

River Drive North *Corridor Study*

DRAFT Environmental Scan Report

Revised November 10, 2015

Prepared by:



This Page Intentionally left blank.

DRAFT

Contents

1.0 Introduction 1

 1.1 Study Area 1

 1.2 Goals of Study 1

2.0 Physical Environment 2

 2.1 Soil Resources and Prime Farmland 2

 2.2 Geologic Resources 2

 2.3 Surface Waters 3

 2.4 Groundwater 5

 2.5 Wetlands 6

 2.6 Floodplains and Floodways 6

 2.7 Irrigation 7

 2.8 Air Quality 7

 2.9 Hazardous Substances 8

3.0 Biological Resources 10

 3.1 Vegetation 10

 3.2 General Wildlife Species 11

 3.3 Threatened and Endangered Species 14

 3.4 Species of Concern 14

4.0 Social and Cultural Resources 15

 4.1 Population Demographics and Economic Conditions 15

 4.2 Planning Documents 19

 4.3 Land Ownership 19

 4.4 Recreational Resources 19

 4.5 Cultural Resources 21

 4.6 Noise 22

 4.7 Visual Resources 23

5.0 Conclusion 24

6.0 References 25

Figures

Figure 1 Total Observed and Projected Population in the Study County 16

Figure 2 Population Comparison 2000 - 2030 17

Tables

Table 1 303(d) Listed Streams in Study Area 4
 Table 2 Public Water Supply within Study Area 5
 Table 3 Underground Storage Tanks (USTs) - Closed 8
 Table 4 Exotic and Noxious Weed Species in Cascade County 11
 Table 5 Fisheries Data 12
 Table 6 Threatened and Endangered Species in Cascade County 14
 Table 7 Species of Concern 15
 Table 8 2013 Census Demographics Data for Cascade County 16
 Table 9 Age Distribution 17
 Table 10 Non – Seasonally Adjusted Employment Data 18
 Table 11 County Employment by Industry (2009-2013) 18
 Table 12 Known Cultural Resources and Historical Properties 21
 Table 13 Properties of Historic-age 22

Attachments

Attachment 1 Exhibits
 Exhibit 1: Corridor Planning Study Area
 Exhibit 2: Topographic Map of Study Area
 Exhibit 3: Prime Farmlands
 Exhibit 4: Geology
 Exhibit 5: Surface Water and Wetlands
 Exhibit 6: MS4 and Urban Boundaries
 Exhibit 7: Wells and Water Rights
 Exhibit 8: Flood zones
 Exhibit 9: UST and LUST Facilities

 Exhibit 10: Animal Carcass Distribution
 Exhibit 11: Species of Concern
 Exhibit 12: Land Uses
 Exhibit 13: Potential 4(f) and 6(f) Resources
 Exhibit 14: Cultural and Historical Resources

 Attachment 2 Water Resources Survey Maps
 Attachment 3 Noise Abatement Criteria table

Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
ARM	Administrative Rules of Montana
BOR	Bureau of Reclamation
CAPS	Crucial Areas Planning System
CEIC	Census and Economic Information Center
CFR	Code of Federal Regulations
CRABS	Cultural Resource Annotated Bibliography System
CRIS	Cultural Resource Information Systems
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
DOC	Montana Department of Commerce
DOLI	Montana Department of Labor and Industry
EO	Executive Order
eREMI	Regional Economic Models, Inc.
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FID	Facility Investigation Database
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FWP	Montana Department of Fish, Wildlife, and Parks
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LID	Low Impact Development
LUST	Leaking Underground Storage Tank
LWCFA	Land and Water Conservation Fund Act
MBMG	Montana Bureau of Mines and Geology
MBOG	Montana Board of Oil and Gas
MBTA	Migratory Bird Treaty Act
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFISH	Montana Fisheries Information System
MNHP	Montana Natural Heritage Program
MPDES	Montana Pollutant Discharge Elimination System
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System (MS4)
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPL	National Priority List
NPMS	National Pipeline Mapping System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System

