MNHP	Montana Natural Heritage Program
mph	Miles per Hour
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
NEPA	National Environmental Policy Act

Abbreviations/Acronyms

Americans with Disabilities Act

Average Annual Daily Traffic

Associated Rules of Montana Crucial Area Planning System

Air Force Base

NH	National Highway
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System
NRCS	Natural Resource Conservation Service (U.S. Department of Agriculture)
OPI	Overall Performance Index
PAIP	Public and Agency Involvement Plan
РМ	Particulate Matter
PvMS	Pavement Management System
RP	Reference Point
Section 4(f)	Section 4(f) of the 1966 Department of Transportation Act
Section 6(f)	Section 6(f) of the 1964 National Land and Water Conservation Fund Act
SID	Special Improvement District
STIP	Surface Transportation Improvement Program
STBG	Surface Transportation Block Grant
STPU	Surface Transportation Program Urban
ТА	Transportation Alternatives
TIF	Tax Increment Financing
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
vpd	Vehicles per Day

Executive Summary

The Montana Department of Transportation (MDT) initiated the *River Drive Corridor Study* in partnership with the Federal Highway Administration (FHWA) and in coordination with the Great Falls Metropolitan Planning Organization (MPO). The purpose of the study is to develop a comprehensive, long-range plan for managing the corridor and determining what improvements could be made to improve the corridor based on identified needs, public and agency input, and financial constraints. The study corridor includes River Drive North between the intersections of 15th Street North and 38th Street North.

The study examined geometric characteristics, crash history, land uses, physical constraints, environmental resources, and existing and projected operational characteristics within the study area. A package of feasible recommendations was developed to address the transportation needs of the corridor over the next 20 years. These recommendations will help the study partners target the most critical needs and guide the allocation of resources.

The study is a corridor planning document and not a design or construction project. MDT, the Great Falls MPO, and FHWA used a collaborative process to develop the study, as well as conducting focused outreach efforts to the public, stakeholders, and resource agencies. Known and publically available resource information was also evaluated. Activities completed for development of the study include the following:

- Research and analysis of existing roadway conditions;
- Research and synthesis of known environmental resources and applicable regulations in the study area;
- Identification and documentation of projected conditions;
- Identification of corridor issues and areas of concern;
- Consultation and coordination with local officials, stakeholders, resource agencies, and the public;
- Identification of corridor needs and objectives;
- Development of corridor improvement options with consideration of costs, available funding, feasibility, public input, and known environmental resource constraints; and
- Documentation of potential funding mechanisms for improvement options.

ES.1. CORRIDOR AREAS OF CONCERN

Assessment of existing conditions within the study area and public and stakeholder input helped identify roadway issues and areas of concern. The issues identified include existing roadway elements, traffic operations, safety, and environmental considerations. The identified areas of concern are listed below.

TRANSPORTATION SYSTEM

- West of 25th Street North, businesses closely front the roadway which provides little room for ingress/egress and for parking.
- The River's Edge Trail is located on the north side of the roadway. The Caboose Trailhead is located just east of 19th Street North and provides parking and access to the River's Edge Trail. There is a trail spur that terminates at the intersection with 19th Street North. There are no crossing treatments at this location.
- There is an at-grade railroad crossing between Giant Springs Road and 38th Street North.

- The study corridor is a designated truck route and is part of the Northeast Bypass. The route currently experiences approximately 7.2 percent heavy vehicle traffic.
- The intersection with 15th Street North is projected to experience a Level of Service (LOS) of E during the AM and PM peak hours.
- The intersection with 25th Street North currently experiences a LOS of F during the PM peak hour. The intersection is projected to experience a LOS of F during the AM, noon, and PM peak hours.
- Two vertical curves do not meet current standards for rate of curvature.
- The grade between RP 3.8 and RP 4.0 exceeds current standards.
- Crash clusters were noted at the following locations:
 - o 15th Street North intersection
 - East of 15th Street North
 - Big Stack Mobile Home Court approach
 - o 12th Street North intersection
 - o Black Eagle Falls scenic turnout
 - o Giant Springs Road intersection
 - o Railroad crossing
 - o 38th Street North intersection
- A trend of rear-end crashes was noted along the study corridor.

ENVIRONMENTAL CONSIDERATIONS

- The roadway is constrained to the north by the Missouri River.
- The study area is located within the Great Falls Municipal Separate Storm Sewer System (MS4) area.
- There is a public water supply well located within the study area.
- Noxious and exotic plant species may be located within the study area.
- Two bald eagle nests are located within the general proximity of the study corridor.
- Three species of concern have the potential to occur and breed within the study area.
- The median income within the study area is likely below the statewide average.
- The minority population within the study area is likely higher than the statewide average.
- There are likely 4(f) and 6(f) resources within the study area.
- There are historic-age properties adjacent to the study corridor.
- There are sensitive noise receptors within the study area.
- Visual resources include multiple scenic turnouts, the Black Eagle Falls, the Veteran's Memorial Park, and the sandstone outcroppings along the cliffs.

ES.2. CORRIDOR NEEDS AND OBJECTIVES

The following needs and objectives were established based on the analysis of existing and projected conditions, local plans, and input from resource agencies, stakeholders, and the public. These needs and objectives were used to develop improvement options for the corridor.

NEED 1: IMPROVE THE SAFETY OF THE CORRIDOR

Objectives (To the Extent Practicable)

- Reduce the frequency and severity of crashes.
- Improve roadway elements to current design criteria.
- Reduce vehicle conflicts.

NEED 2: ACCOMMODATE EXISTING AND FUTURE DEMANDS

Objectives (To the Extent Practicable)

- Reduce corridor congestion.
- Improve operations to achieve LOS standards.
- Accommodate large vehicles and freight movements.
- Accommodate non-motorized use.

NEED 3: MINIMIZE ADVERSE IMPACTS TO THE ENVIRONMENTAL CHARACTERISTICS OF THE STUDY AREA

Objectives (To the Extent Practicable)

- Minimize adverse impacts to the Missouri River and surrounding wetlands.
- Avoid or minimize adverse impacts to historic, cultural, archaeological, and recreational resources.
- Preserve the scenic character of the corridor.

OTHER CONSIDERATIONS

- Local and regional planning efforts
- Funding availability
- Construction feasibility and physical constraints
- Impacts to existing residents and businesses in the area

ES.3. RECOMMENDED IMPROVEMENT OPTIONS

Improvement options were identified to address corridor issues and areas of concern and to satisfy the needs and objectives defined for the corridor. The recommended improvement options are intended to offer a range of potential mitigation strategies for corridor issues and areas of concern. Small-scale improvement options identified may be as simple as modifying signing and striping. Larger, more complex, reconstruction improvements were also envisioned. Strategies to mitigate potential impacts would be more fully explored during project development activities.

Planning-level cost estimates were developed for each improvement option. The costs include estimates for right-of-way, preliminary engineering, construction engineering, construction, and indirect costs. In addition, an inflationary factor of three percent per year was applied to the planning level costs to account for estimated year of expenditure. Cost ranges are provided in some cases, indicating unknown factors at the particular planning level stage. **Appendix 5** contains planning level cost estimates, including all assumptions. **Table E.1** contains a summary of the potential improvements, along with planning level cost estimates, potential funding sources, and agency responsibility.

Im	provement Option	Description	Implementation Timeframe	Cost Estimate	Potential Funding Source
SP	OT IMPROVEMENT OP	TIONS			
1.	15 th Street North Intersection	Extend the westbound right-turn lane to accommodate vehicle queues.	Mid-term	\$180,000	NH
2.	19 th Street North Intersection	Evaluate and install enhanced non-motorized crossing treatment(s)	Short-term	\$2,000 (advance signing) \$40,000 (rectangular rapid flashing beacons)	NH TA
3.	Big Stack Mobile Home Court Approach	Reconstruct or relocate the existing approach to River Drive North.	Mid-term	\$900,000 (existing location) \$500,000 (new connection to 19 th Street North)	NH HSIP Local Private
4.	Business District Access	Reconstruct roadway to provide for a center left-turn lane, bike lanes, and sidewalk on the south side.	Mid-term	\$1,500,000	NH Local Private
5.	25 th Street North Intersection	Install additional traffic control such as a traffic signal or roundabout in coordination with corridor improvement options.	Mid-term	\$2,600,000 (Signal) \$4,000,000 (Roundabout)	NH STPU HSIP CMAQ
6.	Eagle Falls Golf Club Access	Construct a new access along River Drive North near Eagle Falls Golf Club.	Mid-term	\$60,000 (without westbound left-turn lane) \$320,000 (with westbound left-turn lane)	Local Private
7.	Railroad Crossing	Perform a diagnostics review of the railroad crossing.	Short-term	\$30,000	NH
8.	River Drive North Reconstruction	Reconstruct to include one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations.	Mid- to Long-term	\$6,000,000 to \$8,000,000 (Segment 1) \$8,500,000 to \$11,400,000 (Segment 2)	NH HSIP CMAQ
со	MBINED OPTIONS				
1.	Segment 1 – 15 TH Street North to 25 th Street North	Include recommendations from options 1, 2, 3, 4, 5, and 8.	Mid- to Long-term	\$9,400,000 to \$14,500,000	NH HSIP STPU CMAQ Local Private
2.	Segment 2 – 25 th Street North to 38 th Street North	Include recommendations from options 6 and 8.	Mid- to Long-term	\$8,600,000 to \$11,800,000	NH HSIP CMAQ Local Private

Table E.1: Recommended Improvement Options

ES.4. CONCLUSION

The ability to develop and implement any of the recommended improvement options ultimately depends on availability of funding, right-of-way needs, and other project priorities. At this time, there is no funding identified to complete any of the recommended improvement options contained in this study. To continue with the development of a project (or projects) the following steps are needed:

- Identify and secure a funding source(s).
- Include project in the Great Falls MPO Transportation Improvement Program (TIP).
- For MDT-led projects, follow MDT guidelines for project nomination and development, including a public involvement process and environmental documentation.
- For projects that are developed by others and may impact MDT routes, coordinate with MDT via the System Impact Action Process.

Should this corridor planning study lead to a project or projects, compliance with National Environmental Policy Act (NEPA) (if federal funding is used) and Montana Environmental Policy Act (MEPA) (if a state action) will be required. The purpose and need statement for any future project should be consistent with the needs and objectives contained in this study. Further, this corridor planning study will be used as the basis for determining the impacts and subsequent mitigation for the improvement options in future NEPA/MEPA documentation. Any project developed will have to comply with Code of Federal Regulations (CFR) Title 23 Part 771 and Associated Rules of Montana (ARM) 18, sub-chapter 2, which set forth the requirements for documenting environmental impacts on highway projects.

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Chapter 1

Introduction

The Montana Department of Transportation (MDT), in partnership with the Federal Highway Administration (FHWA) and in coordination with the Great Falls Metropolitan Planning Organization (MPO), initiated the *River Drive Corridor Study* to evaluate the River Drive North corridor in Great Falls, Montana. The purpose of the study is to determine potential improvement options to address safety and operational concerns within the study corridor based on needs and objectives identified by the public, the study partners, and resource agencies. The study area includes River Drive North between the intersections with 15th Street North (Reference Post [RP] 3.4) and 38th Street North (RP 5.4). **Figure 1.1** provides a map of the study area and corridor.

1.1. PROCESS

The *River Drive Corridor Study* is a pre-National Environmental Policy Act (NEPA) and Montana Environmental Policy Act (MEPA) study that allows for early planning-level coordination with the public, stakeholders, environmental resource agencies, and other interested parties. The NEPA/MEPA environmental review process is an approach to balance transportation decision-making that takes into account the need for safe and efficient transportation and the impacts on the human and natural environment.

The study does not replace the NEPA/MEPA process. The results of the study may be used to help determine the level and scope of environmental review required should a project be forwarded into a subsequent NEPA/MEPA process. The study will assist in facilitating a smooth and efficient transition from transportation planning to future project development/environmental review, if a project is moved forward. This study identifies both known technical issues and environmental conditions within the corridor, and it identifies reasonable and feasible improvements to increase safety and efficiency for the traveling public. Additionally, it defines potential impacts on the surrounding environment resulting from various improvement options. The pre-NEPA/MEPA process discloses potential environmental impacts and technical constraints, identifies potential mitigation measures that can be implemented, and documents the information for the public and decision-makers before decisions are made and carried forward. This study is a planning-level study to determine various improvement options within the study area. It is not a design or construction project.



Figure 1.1: Study Area

Chapter 2

Public and Stakeholder Outreach

An important aspect of the planning study process is to provide opportunities for ongoing and meaningful public involvement. Education and public outreach are essential parts of achieving this goal. A *Public and Agency Involvement Plan* (PAIP) was developed to identify public involvement activities needed to gain insights on and to seek consensus about existing and future transportation needs. The purpose of the *PAIP* is to ensure a proactive process that provided opportunities for the public to be involved in all phases of the planning study process. Specific public outreach measures are noted in this chapter. Meeting content, such as press releases, advertisements, agendas, presentations, minutes, etc., are provided for all of the described activities in **Appendix 2**.

2.1. PUBLIC INVOLVEMENT

Two public informational meetings were scheduled over the course of the study process. Press releases were distributed to area media outlets, and meeting announcements were advertised in the local newspaper (*Great Falls Tribune*) twice before each public meeting (at 1-week and 3-week intervals). The ads announced the meeting location, time and date, purpose of the meeting, and the locations where documents could be reviewed.

2.1.1. INFORMATIONAL MEETING ONE

The first informational meeting was held on January 21, 2016, in the Gibson Room at the Great Falls Civic Center. Fifteen people signed the attendance sheet at the meeting. Approximately eight others were present, but did not sign in, bringing the estimated total attendance to 23 individuals.

The purpose of the meeting was to describe the scope and purpose of the corridor planning study, present the findings of the existing conditions analysis, and solicit input on the existing conditions and concerns that might be relevant to the corridor planning effort. The meeting began with a presentation that included the study process, purpose, and existing conditions. The presentation was followed by a question-and-answer period. The following comments were made during the meeting:

- Pedestrian and bicycle uses are common on the corridor.
- Non-motorized accommodations needed at the intersection with 25th Street North
- A second access to the golf course is needed.
- Rail traffic has increased recently and is expected to increase more with the development of the AgriTech Park.
- The steep grade west of 25th Street North is difficult for trucks especially when the roadway is icy.
- It is difficult to turn left out of the businesses due to a lack of available gaps in the traffic stream.
- The street lighting along the corridor was recently removed which has decreased safety.
- There seems to be a recent increase in deer population, particularly near the golf course.
- There is concern about erosion along the north side for the roadway.
- Consideration should be given to using the abandoned railroad track for a one-way couplet.

2.1.2. INFORMATIONAL MEETING TWO

The second informational meeting was held on August 3rd, 2016 at the Lewis and Clark Interpretive Center. The purpose of this meeting was to present the draft *River Drive Corridor Study Report* and to discuss the recommended improvement options. Fifteen people signed the attendance sheet at the meeting, with approximately five additional people present who did not sign in.

Comments were received at the informational meeting and subsequent to the meeting through email and written comments. The following summarizes the public comments received:

- Consider the long-term vision of the corridor when implementing short-term improvements.
- Need a formal overlook with designated parking and defined access points.
- The intersection with Giant Springs Road has operational issues and is tough to see.
- Rail traffic seems to be increasing.
- East/west left-turn phasing at the intersection with 15th Street North should be considered.
- A roundabout at the intersection with 25th Street North is a good idea if it is designed to accommodate large trucks.
- Consider how construction would affect adjacent businesses.
- A pedestrian refuge island should be considered at the intersection with 19th Street North.
- There are some drainage issues that should be addressed near the business district.

2.1.3. OTHER PUBLIC INVOLVEMENT EFFORTS

A website (<u>www.mdt.mt.gov/pubinvolve/riverdrive</u>) was developed to provide up-to-date information regarding the study, as well as an opportunity to provide comments. Draft documents were posted for public review and comment during the study process. Informational announcements were posted on the website to encourage public participation in the study.

Two newsletters were distributed that described the work in progress, results achieved, preliminary improvement options, and other topics. These newsletters were made available at the informational meetings, and they were posted to the study website.

2.2. RESOURCE AGENCY WORKSHOP

A resource agency workshop was scheduled to be held on February 3rd, 2016. The purpose of the workshop was to provide an overview of the study and process and to confirm content and accuracy of the *Environmental Scan* document (**Appendix 3**). Each agency invited to participate in the workshop was sent a draft *Environmental Scan* for review. The following agencies were invited to participate:

- City of Great Falls Floodplain Administrator
- Montana Department of Environmental Quality
- Montana Fish, Wildlife and Parks
- Montana State Historic Preservation Office
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

No agencies attended the workshop. Follow-up contact was made with each resource agency to solicit comments on the draft *Environmental Scan*. The draft report was also sent to the resource agencies during prior to the public and agency review period. No comments were made by the agencies.

2.3. ADVISORY COMMITTEE

A study planning team was established with representatives from the Great Falls MPO, MDT, and FHWA. The team met regularly (approximately monthly) during the 12-month study to discuss study progress, analysis methodologies and results, draft technical memorandums and reports, and other issues and concerns. The planning team served in an advisory role and reviewed study documentation and deliverables before publication.

2.4. PUBLIC AND AGENCY REVIEW

The draft *Corridor Study* report was made available for public and agency review. The public and agency comment period for the draft report was extended from July 29th, 2016 to August 31st, 2016. Eleven written comments were received during the comment period. Comments and responses are presented in **Appendix 1**.

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Chapter 3

Existing and Projected Conditions

This chapter presents the existing and projected roadway conditions and social, economic, and environmental factors that influence the River Drive North corridor. These conditions were used in the planning analysis to identify known issues and areas of concern. The analysis is based on existing and historic traffic data, field measurements and observations, roadway as-built plans, aerial imagery, Geographic Information System (GIS), and publically available environmental information and demographics. If an improvement option is forwarded from this study to project development, this general information may be used to support future, detailed, project-level analyses.

3.1. PLANNING WITHIN THE CORRIDOR

A number of documents help guide planning activities for lands within the study area. Land use and transportation planning is primarily the responsibility of the Great Falls MPO. The planning documents listed below were reviewed to provide context for the study.

- Great Falls Area Long Range Transportation Plan (2014)
- Cascade County Growth Policy Update (2014)
- City of Great Falls Growth Policy Update (2013)
- Great Falls Transit Development Plan (2010)
- River Drive North Feasibility Study (2009)
- Great Falls South Arterial Alignment Study (2009)
- Great Falls Arterial Feasibility Study (2004)
- Missouri River Urban Corridor Plan (2004)

The *Existing and Projected Conditions Report* contains more information from these planning documents and considerations that may be important to the development of improvement options for the study area (see **Appendix 4**). Additionally, federal regulations would have to be followed should changes occur to the National Highway System.

3.2. TRANSPORTATION SYSTEM

River Drive North serves as a key route in the Great Falls transportation system and supports both local access and regional travel demand. Within the study area, the roadway is classified as a principal arterial roadway on the Non-interstate National Highway System. The corridor is a designated truck route and provides access to several businesses, industrial areas, residential neighborhoods, community resources, and recreation areas. The corridor is part of the US Highway 87 bypass which connects 10th Avenue South to 15th Street North.

3.2.1. PHYSICAL FEATURES AND CHARACTERISTICS

River Drive North was constructed or improved at various times, beginning in 1945. The study corridor consists of two travel lanes, one in each direction, and narrow shoulders. The north side of the roadway is generally constrained by the Missouri River and River's Edge Trail. West of 25th Street North, there are commercial, light industrial, residential, and recreational developments on the south side of the roadway.

The Veteran's Memorial Park and Eagle Falls Golf Club are located on the south side of the roadway to the east of 25th Street North. The posted speed limit of River Drive North is 35 mph between 15th Street North and the scenic turnouts. The speed limit increases to 45 mph just east of the easternmost scenic turnout near RP 4.7.

This section discusses the physical features and characteristics of the study corridor. Information was gathered using publically available sources, field observations, GIS data, and MDT as-built drawings.

3.2.1.1. Roadway Surfacing

MDT annually measures pavement condition in the corridor. The collected data are analyzed within MDT's Pavement Management System (PvMS). To evaluate the level of distress in the pavement, indices are calculated to identify the degree of cracking, rutting, and road smoothness (ride). MDT uses the PvMS to identify timing and types of treatments needed to extend pavement life. The pavement condition indices reported are based on a 0-to-100 scale, where 100 represents "in new" condition.

The most important performance measure is the overall performance index (OPI), as this index is a combination of all performance indices. An OPI of 80 to 100 is considered "good," 60 to 79.9 is "fair," and 0 to 59.9 is "poor." The various pavement condition performance measures generally indicate fair performance with an OPI of 67.6.

3.2.1.2. Access and Right-of-way

The typical width of right-of-way for the study corridor is approximately 100 feet, measured 50 feet on each side of centerline. There are some spot locations with greater than 100 feet of available right-of-way. There are six public roads which intersect River Drive North within the study area. These public roads range from local public roads, to principal arterials and have varying forms of intersection traffic control.

Access along the study corridor is varied in type and density. There are multiple public and private approaches and drives. There are seven defined business approaches on the south side of the roadway between 15th Street North and 19th Street North. The approaches provide access to adjacent businesses and parking areas. Just east of 19th Street North, there is access for the Caboose Trailhead parking area on the north side of River Drive North.

The Big Stack Mobile Home Court is accessed on the south side of River Drive North between 15th Street North and 25th Street North near the top of the grade. Also on the south side of River Drive North, and just west of 25th Street North, there are a variety of businesses with no defined access points. Existing right-of-way for River Drive North generally extends close to the building fronts which provides little room for ingress/egress. Vehicles commonly park at the building fronts and within the roadway right-of-way. The current roadway right-of-way in front of the buildings is held in easement by the City of Great Falls. MDT has jurisdiction over the route and therefore has permitting authority. There are no parking leases in place between land owners and MDT which would allow parking within the right-of-way.

East of 25th Street North there is limited access. There are three scenic turnouts on the north side of the roadway. There are no access points on the south side of the roadway due to the Eagle Falls Golf Club and Veteran's Memorial Park. There is one private business approach on the north side of the roadway, just west of 38th Street North.

The north gate for Malmstrom Air Force Base (AFB) is located approximately 1.5 miles east of 38th Street North at the intersection with 10th Avenue North. Traffic along River Drive North is influenced by commuter and other traffic associated with Malmstrom AFB.

3.2.1.3. Drainage Conditions

There is limited information available for the location and type of drainage structures along the corridor. The existing as-built drawings did not include drainage information. There is currently curb and gutter on the west end of the corridor between 15th Street North and the Parks and Recreation approach (approximately 750 feet). The remaining portion of the corridor is uncurbed. A storm sewer pipe located under the roadway on the east side of the Caboose Trailhead was noted during the field review.

Problematic erosion is known to exist along the shoulder on the south side of River Drive North between 25th Street North and 19th Street North. The Missouri River floodplain is located on the north side of the corridor. The study area is located within the Great Falls Municipal Separate Storm Sewer System (MS4) area which may require additional drainage considerations (see **Section 3.3.1.3**). Further investigation and analysis of drainage conditions may be necessary during project development.

3.2.1.4. Operations

The study corridor is considered a Level I winter maintenance level according to the MDT *Maintenance Operations and Procedures Manual.*¹ A Level I roadway receives the highest level of maintenance and attention during inclement weather events. Level I routes are eligible to receive up to 24-hour-per-day coverage during storms. The primary objective is to keep at least one travel lane in each direction open to traffic and to provide intermittently bare pavement as soon as possible.

3.2.1.5. Utilities

Electric power and natural gas utilities are provided by Northwestern Energy. CenturyLink provides telecommunication services to the study area. Overhead power is located along the south side of the roadway beginning just east of 25th Street North. The overhead power crosses the roadway at two locations, both near the Veteran's Memorial Park. Street lights are present between 15th Street North and the Big Stack Mobile Home Court. Street lighting is also in place at the intersection with 25th Street North, at the scenic turnout, and at the intersection with 38th Street North.

3.2.1.6. Other Transportation Modes

NON-MOTORIZED

The River's Edge Trail is located within the study area. The trail is a shared use path for bicyclists and pedestrians and is part of the nationally published Lewis and Clark Bicycle Trail. The trail is located north of the study corridor between 15th Street North and Giant Springs Road. At Giant Spring Road, the trail continues northeast along the Missouri River.

An additional shared use path connects to the River's Edge Trail on the east side of Giant Springs Road. This trail is located on the north side of River Drive North and connects to 38th Street North. The trail travels south along 38th Street North towards the recreational baseball fields. There are bike lanes on both sides of the roadway east of 38th Street North. There are no dedicated non-motorized accommodations along the south side of the study corridor, nor are there any sidewalks along the corridor.

The Caboose Trailhead is located on the north side of River Drive North, just east of 19th Street. The trailhead provides parking and access to the River's Edge Trail. There is a trail spur that terminates at 19th Street North. There are currently no crossing treatments at this location.

TRANSIT

Great Falls Transit does not currently operate a route along the River Drive North corridor. The nearest route to the study corridor is the Yellow Route (Northeast Route), which passes through the intersection of

15th Street North and River Drive North. The closest stop is located at the intersection of 15th Street North and 8th Avenue North.

RAIL

BNSF Railway operates rail line within the study area. There is an at-grade crossing between Giant Springs Road and 38th Street North (RP 5.25). The line is part of the Fort Benton branch line which runs from Fort Benton to Great Falls. The line serves the industrial and commercial areas south of River Drive North. There are, on average, two trains per day at this crossing with a maximum train speed of 10 miles per hour (mph). Traffic control at the crossing currently consists of a post mounted flashing light signal with a crossbuck sign.

FREIGHT

The study corridor is a designated truck route and is part of the Northeast Bypass. The Northeast Bypass provides an alternate route to US Highway 87 between the intersection with 57th Street North in the southeast side of Great Falls, and the intersection with 15th Street North in the northwest. The corridor accommodates local and regional freight traffic. Within and adjacent to the study area are multiple industrial and commercial freight generators. A new industrial park is planned to be developed in the area of River Drive North and 18th Avenue North. Developments in the area are expected to serve firms reliant on goods movement by trucks and rail. The study corridor currently experiences approximately 7.2 percent heavy vehicle traffic (see **Section 3.2.2.1**).

AIR SERVICE

The Great Falls International Airport serves the greater community. The airport is located approximately seven miles from the study corridor at the Gore Hill Interchange off Interstate 15. Due to the location of the airport, the study corridor is likely not directly influenced by the airport or associated activities.

3.2.2. TRAFFIC OPERATIONS

An evaluation of traffic operations for the study corridor was completed using available data provided by MDT, as well as field-collected data. Turning-movement counts were conducted at the three major intersections within the study area over a 24-hour period. Mainline traffic volume data for existing and historic conditions were available at multiple locations. Visual observations were made for driver behavior, vehicle queuing and general traffic characteristics. The following sections provide details about the existing and projected traffic characteristics for the study corridor. **Figure 3.1** shows summarizes the existing and projected traffic conditions for the study corridor. Detailed data is included in the **Appendix 4**.

3.2.2.1. Traffic Volumes

Traffic volumes along the roadways within the study area are collected annually as part of MDT's traffic data collection program. A total of 10 data collection sites exist near the study corridor. Of these 10 sites, three are located directly along the study corridor. The remaining seven sites are located adjacent to the study corridor.

The data collected at these sites is used to determine an average annual daily traffic (AADT) volume. AADT represents the average number of vehicles that pass a given point on a typical day of the year. Existing AADT volumes on the study corridor ranged from a low of 10,770 vehicle per day (vpd) east of Giant Springs Road, to a high of 14,400 vpd west of 25th Street North.

PROJECTED CONDITIONS

Projected transportation conditions were analyzed to estimate how traffic volumes and characteristics may change compared to existing conditions. The analysis was based on known existing conditions projected out 20 years, to the year 2035. Future projections were made using estimated growth for the study area.

Future growth was estimated to occur at a rate of 1.50 percent per year. This growth rate was applied to the existing traffic volume data discussed previously. The existing AADT and resulting projected AADT values for the year 2035 are shown in **Table 3.1**.

Location		2014 AADT	2035 AADT(i)				
ALONG STUDY CORRIDOR							
River Drive North	West of 25th Street North	14,400	19,690				
River Drive North	West of Giant Springs Road	12,583	17,200				
River Drive North East of Giant Springs Road		10,770	14,720				
ADJACENT TO STUDY CORRIDOR							
River Drive North	East of 10 th Street North	12,336	16,860				
River Drive North	East of 38th Street. North	8,941	12,220				
25 th Street North	South of River Drive North	5,339	7,300				
38th Street North	South of River Drive North	5,603	7,660				
Giant Springs Road	North of River Drive North	1,170	1,600				
15 th Street North	South of River Drive North	11,470	15,680				
15 th Street North	North of River Drive North	15,650	21,390				

Table 3.1: Existing and Projected AADT

⁽ⁱ⁾ Projected AADT based on an assumed growth rate of 1.50 percent per year.

HEAVY VEHICLE TRAFFIC

An analysis of heavy vehicle traffic along the study corridor was made using the 24-hour turning movement count data. The turning movement count data includes classifications for vehicle types. For this analysis, vehicles classified as single-unit trucks and articulated trucks were considered heavy vehicles. Based on the turning movement counts, heavy vehicles account for approximately 7.2 percent of all vehicles along the study corridor.

3.2.2.2. Major Intersections

Traffic volume data was supplied by MDT for the intersections of River Drive North with 15th Street North, 25th Street North, and 38th Street North. Turning movement counts were performed on August 17th, 2015 at 15th Street North and on September 21st, 2015 at 25th Street North and at 38th Street North. Each turning movement count was adjusted based on seasonal traffic adjustment factors published by MDT².

The following sections discuss the traffic operations at the three major intersections. The operational conditions of the intersections are characterized by the Level of Service (LOS). The LOS is based on an alphabetic scale which represents the full range of operating conditions. This scale is defined based on the vehicle delay experienced at the intersection. The scale ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion. LOS of "C" or above is considered acceptable based on MDT guidelines for this type of facility. More detailed information on the intersection operational analysis is provided in **Appendix 4**.

15TH STREET NORTH

The intersection of River Drive North and 15th Street North is currently signalized. The eastbound and westbound approaches consist of dedicated right-turn, through, and left-turn lanes. The northbound approach consists of a dedicated left-turn bay, one dedicated through lane, and a shared through/right-turn lane. The southbound approach consists of a shared through/right-turn and a shared through/left-turn lane.

Field observations suggest that large trucks have difficulty making turns at this intersection, particularly right-turns from the westbound approach. The southbound approach is constrained by the limited width of the bridge directly to the north of the intersection. This results in sharp corners that force large trucks to turn into the outside lane.

The signal is operated using split phasing for the northbound and southbound directions (i.e. southbound and northbound movements receive green time separately from each other) due to the current lane configurations. A left-turn phase study was completed by MDT on January 13, 2011. The purpose of the study was to explore the implementation of an east/west protected-permissive left-turn phase. The study determined that modifying the traffic signal to include left-turn phasing was not warranted at the time.

Under existing traffic conditions, this intersection operates at a LOS of D, C and C during the AM, noon, and PM peak hours, respectively. Under projected conditions, the intersection is shown to operate at a LOS of E, C and E during the respective peak hours.

25TH STREET NORTH

The intersection of River Drive North and 25th Street North is a three-legged intersection. The northbound approach consists of a right-turn slip lane with yield control and a dedicated left-turn lane with stop control. The eastbound approach consists of a free-flowing through lane and a yield controlled right-turn slip lane. The westbound approach consists of a dedicated left-turn bay and a free flowing through lane.

An intersection signal warrant analysis was completed on January 13, 2015. The purpose of the analysis was to evaluate installation of a traffic signal or roundabout to accommodate existing traffic. The analysis noted that a higher form of traffic control could be necessary to accommodate northbound left-turning vehicles. Existing issues, such as steep roadway grades, construction constraints, and the desire to maintain the bypass characteristics of River Drive North, were noted as challenges which may inhibit installation of a traffic signal or roundabout. The analysis recommended that the entire River Drive North corridor be evaluated for a long-term solution.

Under existing traffic conditions, the intersection operates at a LOS of D, C and F during the AM, noon, and PM peak hours, respectively. Under projected traffic conditions, the intersection operates at a LOS of F during all peak hours.

38[™] STREET NORTH

The intersection of River Drive North and 38th Street North is a four-legged signalized intersection. The northbound, eastbound, and westbound approaches each consist of a dedicated left-turn bay and a shared through/right-turn lane. The southbound leg of the intersection is an access to a local business.

The intersection is shown to operate at a LOS of A during the existing peak hours. Under projected conditions, the intersection operates at a LOS of B, A and B during the AM, noon, and PM peak hours, respectively.

RIVERDRIVE

CORRIDOR STUDY



Figure 3.1: Existing and Projected Traffic Conditions

3.2.3. GEOMETRIC CONDITIONS

Existing roadway geometrics were evaluated and compared to current MDT standards. The analysis was conducted based on a review of public information, MDT as-built drawings, GIS data, and field observations. As-built drawings containing horizontal geometrics were reviewed for the study corridor. Vertical profiles were not available as part of the as-built drawings. Planning-level mapping was completed for the *River Drive North Feasibility Study*³ and was used to approximate vertical profile information.

3.2.3.1. Design Criteria

The MDT *Road Design Manual*⁴ specifies general design principles and controls that determine the overall operational characteristics of the roadway and enhance its aesthetic appearance. The geometric design criteria for the study corridor are based on the current MDT design criteria for an "Urban Principal Arterial (NHS Non-Interstate)" roadway.

The design speed for an urban principal arterial roadway ranges between 40 and 45 mph where curbing is present, and 40 to 50 mph for a roadway without curbs. Based on the definitions provided in the *Road Design Manual*, most of the study area appears to be level terrain with some areas of rolling terrain. A determination of design speed and terrain type for the corridor was not made as part of this evaluation. Rather, those areas that do not meet standards for the minimum design speed (40 mph) and criteria for level terrain were considered areas of concern. Further evaluation of design speed and terrain type may be necessary during the project development process.

The *Road Design Manual* specifies controlling design criteria. For roadway elements, travel lane width and shoulder width are controlling design criteria. A minimum travel lane width of 12 feet is recommended. Minimum shoulder width is determined by the MDT Road Width Committee.

3.2.3.2. Horizontal Alignment

Elements comprising horizontal alignment include curvature, superelevation, and sight distance. These horizontal alignment elements influence traffic operation and safety and are directly related to the design speed of the corridor. Critical design criteria for horizontal curves are defined in terms of curve radius, stopping sight distance, and superelevation rate. According to as-built drawings, eight horizontal curves exist along the study corridor. All eight horizontal curves appear to meet current 40 mph design standards based on curve radius and sight distance. Superelevation rates were unavailable, so it is unknown at this time whether the curves meet standards for maximum superelevation rates.

3.2.3.3. Vertical Alignment

Vertical alignment is a measure of elevation change of a roadway. The length and steepness of grades directly affect the operational characteristics of the roadway. The *Road Design Manual* lists critical design criteria for vertical alignment elements such as grade, rate of vertical curvature (K-value), and stopping sight distance. As-built vertical profile information was unavailable for the study corridor. Instead, planning level mapping completed for the *River Drive North Feasibility Study* was used to approximate vertical profile information. According to the planning-level mapping, there are 14 vertical curves along the study corridor. Of the 14 vertical curves, two locations do not appear to meet standards based on rate of curvature (K-value). In addition, the grade between approximately RP 3.87 and RP 4.01 exceeds standards for level terrain.

3.2.3.4. Roadside Clear Zone

The roadside clear zone, starting at the edge of the traveled way, is the total roadside border area available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a recovery area. The desired clear zone width varies depending on traffic volumes, speeds and roadside geometry. Clear zones are evaluated individually based on the roadside cross-section. In certain instances within the study area, it may be impractical to protect or remove certain obstacles within the clear zone. As improvement options develop, roadside clear zones should be designated, to a practical extent, to meet current MDT design standards.

3.2.4. SAFETY

Historic crash data was provided by the MDT Traffic and Safety Bureau for the study area for the five-year period from January 1st, 2010 to December 31st, 2014. The crashes were plotted based on GPS coordinates contained in the crash records. **Figure 3.2** shows the locations and clusters of reported crashes over the analysis period.

A total of 113 crashes were reported to have occurred within the study area during the crash analysis period. There were no reported fatal injury crashes, two incapacitating injury crashes, and six non-incapacitating injury crashes. An incapacitating injury is defined as an injury, other than a fatality, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before injury.

RIVERDRIVE





Figure 3.2: Crash Locations

3.2.4.1. Safety Trends, Contributing Factors, and Crash Clusters

Crash types can be grouped into two categories, multi- and single vehicle crashes. Multi-vehicle crashes are crashes that involve two or more vehicles, single vehicle crashes involve only one vehicle. Multi-vehicle crashes accounted for 79 percent of all crashes. Single vehicle crashes accounted for the remaining 21 percent. The most common crash type was rear-end crashes, accounting for 48 percent of all reported crashes. The most common single vehicle crash was fixed object crashes, accounting for 10 percent of total crashes. Crash types are shown in **Figure 3.3**.

It was found that 65 percent of crashes occurred under clear weather conditions, 65 percent occurred on dry roads, and 80 percent occurred during daylight conditions.





A total of 216 drivers were involved in crashes

within the study area during the crash analysis time period. Of all the drivers involved in crashes, males accounted for 65 percent of those involved in crashes, females accounted for 32 percent of drivers, while the gender of the remaining three percent was not listed. With respect to the driver's age, the 21 to 25 years of age group accounted for 18 percent of drivers. The 16 to 20 years of age group had the second most drivers with 10 percent of drivers involved in crashes.

The most common day for crashes was Monday, accounting for 22 percent of total crashes. Crashes occurring on Saturday and Sunday accounted for 12 and 4 percent of crashes, respectively. Data regarding the month of the year in which crashes occurred showed that October had the most crashes, accounting for 14 percent of total crashes. April had the fewest crashes, accounting for 3 percent of all crashes. The winter months, November through February, accounted for a combined 34 percent of all crashes. With respect to the time-of-day in which crashes occurred, 12 percent of all crashes occurred between 4:00 and 5:00 PM.

3.3. ENVIRONMENTAL SETTING

This section provides a summary of the *Environmental Scan*⁵ developed by MDT. The primary objective of the *Environmental Scan* is to provide a planning-level overview of resources and to determine potential constraints and opportunities within the study area. As a planning-level scan, the information was obtained from various publicly available reports, websites, and other documentation, as well as a "windshield survey" conducted by MDT staff. This scan is not a detailed environmental investigation. Refer to **Appendix 3** for more detailed information.

3.3.1. PHYSICAL ENVIRONMENT

The following subsections present an overview of items related to the physical environment.

3.3.1.1. Soil Resources and Prime Farmland

Information obtained on soils is used to determine the presence of prime and unique farmland in the study area to demonstrate compliance with the Farmland Protection Policy Act (FPPA). Farmland includes prime

farmland, some prime if irrigated farmland, unique farmland, and farmland (other than prime or unique farmland) that is of statewide or local importance.

Soil surveys of the study area are available from the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). NRCS indicates that farmland of statewide importance is present within the study area. There is land designated as having statewide importance on the south side of the study area between approximately RP 3.4 to RP 4.25, as well as along the last quarter mile of the corridor. The majority of this land has already been developed and is no longer subject to the FPPA.

If a federally-funded improvement option forwarded from the study will require acquisition of lands from these areas, MDT will have to complete a CPA-106 Farmland Conversion Impact Rating Form for Linear Projects and coordinate with NRCS. NRCS will use information from that form to keep an inventory of the impacted prime and important farmlands within the state.

3.3.1.2. Geologic Resources

It is common in this area to encounter deposits of silt interbedded with very fine-grained sand and clay from glacial lake deposits. The majority of soils are silts, fine silty sands, and clays which can be moisture sensitive. The design of future projects forwarded from the study should consider including permanent erosion and sediment control measures to the extent practicable to facilitate stabilization and revegetation of disturbed areas.

Improvements brought forward from the study will be subject to a more detailed analysis of geotechnical risk factors. Part of this detailed analysis may involve taking advance borings to evaluate soil characteristics at exact project locations. This is standard procedure for most MDT road projects. The design of any improvements should consider specific requirements that come from the detailed geotechnical analysis.

3.3.1.3. Surface Waters

The Missouri River is the only surface water located within the study area. Although not within or immediately adjacent to the study area, an intermittent stream flows into the Missouri River on the opposite side of the river from the corridor study area. This intermittent stream has the potential to transport sediment or pollutants that could affect water quality of the Missouri River.

Effects on water bodies near the study area will have to be identified and coordinated with applicable agencies during any future project design. Permitting may be required for improvement options involving construction in or near the Missouri River. Coordination with federal, state, and local agencies would be necessary to determine the appropriate permits based on choice of improvement options forwarded from this study. Impacts should be avoided and minimized to the maximum extent practicable.

TOTAL MAXIMUM DAILY LOADS

The Montana Department of Environmental Quality (DEQ) lists the section of the Missouri River that is adjacent to the study area as having impairments. The Missouri River is classified as Category 5 water body which is defined as having one or more applicable beneficial uses are impaired or threatened, and a total maximum daily load (TMDL) is required to address the factors causing the impairment or threat, but has not been completed. DEQ is currently working on completing the TMDL for this watershed. Coordination with DEQ on TMDL status will occur at the development stage of potential improvements. For the Missouri River within the study area, major probable sources of impairment are industrial/commercial site stormwater discharge, and industrial point source discharges. The probable sources of impairments are not currently listed as being associated with road construction activities. If improvement options are advanced, it will be necessary to reevaluate the 303(d)/305(b) integrated report for changes to listed impairments along with possible changes to TMDLs on a project level at that future time.

STORMWATER

The study area is located within the Great Falls MS4 area. Under the current Small MS4 General Permit, new development or redevelopment projects greater than or equal to one acre in size must implement, when practicable, low impact development (LID) practices that infiltrate, evapo-transpire, or capture for reuse the runoff generated from the first half-inch of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation. MS4 issues, including potential applicability of LID requirements, will have to be further evaluated during any future project design. In addition, there may be a need to obtain coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity during project development.

WILD AND SCENIC RIVERS

Based on a review of the United States National Park Service website, the Missouri River does not carry the Wild and Scenic designation within the study area.

3.3.1.4. Groundwater

There are two private domestic wells and one public water supply well within the study area. Wells can be a costly item to mitigate if they are not avoided. Mitigation of a well usually involves drilling a new well for the owner in a new location that will not be impacted by the potential project. In addition, there is a 100-foot setback requirement for public water supply wells in which no source of pollutant can be located. Public water supply wells can also be deeper and require a higher volume of water to be discharged. This can translate into a more expensive well to replace, along with affecting larger number of users compared to a private well if impacted. Impacts on existing wells should be considered if a project is forwarded from this study.

3.3.1.5. Wetlands

Based on review of available information and on a windshield survey of the corridor, no known wetland areas are currently identified within the study area. The potential does exists for a wetland to occur within the riparian corridor of the Missouri River. Given the steepness of the terrain along the riverbanks, however, few wetlands are likely to exist in the study area. Future wetland investigation and potential delineation would be required if improvement options are forwarded from the study.

3.3.1.6. Floodplains and Floodways

Federal Emergency Management Agency-issued flood maps for Cascade County indicate that flood plain zones existing within or adjacent to the study area. Some areas of Zone A, Zone AE, and Zone X (0.2% chance flood) are adjacent to, or intersect, the study area on the north side of the corridor. However, the elevation difference between the Missouri River and the corridor places the road outside these areas. The majority of the study area is located within Zone X (determined to be outside the 500-year flood).

A flood plain permit is required if improvement options involve placement of fill within the regulatory flood plain. As Zone X (outside the 500-year flood) is the main flood zone within the study area, there is likely to be minimal impacts to flood zones. However, this should be reevaluated at the time of project development.

3.3.1.7. Irrigation

There is no irrigated agriculture land within the study area. The available Water Resources Survey maps indicate that there is only one water right close to the study area. As such, irrigation structures should not be a concern for this corridor study. A more in-depth review for irrigation structures should occur at the project development stage to identify if new possible impacts are present.

3.3.1.8. Air Quality

The study area is not located in a non-attainment area for any of the criteria pollutants. Additionally, there are currently no non-attainment areas nearby. As a result, special design considerations are likely not required in future project design to accommodate National Ambient Air Quality Standard non-attainment issues.

Depending on the scope of the project under consideration along this corridor, an evaluation of mobile source air toxics (MSATs) may be required. MSATs are compounds emitted from highway vehicles and off-road equipment that are known or suspected to cause cancer or other serious health and environmental effects.

3.3.1.9. Hazardous Substances

There were no oil and gas production wells, crude oil pipelines, open-cut mining sites, or toxic release inventory sites identified within the study area. At this time, none of the identified hazardous substances sites are expected to substantially impact improvements to the corridor. However, if a project were to overlap a hazardous substance site, a soil investigation would likely be needed. If contaminated soils are present, a special provision regarding handling contaminated soils is recommended to be included in project documentation. In addition, the contaminated soils could result in the need for remediation.

3.3.2. BIOLOGICAL ENVIRONMENT

The following information applies to natural resources within the study area and reflects a baseline natural resource condition. Depending on the level of detail available through the high-level baseline scan, some of the information is presented at the county-level, some at the study-area level, and some at the corridor-level.

3.3.2.1. Vegetation

According to the Montana Natural Heritage Program Landcover Report, the dominate landcover type in the study area is developed land consisting of open space (golf course, park), commercial/industrial, railroad, and roads. There are also small areas of grassland consisting of Great Plains mixed prairie. This landcover is a reflection of the study area being located in an urban setting.

If improvement options are forwarded from the study, practices outlined in MDT standard specifications should be followed to minimize adverse impacts to vegetation and facilitate establishment of final stabilization of disturbed areas. Removal of mature trees and shrubs should be limited to the extent practicable.

3.3.2.2. Noxious Weeds

The Invaders Database System lists 28 exotic plant species and 10 Montana noxious weed species in Cascade County, some of which may be present in the study area. Reseeding disturbed areas with desirable native plant species will help to reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation. If improvements are forwarded from the study, field surveys for noxious weeds should take place prior to any ground disturbance and coordination with Cascade County Weed Board should occur. Proposed projects should incorporate the practices outlined in MDT standard specifications to minimize adverse impacts.

3.3.2.3. General Wildlife Species

MAMMALS

Wildlife species inhabiting or traversing the study area are typical of those that occur in developed and disturbed areas of Montana. Since many species in this area are habituated to somewhat disturbed areas

and are tolerant of moderate levels of development, species present in this area are predominately, though not exclusively, generalists. Some of the generalist wildlife species present in the study area are white-tail and mule deer, coyote, red fox, porcupine, raccoon, striped skunk, muskrat, Richardson's ground squirrel, deer mouse, and meadow vole. There were three reported occurrences of carcasses collected within the study area. One mule deer and two white-tail deer carcasses were collected in the eastern half of the corridor near the golf course.

FISHERIES

The only waterbody in the study area is the Missouri River and it is listed as providing suitable habitat for an array of cold-water species. If impacts to the Missouri River will occur from future improvements, potential impacts to aquatic species will be need to be considered.

Birds

There are two bald eagle nests which occur within the general proximity of the corridor, with one of the halfmile buffer areas crossing into the study area. The study area is not typical golden eagle habitat, so presence of golden eagle nests is unlikely.

Any improvements forwarded from this study should consider potential constraints that may result from nesting/breeding periods of migratory birds and presence of unknown or future bald and golden eagles nests. Future projects that involve tree and shrub removal and/or structure replacement or rehabilitation must be conducted in compliance with Migratory Bird Treaty Act, which may entail a timing restriction between April 15 and August 15.

AMPHIBIANS AND REPTILES

The presence of amphibians and reptiles in the study area is likely limited by lack of suitable habitat and level of development. Common species may occur in low numbers along irrigation facilities, drainages, and within wetland areas. The Plains Spadefoot has a record of collection from 1992 the area near the railroad tracks south of River Drive North. Any improvements forwarded from the study should take into consideration and minimize impacts to amphibian and reptile habitat where practicable.

CRUCIAL AREAS PLANNING SYSTEM

The Montana Fish, Wildlife and Parks (FWP) Crucial Areas Planning System (CAPS) is a resource intended to provide non-regulatory information during early planning stages of projects, conservation opportunities, and environmental review. The finest data resolution within CAPS is at the square-mile section scale or water body. Use of these data layers at a more localized scale is not appropriate and may lead to inaccurate interpretations since the classification may or may not apply to the entire square-mile section.

CAPS provides general recommendations and recommendations specific to transportation projects for both terrestrial and aquatic species and habitat. These recommendations of the CAPS system can have a generic application to possible project locations moving forward from the study. Coordination with the FWP wildlife biologist should occur during project development.

3.3.2.4. Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) maintains the federal list of threatened and endangered species. Species on this list receive protection under the Endangered Species Act. An "endangered" species is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is likely to become endangered in the near future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list. According to the USFWS, four threatened, endangered, proposed, or candidate species are listed as occurring in Cascade County:

• Sprague's Pipit (Candidate)

- Whitebark Pine (Candidate)
- Red Knot (Threatened)
- Canada Lynx (Threatened, and Critical Habitat)

According to the Montana Natural Heritage Program (MNHP) - Natural Heritage Map Viewer database, there are no records of any threatened, endangered, proposed, or candidate species within the boundaries of the corridor study. Due to the lack of suitable habitat resulting from the level of development in the study area, density of roads, it is not anticipated that any of the listed species occurring in Cascade County would normally occur in the study area. It is anticipated that any project forwarded from this study would result in a "*no effect*" determination for listed species in Cascade County.

As the federal status of protected species changes over time, reevaluation of the listing status and a review for the potential occurrence of these species in the project area should take place before issuing a determination of effect relative to potential project impacts. If a project moves forward from this study, completion of an evaluation of potential effects on any of the species listed above has to occur during the project development process.

3.3.2.5. Species of Concern

A search of the MNHP species of special concern database, revealed three species of concern in Cascade County that have the potential to occur and breed in the study area based on presence of suitable habitat. These species include the following:

- Bald Eagle
- Plains Spadefoot
- Many-headed Sedge

A thorough field investigation for the presence and extent of these species should be conducted if improvement options are forwarded from this study. If present, special conditions that apply to the project design and/or during construction such as timing restrictions should be considered to avoid or minimize impacts to these species.

3.3.3. SOCIAL AND CULTURAL ENVIRONMENT

The following subsections present an overview of the social and cultural environment within the study area.

3.3.3.1. Population Demographics and Economic Conditions

Under NEPA/MEPA and associated implementing regulations, state and federal agencies are required to assess potential social and economic impacts resulting from proposed actions. FHWA guidelines recommend consideration of impacts to neighborhoods and community cohesion, social groups including minority populations, and local and/or regional economies, as well as growth and development that may be induced by transportation improvements. Demographic and economic information presented in this section is intended to assist in identifying human populations that might be affected by improvements within the study area.

Title VI of the US Civil Rights Act of 1964, as amended (USC 2000(d)) and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, require that no minority, or, by extension, low-income person shall be disproportionately adversely impacted by any project receiving federal funds. For transportation projects, this means that no particular minority or low-income person may be disproportionately isolated, displaced, or otherwise subjected to adverse effects. If a project is forwarded from the improvement option(s), environmental justice will need to be further evaluated during the project development process.

According to the US Census Bureau's estimate, Cascade County had a population of 82,384 people in 2013, and was the 5th most populous county in Montana. Great Falls, the 3rd largest city in the state, had a population of 59,351. Over the last 15 years, Cascade County has seen slight increases and decreases in population. The population is projected to grow over the next fifteen years, but at rate less than Montana as a whole.

Past trends in growth for the City of Great Falls indicate that this projected growth may be high. A large part of the City of Great Falls economy relies on Malmstrom AFB which does not have the potential for growth seen in other industries such as energy, tech, or tourism. These other industries have not shown tremendous growth in the City of Great Falls, which is reflected in the city's population having smaller growth than other major cities of Montana.

The population ethnicity in Cascade County is primarily White/Caucasian (89.1 percent). Hispanic or Latino individuals comprise just over three percent of the population. Great Falls has a slightly more diverse ethnic population compared to the Montana average. Malmstrom AFB (in Great Falls) and the two Native American Reservations (Blackfeet Reservation and Rocky Boy Reservation) located within 100 miles of Great Falls could be contributors to the higher than Montana average population diversity seen in Great Falls.

Cascade County and Great Falls residents have a slightly higher percentage of people under the age of 18 and people over the age of 65, with a smaller proportion in the 18 to 64 age range. The median age of 39.2 in Great Falls is still slightly younger than the state median of 39.9 years.

Cascade County's labor market has shown strong performance as evidenced by its 3.7 percent unemployment rate. The county is one of many in Montana showing strong labor market conditions and low unemployment, especially as compared to the rest of the United States. Educational Services, health care and social assistance industries account for 23.8 percent of employment in Cascade County, which is slightly above the Montana average of 22.8 percent. Great Falls and Cascade County employment mirrors that of the State of Montana, and as mentioned earlier, lacks the growth in technology, tourism, and energy industries other Montana cities are seeing.

Median household income for Cascade County is \$44,963 and the City of Great Falls is \$43,822, both of which are lower than the state average of \$46,230. The poverty levels for the City of Great Falls and Cascade County are 16.5 percent, and 14.9 percent, respectively. The state average poverty level is 15.2 percent.

Three census tracts overlap the corridor study area. The overlap incorporates information from locations surrounding the corridor study area, but does not include all census data for the City of Great Falls. The data from the three census tracts around the study area indicates a poverty level of 19.37 percent and minority population of 16.43 percent, both of which are higher than the average for the City of Great Falls.

Cascade County's economy has only moderate growth projected in the near future. The median income within the study area is likely below statewide averages, while the minority population is likely higher than statewide averages. As such, further investigation may be necessary during project development to determine the possibility of low-income and/or minority person(s) being disproportionately isolated, displaced, or otherwise subjected to adverse effects.

3.3.3.2. Land Ownership

Ownership of land in the study area is predominantly local government, with some interspersed private, commercial, and federal owners. The specific public landowners include the City of Great Falls, FWP, and MDT. The City of Great Falls land includes the Eagle Falls Golf Club and Parks and Recreation land. The FWP land encompasses a majority of the land on the north side of the study area along the bank of the Missouri River. The majority of private land use within the study area is either industrial or commercial.

Some properties are physically close to the River Drive North roadway, which may inhibit future project development. If improvements are forwarded from this study, land use at and adjacent to possible projects will need to be considered during design for determining overall project costs.

3.3.3.3. Recreational Resources

Cascade County and the Great Falls area offer a variety of year round outdoor activities. Some of the local activities available either in or adjacent to the study area include walking, running, biking, site seeing, and golfing. Adjacent to the study area are the Veteran's Memorial Park, Eagle Falls Golf Club, the Centene Stadium, and the road that leads to the Giant Springs State Park which contains the Lewis and Clark Interpretive Center and the Giant Springs Fish Hatchery.

Recreational resource information was gathered through review of FWP resource lists, the City of Great Falls website, and websites for the specific venues. Recreational areas may be protected under Section 4(f) of the US Department of Transportation Act of 1966, which was enacted to protect publically owned parks, recreation areas, wildlife and waterfowl refuges, and public and private historic sites of local, state, and national significance. Federally funded transportation projects cannot impact Section 4(f)-protected properties unless there are no feasible and prudent avoidance alternatives and all possible planning to minimize harm has occurred.

From a high level evaluation, there appears to be recreational-related 4(f) resources within the study area that could potentially be impacted from future improvements. These are the Eagle Falls Golf Club and Veteran's Memorial Park, both located on City of Great Falls property. The Eagle Falls Golf Club is owned by the City of Great Falls and open to the public. Acquiring right-of-way from these potential 4(f) lands would need to go through the evaluation process described above which could add time and costs to a project.

According to the FWP National Land and Water Conservation Fund Act (LWCFA) Sites by County, there is one Section 6(f) resource within the study area – Giant Springs State Park. LWCFA funds were utilized to acquire and develop the state park. FWP has indicated that the entire property has LWCFA 6(f) protection. This 6(f) resource should be taken into consideration for any potential forwarded projects, as converting to a non-recreational resource will be both difficult and time-consuming.

Reevaluation of 4(f) and 6(f) resources is likely needed during project development. If future resources are discovered, efforts should be made to avoid adverse impacts to, or right of way acquisitions from, these community recreational resources.

3.3.3.4. Cultural Resources

A file search of the study area through the Montana State Historic Preservation Office revealed four historic properties sites located within sections 4, 5, and 6, T20N, R4E. These four properties have been previously recorded and National Register of Historic Places status established. All four properties are near, but not within, the study area.

Other potentially historic resources exist within the study area. An examination of the Montana Cadastral Survey information for the designated corridor indicates that at least 10 historic-age properties are adjacent to the study corridor. These resources are "unrecorded historic sites" and include nine commercial properties that were constructed between 1950 and 1962.

Direct and indirect impacts (such as visual, noise, and access impacts) to eligible or listed properties would need to be considered during project development. A cultural resource survey for unrecorded historic and archaeological properties within the Area of Potential Effect will need to be completed during the project development process.

3.3.3.5. Noise

Traffic noise may have to be evaluated for planned improvements to the study corridor. Noise analysis is necessary for "Type I" projects. If the roadway improvements are limited (e.g., the horizontal and vertical alignments are not changed, and the highway remains a two-lane facility), then the project would not be considered a Type I project.

If the improvements planned for the road would include a substantial shift in the horizontal or vertical alignments, increasing the number of through-lanes, passing lanes, or turning lanes, or increasing the traffic speed and volume, then the project would be considered a Type I project, which would require a detailed noise analysis. The analysis would include measuring ambient noise levels at selected receivers and modeling design-year noise levels using projected traffic volumes.

Noise abatement measures would be considered for the project if noise levels would approach or substantially exceed the noise abatement criteria. The noise abatement measures must be considered reasonable and feasible before implementation. If noise abatement measures were deemed necessary, they could increase costs of proposed future Type I roadway improvements. Construction activities in the study area may cause localized, short-duration noise impacts. These impacts can be minimized by using standard MDT specifications for the control of noise sources during construction.

There are sensitive noise receptors within the study area which may need evaluation during project development. These receptors include the River's Edge Trail, Veteran's Memorial Park, Eagle Falls Golf Club, Bob Speck Municipal Golf Course, Centene Stadium, and Giant Springs State Park. Due to these receptors, the majority of the corridor will qualify as an Active Category C for the Noise Abatement Criteria.

VISUAL RESOURCES

The visual resources of an area include landforms, vegetation, water features, and physical modifications caused by human activities that give the landscape its visual character and aesthetic qualities. Visual resources are typically assessed based on the landscape character (what is seen), visual sensitivity (human preferences and values regarding what is seen), scenic integrity (degree of intactness and wholeness in landscape character), and landscape visibility (relative distance of seen areas) of a geographically defined view shed.

The River's Edge Trail allows the public to walk and bike along the edge of the Missouri River. An historic marker at approximately RP 4.6 describes the history of Black Eagle. Turnouts exist along the corridor allowing views of Black Eagle Falls. Along with a view of Black Eagle Falls, sandstone outcroppings are visible along the cliffs. One of the turnouts is the Caboose Trailhead which has two railroad cars and several picnic tables for public use. Another visually appealing aspect is the Veteran's Memorial Park, which has a wall of tiles dedicated to those that have served in the US military.

These features lead to a visually appealing setting which should be considered during the development of improvement options. An evaluation of the potential effects on visual resources may be necessary, depending on the improvement options forwarded from this study.

3.4. AREAS OF CONCERN AND CONSIDERATION SUMMARY

This section provides a list and description of areas of concern and consideration within the study area. These areas were identified through review of as-built drawings, field review, public databases, and other resources. More discussion has been provided in the previous sections, and it is reiterated here as appropriate.

3.4.1. TRANSPORTATION SYSTEM

ACCESS AND RIGHT-OF-WAY

 West of 25th Street North, businesses closely front the roadway which provides little room for ingress/egress and for parking.

NON-MOTORIZED

- The River's Edge Trail is located on the north side of the roadway.
- The Caboose Trailhead is located just east of 19th Street North and provides parking and access to the River's Edge Trail.
- There is a trail spur that terminates at the intersection with 19th Street North. There are no crossing treatments at this location.

RAIL

• There is an at-grade crossing between Giant Springs Road and 38th Street North.

FREIGHT

- The study corridor is a designated truck route and is part of the Northeast Bypass.
- The route currently experiences approximately 7.2 percent heavy vehicle traffic.

TRAFFIC OPERATIONS

- The intersection with 15th Street North is projected to experience a LOS of E during the AM and PM peak hours.
- The intersection with 25th Street North currently experiences a LOS of F during the PM peak hour. The intersection is projected to experience a LOS of F during the AM, noon, and PM peak hours.

GEOMETRICS

- Two vertical curves do not meet current standards for rate of curvature.
- The grade between RP 3.8 and RP 4.0 exceeds current standards.

SAFETY

- Crash clusters were noted at the following locations:
 - 15th Street North intersection
 - East of 15th Street North
 - Big Stack Mobile Home Court approach
 - o 12th Street North intersection
 - o Black Eagle Falls scenic turnout
 - o Giant Springs Road intersection
 - o Railroad crossing
 - o 38th Street North intersection
- A trend of rear-end crashes was noted along the study corridor.

3.4.2. Environmental Considerations

PHYSICAL ENVIRONMENT

- The roadway is constrained to the north by the Missouri River.
- The study area is located within the Great Falls MS4 area.
- There is a public water supply well located within the study area.

BIOLOGICAL ENVIRONMENT

- Noxious and exotic plant species may be located within the study area.
- Two bald eagle nests are located within the general proximity of the study corridor.
- Three species of concern have the potential to occur and breed within the study area.

SOCIAL AND CULTURAL ENVIRONMENT

- The median income within the study area is likely below the statewide average.
- The minority population within the study area is likely higher than the statewide average.
- There are 4(f) and 6(f) resources within the study area.
- There are historic-age properties adjacent to the study corridor.
- There are sensitive noise receptors within the study area.
- Visual resources include multiple scenic turnouts, the Black Eagle Falls, the Veteran's Memorial Park, and the sandstone outcroppings along the cliffs.

Chapter 4

Corridor Needs and Objectives

Needs and objectives for the *River Drive Corridor Study* were developed based on a review of existing data, local plans, and input from resource agencies, stakeholders, and the public. The needs and objectives explain why an improvement option, or options, may be necessary. The process includes analysis of the social, environmental, and engineering conditions and recognizes the characteristics of the corridor.

The following needs and objectives were used to develop improvement options. Improvement options identified in this study may lead to future transportation projects that would improve safety and operations or address infrastructure concerns. The purpose and need statement for any future project should be consistent with the needs and objectives contained in this study. However, not all of the needs and objectives at the corridor level must be included in a project-level purpose and need statement.

NEED 1: IMPROVE THE SAFETY OF THE CORRIDOR

Objectives (To the Extent Practicable)

- Reduce the frequency and severity of crashes.
- Improve roadway elements to current design criteria.
- Reduce vehicle conflicts.

NEED 2: ACCOMMODATE EXISTING AND FUTURE DEMANDS

Objectives (To the Extent Practicable)

- Reduce corridor congestion.
- Improve operations to achieve LOS standards.
- Accommodate large vehicles and freight movements.
- Accommodate non-motorized use.

NEED 3: MINIMIZE ADVERSE IMPACTS TO THE ENVIRONMENTAL

CHARACTERISTICS OF THE STUDY AREA

Objectives (To the Extent Practicable)

- Minimize adverse impacts to the Missouri River and surrounding wetlands.
- Avoid or minimize adverse impacts to historic, cultural, archaeological, and recreational resources.
- Preserve the scenic character of the corridor.

OTHER CONSIDERATIONS

- Local and regional planning efforts
- Funding availability
- Construction feasibility and physical constraints
- Impacts to existing residents and businesses in the area

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Chapter 5

Improvement Options

Improvement options were identified to address previously defined issues or areas of concern. They are intended to satisfy the corridor needs and objectives outlined in Chapter 4. The improvements options reflect input from stakeholders and the public, as well as a thorough evaluation of the existing and projected conditions for the study corridor. Three steps were followed to develop improvement options:

- 1. Identify roadway issues and areas of concern based on field review, engineering analysis of asbuilt drawings, crash data analysis, consultation with resource agencies, and information provided by the public.
- 2. Identify overall corridor needs and objectives.
- 3. Analyze the information gathered to develop a range of improvement options to address the roadway issues and areas of concern, as well as to satisfy corridor needs and objectives.

The following sections discuss the recommended improvement options, associated planning-level cost estimates, and potential implementation timeframes.

5.1. PROJECT IMPLEMENTATION

Implementation of improvement options depends on the availability of funding, right-of-way needs, and other project delivery elements. Estimated implementation timeframes were developed for each improvement option based on anticipated project delivery. Implementation timeframes were defined as follows:

- Short-term: Implementation is recommended within a 0- to 5-year period.
- <u>Mid-term:</u> Implementation is recommended within a 5- to 10-year period.
- Long-term: Implementation is recommended within a 10- to 20-year period.

Planning-level cost estimates were also developed for each improvement option. The costs include estimates for right-of-way, utilities, preliminary engineering, construction engineering, construction, and indirect costs. In addition, an inflationary factor of three percent per year was applied to the planning level costs to account for estimated year of expenditure. Cost ranges are provided in some cases, indicating unknown factors at the particular planning-level stage. **Appendix 5** contains detailed planning level cost estimates for each option.

Also included is a list of potentially eligible funding sources and likely agency responsibility. No funding has been identified for any of the recommended improvement options. Refer to **Section 6** for more information on funding mechanisms.

5.2. RECOMMENDED IMPROVEMENT OPTIONS

This section contains descriptions of the recommended improvement options developed for the study corridor. Improvement options were identified for individual spot locations as well as corridor-wide. There may be opportunity to develop spot improvements individually or as part of larger corridor-wide recommendations.

5.2.1. INDIVIDUAL IMPROVEMENT OPTIONS

Individual improvement options were intended to address identified areas of concern for specific locations. These individual improvement options can either be developed as stand-alone improvements, or, in some cases, combined together as larger improvements. There may be cost savings and efficiencies by including packaging improvement options together. **Section 5.2.3** provides options for packaging improvement options together.

1.15TH STREET NORTH INTERSECTION

The signalized intersection of River Drive North and 15th Street North currently operates at a LOS of D, C and C during the AM, noon, and PM peak hours, respectively. The intersection is projected to operate at a LOS of E, C, and E during the respective peak hours. There were 41 crashes reported at the intersection during the five year analysis period.

The width of the north leg of the intersection is constrained by the existing 15th Street North bridge. The north leg is configured with four lanes, a shared through/right and shared through/left for the southbound direction and two northbound travel lanes. The east leg is also constrained by the location of the bridge end and existing development on the southeast corner.

Due to existing lane configurations, the signal is currently operated using split phasing for the northbound and southbound directions (i.e. southbound and northbound movements receive green time separately from each other). Split-phased signal timing is typically less efficient than standard signal timing. The signal timing was recently reviewed and a minor revised signal timing design is expected to be implemented in late 2016. The revised signal timing will include minor changes to clearance intervals and pedestrian crossing times. The revised timing does not include changes to signal phasing.

Full reconstruction of the intersection to address long-term operational issues would be difficult and needs further evaluation due to existing constraints. **Section 5.2.2** discusses full intersection reconstruction in more detail. As an interim improvement option, extending the westbound right-turn lane would help improve intersection operations. The existing turn lane is approximately 425 feet in length. During the PM peak hour, right-turning vehicles often queue beyond the length of the lane, causing blockage of the other westbound lanes. Extending the westbound right-turn lane to accommodate vehicle queues would allow more turning vehicles to exit the traffic stream and would improve intersection operations.

- Potential Impacts to Resources:
 - None identified
- Estimated Cost:
 - o **\$180,000**
- Implementation Timeframe:
 - o Mid-term
- Potential Funding Source:
 - o NH

2. 19TH STREET NORTH INTERSECTION

The intersection of River Drive North and 19th Street North is a three-legged intersection with stop control along 19th Street North. To the north, there is a shared use path spur of the River's Edge Rail that terminates at 19th Street North. There are currently no crossing treatments at this location. The intersection should be evaluated to determine if additional crossing treatment(s) should be provided to improve safety and connectivity for non-motorized users of the River's Edge Trail. Potential crossing treatments include, but are not limited to, advance signing and/or rectangular rapid flashing beacons. A grade separated crossing at this location would likely be difficult and costly as a stand-alone project. Evaluation of a grade-separated crossing could occur in conjunction with project development of a larger roadway reconstruction project.

- Potential Impacts to Resources:
 - o None identified
- Estimated Cost:
 - \$2,000 (advance signing)
 - \$40,000 (rectangular rapid flashing beacons)
- Implementation Timeframe:
 - o Short-term
- Potential Funding Source:
 - o NH
 - o TA

3. BIG STACK MOBILE HOME COURT APPROACH

The Big Stack Mobile Home Court is located on the south side of River Drive North just east of the Caboose Trailhead. The development is accessed by a single approach off River Drive North near the top of the hill. The access has limited sight lines due to steep slopes and vegetation west of the approach. There were 19 reported crashes at this intersection during the five year analysis period.

Reconstruction of the approach and of River Drive North to the west could improve alignment and increase sight distances and would likely help improve safety at the intersection. The geometrics of the approach and of River Drive North are constrained by steep hillsides on both the north and south sides of the roadway. It is likely that a retaining wall would be needed between River Drive North and the Big Stack Mobile Home Court to allow for improved sight distances.

If the intersection geometrics and sight distances cannot be improved at the current location due to existing constraints, it may be desirable to relocate the access to the west and create a new connection to 19th Street North. Relocating the access would require additional right-of-way or an easement.

- Potential Impacts to Resources:
 - Environmental justice considerations.
- Estimated Cost:
 - \$900,000 (existing location)
 - \$500,000 (new connection to 19th Street North)
- Implementation Timeframe:
 - o Mid-term
- Potential Funding Source:
 - o NH
 - o HSIP
 - o Local
 - o Private

4. BUSINESS DISTRICT PARKING AND ACCESS

A variety of businesses are located on the south side of River Drive North west of 25th Street North. There are currently no defined access points for these businesses. Existing right-of-way for River Drive North generally extends close to the building fronts which provides little room for ingress/egress. Vehicles also commonly park at the building fronts and within the roadway right-of-way. There are no parking leases in place between land owners and MDT which would allow parking within the right-of-way.

The current roadway right-of-way in front of the buildings is held in easement by the City of Great Falls. Should development/redevelopment of the business district occur in the future, the businesses may be required to bring parking and landscaping into compliance with current standards. Absent of redevelopment of the businesses, reconstruction of the roadway would provide for better defined access, parking, and circulation. Reconstruction of the roadway to include one travel lane in each direction, center left-turn lane,

bike lanes, and sidewalk on the south side of River Drive North could likely fit within existing constraints. There does not appear to be enough room between the existing businesses and the constraints of the cliffs to include on-street parking on both sides of the roadway. Additionally, on-street parking is not desirable due to safety and operational concerns. An evaluation of parking provisions should occur during project development.

- Potential Impacts to Resources:
 - The businesses are likely properties of historic-age.
 - A public water supply well and a domestic well are located on the south side of the roadway.
- Estimated Cost:
 - o **\$1,500,000**
- Implementation Timeframe:
 - o Mid-term
- Potential Funding Source:
 - o NH
 - o Local
 - o Private

5. 25TH STREET NORTH INTERSECTION

The intersection of 25th Street North and River Drive North is a three-legged intersection with stop-control along 25th Street North. Right-turn slip lanes with yield control are included along the south and west approaches. The intersection currently operates at a LOS of D, C, and F during the AM, noon, and PM peak hours, respectively. Projected conditions result in a LOS of F during all peak hours. Eleven crashes were reported at the intersection during the five year analysis period.

Additional traffic control is necessary to improve operations and safety and to reduce vehicle delay. An intersection signal warrant analysis was completed by MDT on January 13, 2015. The results of the analysis showed that a higher form of traffic control is needed to accommodate northbound left-turning vehicles. The analysis ultimately recommended that the intersection be evaluated for a long-term solution as part of the entire River Drive North corridor. A traffic signal and single lane roundabout are potential options for improving the intersection. These configurations are discussed and compared in this section. Detailed traffic operational data for the configurations are contained in **Appendix 5**.

Concept A – Traffic Signal Configuration

Concept A includes construction of a traffic signal at the intersection. Under this configuration, the west leg includes dedicated through and right-turn lanes, the east leg includes dedicated through and left-turn lanes, and the south leg includes dedicated left-turn and right-turn lanes. The traffic signal would require reconstruction along all approach legs to provide for adequate turn-bay length and to flatten approach grades to meet existing standards. **Figure 5.1** shows a conceptual layout for a traffic signal configuration.

The intersection is shown to operate at a LOS C or better for all approach legs during the peak hours under existing and projected conditions. Peak hour delay would be greatly reduced for vehicles along 25th Street North. Installation of a traffic signal would result in some induced delay for the through movements along River Drive North, however.



Figure 5.1: Traffic Signal Concept at 25th Street Intersection

- Potential Impacts to Resources:
 The Veteran's Memorial [4(f) property] is located on the southeast quadrant.
- Estimated Cost:
 - o **\$2,600,000**

Concept B – Single Lane Roundabout Configuration

Configuration B includes construction of a single lane roundabout at the intersection. A right-turn bypass lane is included along the west approach leg to increase capacity and improve operations. The roundabout configuration requires reconstruction of the intersection and approaches in order to provide deflection and to flatten approach grades to meet existing standards. Installation of a roundabout would decrease conflict points and would likely improve safety at the intersection. **Figure 5.2** shows a conceptual layout for a roundabout configuration.

The intersection is shown to operate at a LOS of C or better during the peak hours under existing and projected conditions. Delay along 25th Street North would be greatly reduced under this option. The westbound approach leg, however, is projected to approach capacity thresholds by the year 2035 due to high amounts of conflicting northbound left-turns.



Figure 5.2: Roundabout Concept at 25th Street Intersection

- Potential Impacts to Resources:
 - The Veteran's Memorial [4(f) property] is located on the southeast quadrant.
- Estimated Cost:
 - o **\$4,000,000**

Concept Comparison

Two conceptual configurations (in addition to the existing configuration) were evaluated for the intersection of River Drive North and 25th Street North. **Table 5.1** shows the intersection operational analysis during the peak hours for each concept. The appropriate traffic control for this location should be evaluated further during the project development process. Changes made to this intersection should also be made in coordination with any corridor improvement options as described in Option 8.

	Existing Conditions (2015)					Projec	ted (Conditi	ons	(2035)		
Configuration	AM		Noon		РМ		AM		Noon		РМ	
Existing Configuration	31.4	D	23.5	С	92.7	F	73.8	F	65.9	F	517.9	F
Traffic Signal	9.0	А	8.9	А	12.8	В	12.2	В	12.2	В	20.6	С
Roundabout	7.5	А	6.4	А	9.8	Α	9.3	Α	8.3	Α	16.9	С

Table 5.1: Intersection Operational Comparison

- Potential Impacts to Resources:
 - The Veteran's Memorial [4(f) property] is located on the southeast quadrant.
- Estimated Cost:
 - o \$2,600,000 (traffic signal)
 - \$4,000,000 (roundabout)
 - Implementation Timeframe:
 - o Mid-term
- Potential Funding Source:
 - o NH
 - o STPU
 - o HSIP
 - o CMAQ

6. EAGLE FALLS GOLF CLUB ACCESS

The Eagle Falls Golf Club is accessed by a single approach off 25th Street North just south of River Drive North. This approach is also used to access the Veteran's Memorial, Centene Stadium, and Pasta Montana's production facility. During special events, such as baseball games at Centene Stadium, the existing approach experiences heavy use and results in vehicle queuing at the intersection with 25th Street North.

A secondary approach to River Drive North near the Eagle Falls Golf Club would improve access to the Eagle Falls Golf Club, Veteran's Memorial, and Centene Stadium and for emergency response vehicles. The approach may also help to reduce congestion at the existing approach along 25th Street North and at the intersection of River Drive North and 25th Street North. It is desirable that a higher form of traffic control be provided at the intersection of River Drive North and 25th Street North and 25th Street North prior to development of a secondary approach.

Potential Impacts to Resources:

- The Eagle Falls Golf Club [4(f) property] is located on the south side of River Drive North.
- Estimated Cost:
 - \$60,000 (without westbound left-turn lane)
 - \$320,000 (with westbound left-turn lane)
- Implementation Timeframe:
 - o Mid-term
- Potential Funding Source:
 - o Local
 - o Private

7. RAILROAD CROSSING REVIEW

There is an at-grade railroad crossing of River Drive North between Giant Springs Road and 18th Avenue North. Traffic control at the crossing consists of a post-mounted flashing light signal with a crossbuck sign. The railway has seen an increase in traffic recently due to increased development to the north. There were four reported crashes near the railroad crossing during the five-year analysis period. An evaluation of the existing crossing should be conducted through a diagnostics review. The review would evaluate the crossing and determine if the existing treatment is appropriate or if modifications are necessary.

Potential Impacts to Resources:

- The Eagle Falls Golf Club [4(f) property] is located to the southwest.
- The Great Northern Railway is a known historic property.

Estimated Cost:

o **\$30,000**

- Implementation Timeframe:
 - o Short-term
- Potential Funding Source:
 NH

8. RIVER DRIVE NORTH RECONSTRUCTION

The River Drive North corridor currently consists of two travel lanes, one in each direction, and has areas with narrow shoulders. The corridor serves as a key route, supporting both local access and regional travel demand. The north side of the roadway is generally constrained by the Missouri River and River's Edge Trail. The south side of the roadway has areas with commercial, light industrial, resident, and recreational developments.

The existing road facility is inadequate to accommodate existing and projected demands. Existing traffic volumes range from a low of approximately 11,000 vehicles per day (vpd) east of Giant Springs Road, to a high of 14,500 vpd west of 25th Street North. Volumes are projected to increase by approximately 1.5 percent per year over the next 20 years.

Reconstruction of the roadway is needed to address operational issues, improve safety, and to accommodate existing and future demands. After review and analysis of multiple concepts (see **Section 2.2** for additional alternatives considered but not advanced), it was decided that a roadway consisting of one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations would best address the identified needs and fit within existing constraints. The corridor was broken into two segments – 15th Street North to 25th Street North and 25th Street North to 38th Street North. These segments represent logical breaks for project development and are discussed in more detail in this section.

With the development of any reconstruction of the corridor, consideration should be made to include nonmotorized accommodations as identified in the *Great Falls Area Long Range Transportation Plan (LRTP)* – 2014⁶. The *LRTP* recommended that an assessment of the viability of on-street bike lanes along River Drive North be made if the roadway is reconstructed. In addition, the *LRTP* recommended that a shareduse path be constructed to provide a connection to the River's Edge Trail at the intersection of 15th Street North and River Drive North.

Segment 1 – 15th Street North to 25th Street North

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 development to the south. West of 25th Street North, 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 further 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 not include full reconstruction of the intersection with 15th Street North. The intersection is constrained by the bridge to the north and by development to the south.

- Potential Impacts to Resources:
 - Environmental justice considerations.
 - The businesses west of 25th Street North are likely properties of historic-age.
 - A public water supply well and a domestic well are located on the south side of the roadway west of 25th Street North.
- Estimated Cost:
 - \$6,000,000 to \$8,000,000
- Implementation Timeframe:
 - Mid to Long-term
- Potential Funding Source:
 - o NH
 - o HSIP
 - CMAQ

Segment 2 – 25th Street North to 38th Street North

This segment of River Drive North consists of limited access points, higher speeds, and lower traffic volumes than Segment 1. Existing traffic volumes range from 12,600 vpd west of Giant Springs Road to 10,800 vpd to the east. These volumes are projected to increase to 17,000 vpd and 15,000 vpd by the year 2035, respectively.

As with Segment 1, reconstruction is envisioned to consist of one travel lane in each direction, center leftturn 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. Unlike Segment 1, however, there are likely fewer locations where a center left-turn lane is needed due to less access points and approaches.

Between 25th Street North and Giant Springs Road the corridor is generally constrained by recreational property (Veteran's Memorial and Eagle Falls Golf Club) to the south. East of 25th Street North the roadway is constrained to the north by steep terrain. In addition, there are two scenic turnouts on the north side near the Eagle Falls Golf Club parking lot. A railroad crossing is located between the Giant Springs Road and 18th Avenue North intersections.

- Potential Impacts to Resources:
 - The Veteran's Memorial and Eagle Falls Golf Club [4(f) properties] are located on the south side of River Drive North.
 - The Great Northern Railway is a known historic property.
 - o Black Eagle Falls Historical Marker located at the scenic turnout.
- Estimated Cost:
 - \$8,500,000 to \$11,400,000
- Implementation Timeframe:
 - o Mid to Long-term
- Potential Funding Source:
 - o NH
 - o HSIP
 - o CMAQ

5.2.2. OPTIONS CONSIDERED BUT NOT ADVANCED

A number of additional improvement options were considered for the corridor but ultimately not recommended in this corridor study. This section provides a description of the other improvement options considered, including the rationale for not furthering them as a recommendation from this study.

15TH STREET NORTH INTERSECTION RECONSTRUCTION

Operations at the intersection of River Drive North and 15th Street North are projected to deteriorate in the future. Reconstruction of the intersection to include additional lanes and improved geometrics are needed as a long-term solution to improve operations. However, the constraints of the existing bridge to the north and development to the southeast make expanding the intersection difficult. It is likely that a widened, or new, bridge structure would be needed to accommodate an expanded intersection in order to increase capacity and improve operations. Further evaluation of the structure and existing constraints is needed to determine the feasibility of intersection reconstruction. This option was not included with full roadway reconstruction due to the existing constraints.

SCENIC TURNOUTS RECONFIGURATION

There are three scenic turnouts along River Drive North. One is located on the north side of the intersection of River Drive North and 25th Street North, while the other two are located in succession near the Eagle Falls Golf Club parking lot. The turnouts do not have defined ingress/egress points or parking areas. The *MDT Road Design Manual*⁷ provides guidance for design of historical marker turnouts on a two-lane highway. The guidance does not give specific recommendations for access control or ingress/egress treatments at scenic turnouts, however.

A stand-alone recommendation for the scenic turnouts was not included at this time. Rather, evaluation of the turnouts should be conducted during development of other improvement options forwarded from this study. The scenic turnout located at the intersection with 25th Street North should be evaluated during project development for Option 6. It is likely that if this intersection were to be reconstructed, the scenic turnout would need to be removed/reconstructed. The two scenic turnouts near the Eagle Falls Golf Club should be evaluated in coordination with reconstruction of River Drive North (Option 8).

GIANT SPRINGS ROAD INTERSECTION

The intersection of River Drive North and Giant Springs Road is located near the railroad crossing on the east end of the study corridor. The intersection has three approach legs with stop control along Giant Springs Road. An eastbound left-turn lane is provided along River Drive North. The intersection is located on a horizontal curve and the north approach has a steep negative grade.

The intersection was reconstructed in 2001. Concern was expressed about the difficulty to see the Giant Springs approach leg when approaching from the west due to the steep grade. There were seven reported crashes at this intersection during the five-year analysis period, two of which involved left-turning vehicles. It is unlikely that stand-alone improvements to this intersection would make sense from a cost-benefit standpoint. Rather, evaluation of the intersection should be included with full corridor reconstruction as discussed in Option 8.

RIVER DRIVE NORTH RECONSTRUCTION ALTERNATIVES

The River Drive North corridor suffers from operational and safety concerns. Reconstruction is needed to accommodate existing and future demands and to improve safety and operations. A diverse array of full reconstruction improvement options for the corridor was initially evaluated. These included two-, three-, four- and five-lane road facilities. After review and analysis of the initial concepts, it was determined that a typical section consisting of one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations would best address the identified needs while limiting impacts and fitting within existing constraints.

Future projected traffic volumes for the segment between 15th Street North and 25th Street North suggest that additional travel lanes may be desirable to accommodate projected demands. After a thorough evaluation of a typical section with additional travel lanes, it was determined that the larger roadway section would result in additional impacts and may require total acquisition of several businesses and residential

units. As such, it was decided that Option 8 adequately accommodated identified corridor needs while limiting impacts to businesses, residents, and resources.

5.2.3. COMBINED OPTIONS

Several individual improvement options discussed previously could be incorporated into full roadway reconstruction. Combining improvement options may help reduce project development time and may result in cost savings. The following discusses the improvement options which may be combined for the two identified roadway segments.

SEGMENT 1 – 15TH STREET NORTH TO 25TH STREET NORTH

Reconstruction of Segment 1 could combine the following individual improvement options:

- > Option 1: Extended westbound right-turn lane at the intersection with 15th Street North.
- > Option 2: At-grade non-motorized crossing enhancements at the intersection with 19th Street North.
- > Option 3: Realignment of the approach for the Big Stack Mobile Home Court.
- > Option 4: Consideration for parking and access for the business district west of 25th Street North.
- > Option 5: Improved traffic control at the intersection with 25th Street North.
- Option 8: Corridor reconstruction to include one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations.

Estimated Cost:

- \$9,400,000 to \$14,500,000
- Implementation Timeframe:
 - Mid to Long-term
- Potential Funding Source:
 - o NH
 - o HSIP
 - o STPU
 - CMAQ
 - o Local
 - o Private

SEGMENT 2 – 25TH STREET NORTH TO 38TH STREET NORTH

Reconstruction of Segment 1 could combine the following individual improvement options:

- > Option 6: New approach to Eagle Falls Golf Club
- Option 8: Corridor reconstruction to include one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations.
- Estimated Cost:
 - \$8,600,000 to \$11,800,000
- Implementation Timeframe:
 - Mid to Long-term
- Potential Funding Source:
 - o NH
 - o HSIP
 - o CMAQ
 - \circ Local
 - o Private

5.3. SUMMARY

This chapter identifies improvement options for the River Drive North corridor between 15th Street North and 38th Street North. The options were based on the evaluation of several factors, including, but not limited to, field review, engineering analysis of as-built drawings, crash data analysis, consultation with resource agencies, and information provided by the public.

The recommended improvement options are intended to offer a range of potential mitigation strategies for corridor issues and areas of concern. Small scale improvement options were identified as low-cost options for addressing identified areas of concern. Larger, more complex reconstruction improvements are also envisioned. The potential may exist to combine improvement options during project development for ease of implementation and other efficiencies.

Table 5.2 summarizes the improvement options, including estimated implementation timeframes, potential funding sources, and planning-level cost estimates. The improvement options are also shown graphically in **Figure 5.3**.

RIVERDRIVE

CORRIDOR STUDY

Im	provement Option	Description	Implementation Timeframe	Cost Estimate	Potential Funding Source	
SPOT IMPROVEMENT OPTIONS						
1.	15 th Street North Intersection	Extend the westbound right-turn lane to accommodate vehicle queues.	Mid-term	\$180,000	NH	
2.	19 th Street North Intersection	Evaluate and install enhanced non-motorized crossing treatment(s)	Short-term	\$2,000 (advance signing) \$40,000 (rectangular rapid flashing beacons)	NH TA	
3.	Big Stack Mobile Home Court Approach	Reconstruct or relocate the existing approach to River Drive North.	Mid-term	\$900,000 (existing location) \$500,000 (new connection to 19 th Street North)	NH HSIP Local Private	
4.	Business District Access	Reconstruct roadway to provide for a center left-turn lane, bike lanes, and sidewalk on the south side.	Mid-term	\$1,500,000	NH Local Private	
5.	25 th Street North Intersection	Install additional traffic control such as a traffic signal or roundabout in coordination with corridor improvement options.	Mid-term	\$2,600,000 (Signal) \$4,000,000 (Roundabout)	NH STPU HSIP CMAQ	
6.	Eagle Falls Golf Club Access	Construct a new access along River Drive North near Eagle Falls Golf Club.	Mid-term	\$60,000 (without westbound left-turn lane) \$320,000 (with westbound left-turn lane)	Local Private	
7.	Railroad Crossing Review	Perform a diagnostics review of the railroad crossing.	Short-term	\$30,000	NH	
8.	River Drive North Reconstruction	Reconstruct to include one travel lane in each direction, center left-turn lane (where appropriate), and non-motorized accommodations.	Mid- to Long-term	\$6,000,000 to \$8,000,000 (Segment 1) \$8,500,000 to \$11,400,000 (Segment 2)	NH HSIP CMAQ	
СО	MBINED OPTIONS					
1.	Segment 1 – 15 TH Street North to 25 th Street North	Include recommendations from options 1, 2, 3, 4, 5, and 8.	Mid- to Long-term	\$9,400,000 to \$14,500,000	NH HSIP STPU CMAQ Local Private	
2.	Segment 2 – 25 th Street North to 38 th Street North	Include recommendations from options 6 and 8.	Mid- to Long-term	\$8,600,000 to \$11,800,000	NH HSIP CMAQ Local Private	

Table 5.2: Recommended Improvement Option	ns
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Figure 5.3: Recommended Improvement Options

Chapter 6

Funding Mechanisms

This chapter identifies mechanisms that may be used to fund improvements to the study corridor. Included is a list of funding sources developed for the distribution of federal and state transportation funding. MDT administers a number of programs that are funded from state and federal sources. Each year, in accordance with Montana Code Annotated (MCA) 60-2-127, the Montana Transportation Commission allocates a portion of available Federal-aid highway funds for construction purposes and for projects located on the various systems in the state as described throughout this chapter. This includes federal funds the state receives under the Fixing America's Surface Transportation Act (FAST Act).

The list of funding mechanisms discussed in this chapter also includes local funding sources available through the city and county, as well as potential private sources. Additional funding sources are possible, but those discussed in this chapter reflect the most probable sources at this time. A narrative description of each potential funding source is provided, including the source of revenue, required match, purpose for which funds are intended, means by which the funds are distributed, and the agency or jurisdiction responsible for establishing priorities for use of the funds.

Funding has not been dedicated to any of the recommended improvement options at this time. Considering the current funding limits of the funding programs discussed herein, and the cost of recommended improvements to the corridor, additional funding from alternative sources may be required if all of the transportation needs are to be met over the planning horizon.

6.1. FEDERAL FUNDING SOURCES

The following is a summary of major federal transportation funding categories received by the state through Titles 23 and 49 United States Code (U.S.C.), including state developed implementation/sub-programs that may be potential sources for projects. In order to receive funding under these programs, projects must be included in the Surface Transportation Improvement Program (STIP) and the MPO Transportation Improvement Program (TIP), where relevant.

6.1.1. NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

The NHPP provides funding for the NHS, including the Interstate System and NHS roads and bridges. The purpose of the NHS is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, intermodal transportation facilities, and other major travel destinations; meet national defense requirements; and serve Interstate and interregional travel. The NHS includes all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

NHPP funds are federally apportioned to Montana and allocated to Districts by the Montana Transportation Commission. Based on system performance, the funds are allocated to three programs: Interstate Maintenance, National Highway, and NHPP Bridge.

Activities eligible for NHS funding include construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS roadway; construction, replacement, rehabilitation, preservation, and protection of bridges on the NHS; and projects or part of a program supporting national goals for improving

infrastructure condition, safety, mobility, or freight movements on the NHS. Operational improvements, as well as highway safety improvements, are also eligible. Other miscellaneous activities that may qualify for NHS funding include bikeways and pedestrian walkways, environmental mitigation, restoration and pollution control, infrastructure-based intelligent transportation systems, traffic and traveler monitoring and control, and construction of intra or inter-city bus terminals serving the NHS. The Transportation Commission establishes priorities for the use of NHPP funds, and projects are let through a competitive bidding process.

NATIONAL HIGHWAY (NH)

The federal share for non-Interstate NHS projects is 86.58 percent, and the state is responsible for the remaining 13.42 percent. The state share is funded through the Highway State Special Revenue Account (HSSR).

The Great Falls District receives approximately \$14.0M to \$20.0M in annual NH funding. Funding is currently obligated for the next five years (through 2020). Unfunded projects (beyond 2020) total approximately \$32.0M.

6.1.2. SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)

STBG funds are federally apportioned to Montana, and they are allocated to various programs by the Montana Transportation Commission. The federal share for these projects is 86.58 percent, with the non-federal share typically funded through HSSR.

URBAN HIGHWAY SYSTEM (STPU)

The federal and state funds available under this program are used to finance transportation projects on Montana's Urban Highway System, as per MCA 60-3-211. STPU allocations are based on a per capita distribution and are recalculated each decade following the US Census. STPU funds are primarily used for resurfacing, rehabilitation, or reconstruction of existing facilities; operational improvements; bicycle facilities; pedestrian walkways, and carpool projects.

State law guides the allocation of urban funds to projects on the Urban Highway System in Montana's urban areas (population of 5,000 or greater) through a statutory formula based on each area's population compared to the total population in all urban areas. Of the total received, 86.58 percent is federal, and 13.42 percent is non-federal match, typically provided from the Special State Revenue Account for highway projects.

Urban funds are used primarily for major street construction, reconstruction, and traffic operation projects on the 430 miles on the state-designated Urban Highway System, but they can also be used for any project that is eligible for STBG under Title 23 U.S.C. Priorities for the use of urban funds are established at the local level through local planning processes with final approval by the Transportation Commission.

Great Falls receives approximately \$1.43M in annual STPU funding. The current balance of STPU funding for Great Falls is \$2.13M. Proposed obligations over the next five years total \$4.70M.

SET-ASIDE PROGRAM (TA)

The Set-Aside Program (TA), previously Transportation Alternatives Program under the Moving Ahead for Progress in the 21st Century Act (MAP-21), requires MDT to obligate 50% of the funds within the state based on population, using a competitive process, while the other 50% may be obligated in any area of the state. The federal share for this program is 86.58% and the state is responsible for the remaining 13.42%. The state share is funded through the HSSRA if the project is on-system, the sponsor provides the match if the project is off-system.

Funds may be obligated for projects submitted by:

- Local governments
- Transit agencies
- Natural resource or public land agencies
- School district, schools, or local education authority
- Tribal governments
- Other local government entities with responsibility for recreational trails for eligible use of these funds.

Eligible categories include:

- On-road and off-road trail facilities for pedestrians and bicyclists, including ADA improvements;
- Historic Preservation and rehabilitation of transportation facilities;
- Archeological activities relating to impacts for a transportation project;
- Any environmental mitigation activity, including prevention and abatement to address highway related stormwater runoff and to reduce vehicle/animal collisions including habitat connectivity;
- Turnouts, overlooks, and viewing areas;
- Conversion/use of abandoned railroad corridors for trails for non-motorized users;
- Inventory, control, and removal of outdoor advertising;
- Vegetation management in transportation right of way for safety, erosion control, and controlling invasive species;
- Construction, maintenance, and restoration of trails and development and rehabilitation of trailside and trailhead facilities;
- Development and dissemination of publications and operation of trail safety and trail environmental protection programs;
- Educations funds for publications, monitoring, and patrol programs and for trail-related training;
- Planning, design, and construction of projects that will substantially improve the ability of students to walk and bicycle to school; and
- Non-infrastructure-related activities to encourage walking and bicycling to school, including
 public awareness campaigns, outreach to press and community leaders, traffic education
 and enforcement school vicinities, student sessions on bicycle and pedestrian safety,
 health, and environment, and funding for training.

The state is required to allocate Transportation Alternative funds through a competitive process which allows eligible applicants an opportunity to submit projects for funding. MDT's process emphasizes safety, ADA, relationships to state and community planning efforts, existing community facilities, and project readiness.

6.1.3. HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

HSIP funds are apportioned to Montana for allocation to safety improvement projects approved by the Transportation Commission and are consistent with the strategic HSIP. Projects described in the state Strategic Highway Safety Plan must correct or improve a hazardous road location or feature, or address a highway safety problem. The Transportation Commission approves and awards the projects, which are let through a competitive bidding process. Generally, the federal share for the HSIP projects is 90 percent with the non-federal share typically funded through the HSSR account.

HSIP funds are distributed at a statewide level through MDT's Traffic Safety Section as needs and improvements are identified. This is unlike other federal funding sources where an annual allocation is

distributed for each District to prioritize. HSIP funding availability depends on competing safety needs and trends throughout the state.

6.1.4. CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)

Federal funds available under this program are used to finance transportation projects and programs to help improve air quality and meet the requirements of the Clean Air Act. Montana's air pollution problems are attributed to CO and particulate matter (PM10 and PM2.5).

CMAQ funds are federally apportioned to Montana and allocated to various eligible programs by formula and by the Transportation Commission. As a minimum apportionment state, a federally required distribution of CMAQ funds goes to projects in Missoula since it was Montana's only designated and classified air quality non-attainment area. The remaining, non-formula funds, referred to as "flexible CMAQ," are directed primarily to areas of the state with emerging air quality issues through various state programs. The Transportation Commission approves and awards both formula and non-formula projects on MDT right-of-way. Infrastructure and capital equipment projects are let through a competitive bidding process. Of the total funding received, 86.58 percent is federal, and 13.42 percent is non-federal match the state provides for projects on state highways and local governments for local projects.

In general, eligible activities include transit improvements, traffic signal synchronization, bicycle pedestrian projects, intersection improvements, travel demand management strategies, traffic flow improvements, airquality equipment purchases, and public fleet conversions to cleaner fuels. At the project level, the use of CMAQ funds is not constrained to a particular system (i.e., primary, urban, and NHS). A requirement for the use of these funds is the estimation of the reduction in pollutants resulting from implementing the program/project. These estimates are reported yearly to FHWA.

Great Falls receives approximately \$1.52M in annual CMAQ funding. Current priorities total approximately \$3.80M over the next five years.

MONTANA AIR AND CONGESTION INITIATIVE (MACI)-GUARANTEED PROGRAM (FLEXIBLE)

This is a state program funded with flexible CMAQ funds that the Transportation Commission allocates annually to Billings and Great Falls to address carbon monoxide issues in these designated, but "not classified," CO non-attainment areas. The air quality in these cities is roughly equivalent to Missoula; however, since these cities are not classified, they do not get direct funding through the federal formula. Projects are prioritized through the respective Billings and Great Falls Metropolitan planning processes.

MACI - DISCRETIONARY PROGRAM (FLEXIBLE)

The MACI Discretionary Program provides funding for projects in areas designated non-attainment or recognized as being "high-risk" for becoming non-attainment. Since 1998, MDT has used MACI Discretionary funds to get ahead of the curve for CO and PM10 problems in non-attainment and high-risk communities across Montana. District administrators and local governments nominate projects cooperatively. Projects are prioritized and selected based on air-quality benefits and other factors. The most beneficial projects to address these pollutants have been sweepers and flushers, intersection improvements, and signal synchronization projects.

6.1.5. CONGRESSIONALLY DIRECTED FUNDS

Congressionally directed funds may be received through either highway program authorization or annual appropriations processes. These funds are generally described as "demonstration" or "earmark" funds. Discretionary funds are typically awarded through a federal application process or Congressional direction. If a local sponsored project receives these types of funds, MDT will administer the funds in accordance with the Montana Transportation Commission Policy #5 – "Policy resolution regarding Congressionally directed funding: including Demonstration Projects, High Priority Projects, and Project Earmarks."

6.2. STATE/LOCAL FUNDING SOURCES

State and local governments generate revenue through a variety of funding mechanisms. Typically, several programs related to transportation exist for budgeting purposes and to disperse revenues. These programs are tailored to fulfill specific transportation functions or provide particular services. The following text summarizes programs that are or could be used to finance transportation improvements by the City of Great Falls.

6.2.1. FUEL TAX

The state of Montana assesses a tax of \$0.2775 per gallon on gasoline and diesel fuel used for transportation purposes. According to state law, each incorporated city and town within the state receives an allocation of the total tax funds based upon the following:

- 1. The ratio of the population within each city and town to the total population in all cities and towns in the state
- 2. The ratio of the street mileage within each city and town to the total street mileage in all incorporated cities and towns in the state (The street mileage is exclusive of the Federal-aid Interstate and Primary Systems.)

State law also establishes that each county be allocated a percentage of the total tax funds based upon the following:

- 1. The ratio of the rural population of each county to the total rural population in the state, excluding the population of all incorporated cities or towns within the county and state
- 2. The ratio of the rural road mileage in each county to the total rural road mileage in the state, less the certified mileage of all cities or towns within the county and state
- 3. The ratio of the land area in each county to the total land area of the state

For State Fiscal Year 2017, the city of Great Falls will receive \$976,319 in fuel tax funds. The amount varies annually, but the current level provides a reasonable base for projection throughout the planning period.

All fuel tax funds allocated to the city and county governments must be used for the construction, reconstruction, maintenance, and repair of rural roads or city streets and alleys. The funds may also be used for the share that the city or county might otherwise expend for proportionate matching of federal funds allocated for the construction of roads or streets that are part of the primary, secondary, or urban system. Priorities for the use of these funds are established by each recipient jurisdiction.

6.2.2. CITY OF GREAT FALLS

SPECIAL REVENUE FUNDS

These funds are used to budget and distribute revenues that are legally restricted for a specific purpose. Several such funds that benefit the transportation system are discussed briefly in the following paragraphs.

SPECIAL IMPROVEMENT DISTRICT (SID) REVOLVING FUND

This fund provides financing to satisfy bond payments for special improvement districts in need of additional funds. The city can establish street SIDs with bond repayment to be made by the adjoining landowners receiving the benefit of the improvement. The city has provided labor and equipment for past projects through the General Fund, with a SID paying for materials.

TAX INCREMENT FINANCING (TIF)

Increment financing has been used in many municipalities to generate revenue for public improvement projects. As improvements are made within the district, and as property values increase, the incremental increases in property tax revenue are earmarked for this fund. The fund is then used for improvements within the district. Expenditures of revenue generated by this method are subject to certain spending restrictions and must be spent within the district. Tax increment districts could be established to accomplish transportation improvements in other areas of the community where property values may be expected to increase.

Great Falls currently has five active TIF districts: 1) Central Montana Agricultural and Technology Park District; 2) West Bank Urban Renewal District; 3) Great Falls International Airport District; 4) AgriTech Park District, and; 5) Great Falls Downtown Urban Renewal District. The funds generated from TIF districts could be used to finance projects that include street and parking improvements, tree planting, installation of new bike racks, trash containers and benches, and other streetscape beautification projects.

6.2.3. PRIVATE FUNDING SOURCES

Private financing of roadway improvements, in the form of right-of-way donations and cash contributions, has been successful for many years. In recent years, the private sector has recognized that better access and improved facilities can be profitable due to increases in land values and commercial development possibilities. Several forms of private financing for transportation improvements used in other parts of the United States are described in this section.

COST SHARING

The private sector pays some of the operating and capital costs for constructing transportation facilities required by development actions.

TRANSPORTATION CORPORATIONS

These private entities are non-profit, tax-exempt organizations under the control of state or local government. They are created to stimulate private financing of highway improvements.

ROAD DISTRICTS

These are areas created by a petition of affected landowners, which enables issuance of bonds for financing local transportation projects.

PRIVATE DONATIONS

The private donation of money, property, or services to mitigate identified development impacts is the most common type of private transportation funding. Private donations are effective in areas where financial conditions do not permit a local government to implement a transportation improvement itself.

PRIVATE OWNERSHIP

This method of financing is an arrangement where a private enterprise constructs and maintains a transportation facility, and the government agrees to pay for public use of the facility. Payment for public use of the facility is often accomplished through leasing agreements (wherein the facility is rented from the

owner), or through access fees whereby the owner is paid a specified sum depending upon the level of public use.

PRIVATIZATION

Privatization is either the temporary or long-term transfer of a public property or publicly owned rights belonging to a transportation agency to a private business. This transfer is made in return for a payment that can be applied toward construction or maintenance of transportation facilities.

GENERAL OBLIGATION (GO) BONDS

The sale of GO bonds can be used to finance a specific set of major highway improvements. A GO bond sale, subject to voter approval, provides the financing initially required for major improvements to the transportation system. The advantage of this funding method is that when the bond is retired, the obligation of the taxpaying public is also retired. State statutes limiting the level of bonded indebtedness for cities and counties restrict the use of GO bonds. The present property tax situation in Montana, and recent adverse citizen responses to proposed tax increases by local government, suggest that the public may not be receptive to the use of this funding alternative.

MULTI-JURISDICTIONAL SERVICE DISTRICT

The State Legislature authorized this funding option in 1985. This procedure requires the establishment of a special district, somewhat like a SID, which has the flexibility to extend across city and county boundaries. Through this mechanism, an urban transportation district could be established to fund a specific highway improvement that crosses municipal boundaries (e.g., corporate limits, urban limits, or county line). This type of fund is structured similar to an SID with bonds backed by local government issued to cover the cost of a proposed improvement. Revenue to pay for the bonds would be raised through assessments against property owners in the service district.

LOCAL IMPROVEMENT DISTRICT

This funding option is only applicable to counties wishing to establish a local improvement district for road improvements. While similar to a SID, this funding option has the benefit of allowing counties to initiate a local improvement district through a more streamlined process than that associated with the development of a SID.

6.2.4. FUTURE POTENTIAL FUNDING SOURCES

LOCAL SALES TAX

If authorizing legislation were to be approved, local governments would be able to initiate local option taxes as a potential funding source for transportation improvements. One local option tax would be a local sales tax.

WHEEL TAX

If initiated, a tax per wheel on vehicles licensed in counties could generate substantial revenue. The cost to each user of the transportation network would be proportional to the number and type of vehicles owned.

LOCAL OPTION MOTOR FUEL TAX

A local option fuel tax is another means of raising revenue for the construction, reconstruction, maintenance, and repair of public streets and roads. This local tax may be imposed by the people of the county or by the adoption of a resolution by the county commissioners and referred to the people. An advantage to a local motor fuel tax, as with a wheel tax, is that it taxes only the users of the transportation system, and the tax paid by such individuals is directly proportional to their use of the facilities. The revenue

from a motor fuel tax must be distributed proportionately among the county and its member municipalities based on vehicle registration.

EXCISE TAXES

Excise taxes are similar to sales taxes with the exception that items taxed are those considered indulgent. The demand for items on which there is an excise tax is generally large; therefore, there is potential to raise a substantial amount of local revenue. Products on which an excise tax could be imposed for additional local revenue include such items as tobacco, alcohol, and various forms of entertainment. A potential problem with excise taxes arises when the tax causes inter-area competition.

DEVELOPMENT IMPACT FEES

Another way funds can be generated for transportation improvements is by assessing a fee to the developers of property. The fee is based on the impact the development is likely to have on the transportation network.

VALUE CAPTURE TAXES

Value capture taxes are a way to raise revenue following development of transportation improvements. Whereas development fees are assessed to make necessary transportation improvements, value capture taxes impose a fee on businesses that benefit due to their location along improved, highly traveled routes, which assumes improvements have been made. Value capture taxes may be a means to enter into other forms of funding future improvements. One method to consider would be cash flow management that makes wise use of existing revenue rather than continuing to introduce new sources.

Chapter 7

Conclusions and Next Steps

River Drive North between 15th Street North and 38th Street North was evaluated at a planning-level to obtain an understanding of corridor needs, objectives, constraints, and opportunities. MDT initiated the development of this pre-NEPA/MEPA study, with the cooperation with FHWA and the Great Falls MPO, to plan for long-term corridor needs and to develop a package of improvement options to address identified needs. The study examined geometric characteristics, crash history, land uses, physical constraints, environmental resources, and existing and projected operational characteristics of the corridor.

Publically available information relative to environmental resources and existing infrastructure, coupled with focused outreach to the public, stakeholders, and various resource agencies was reviewed to identify improvement options for the corridor. The improvement options include short- and long-term recommendations intended to address the transportation needs of the corridor over the planning horizon (2035). These recommendations will assist the study partners in targeting the most critical needs and allocation of resources.

7.1. NEXT STEPS

The ability to develop and implement the recommended improvement options ultimately depends on availability of funding, right-of-way needs, and other project priorities. At this time, there is no funding identified to complete any of the recommended improvement options contained in this study. To continue with the development of a project (or projects) the following steps are needed:

- Identify and secure a funding source(s).
- Include project in the Great Falls MPO Transportation Improvement Plan (TIP).
- For MDT-led projects, follow MDT guidelines for project nomination and development, including a public involvement process and environmental documentation.
- For projects that are developed by others and may impact MDT routes, coordinate with MDT via the System Impact Action Process.

Should this corridor planning study lead to a project or projects, compliance with NEPA (if federal funding is used) and MEPA (if a state action) will be required. The purpose and need statement for any future project should be consistent with the needs and objectives contained in this study. Further, this corridor planning study will be used as the basis for determining the impacts and subsequent mitigation for the improvement options in future NEPA/MEPA documentation. Any project developed will have to comply with CFR Title 23 Part 771 and ARM 18, sub-chapter 2, which sets forth the requirements for documenting environmental impacts on highway projects.

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⁴ *Road Design Manual*, Montana Department of Transportation, July 18, 2008, <u>http://www.mdt.mt.gov/publications/manuals.shtml</u>

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