Abbreviations and Acronyms, continued

NWI	National Wetlands Inventory
PESC	Permanent Erosion and Sediment Control
PM	Particulate Matter
RP	Reference Post
RM	River Mile
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SOC	Species of Concern
T&E	Threatened and Endangered
TEDD	Targeted Economic Development District
TIP	Transportation Improvements Plan
TMDL	Total Maximum Daily Load
UM	University of Montana
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USNPS	United States National Park Services
UST	Underground Storage Tank
WQA	Water Quality Act

1.0 Introduction

The primary objective of this environmental scan report is to provide a planning-level overview of resources and determine potential constraints and opportunities for the River Drive North Corridor Planning Study. Information in this report was obtained from publically available reports, websites, and documentation. This scan is not a detailed environmental investigation.

If improvement options are forwarded from this study into project development, an analysis for compliance with the National and Montana Environmental Policy Acts (NEPA and MEPA) will be completed as part of the Montana Department of Transportation (MDT) project development process. Information provided in this report may be included in the NEPA/MEPA process at that time.

1.1 Study Area

The Study is referred to as the River Drive Corridor, and is located in central Montana in Cascade County along the Missouri River. The Study Area begins at the intersection of Highway 87 and River Drive North, which is Reference Post (RP) 3.4 of River Drive North. The corridor extends two miles east along River Drive North to the intersection of River Drive North and 38th Street. Included in the Study are the intersections of River Drive North and Highway 87, River Drive North and 25th Street, and River Drive North and 38th Street. The Study Area for this environmental scan includes a 200-foot buffer from centerline along both sides of the roadway (for a total buffer width of 400 feet) throughout the corridor.

On the north side of the corridor there is limited area for development as the Missouri River and River's Edge Trail parallel the Study Area for all but the last half-mile of the eastern end of the Study Area. At that point, the Missouri River and River's Edge Trail veer off heading northeast while the corridor turns and heads southeast. The land on the south side of River Drive North from RP 3.4 to approximately RP 4.5 is mostly commercially developed land with one small location of residential development. The last half-mile on the south side of River Drive North is the Eagle Falls Golf Club.

Multiple maps have been prepared to illustrate resources present in the Study Area. For ease of reference, all exhibits are included in Attachment 1. Exhibit 1 is an illustration of the Study Area location, and Exhibit 2 is a topographic map of the Study Area.

1.2 Goals of Study

Substantial growth has occurred in the area in recent years, leading to increased traffic and congestion. Because of this growth, MDT has identified a need for a planning study to investigate potential capacity and safety improvements along the corridor.

The corridor study aims to reduce planning time while managing community and social issues, and minimize construction costs through the demonstration of feasible improvement opportunities. The study will seek to minimize the cost of any possible improvements while considering environmental and social concerns.

2.0 Physical Environment

2.1 Soil Resources and Prime Farmland

Soil information was reviewed to determine the presence of prime and unique farmland in the Study Area to demonstrate compliance with the Farmland Protection Policy Act (FPPA). The FPPA is intended “to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland.”

The term “farmland” refers to prime farmland; some prime if irrigated farmland; unique farmland; and farmland, other than prime or unique farmland, that is of statewide importance. Prime farmland soils are those that have the best combination of physical and chemical characteristics for producing food, feed, and forage; the area must also be available for these uses. Prime farmland can be either non-irrigated or lands that would be considered prime if irrigated. Farmland of statewide importance is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, forage, and oilseed crops.

Soil surveys of the Study Area are available from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). NRCS soil surveys indicate the presence of farmland of statewide importance within the Study Area. From approximately RP 3.4 to RP 4.25 there is a sliver of farmland designated as having statewide importance just inside the south side of the buffer zone. The last quarter mile is also designated as farmland of statewide importance. The majority of this land designated as farmland of statewide importance has been developed. Developed land previously designated as prime farmland is no longer subject to the FPPA, and will not be considered in impact analyses for future improvements forwarded from the Study (refer to Exhibit 3 in Attachment 1).

Any forwarded improvement options that require right-of-way within identified farmlands and are supported with federal funds will require a CPA-106 Farmland Conversion Impact Rating Form for Linear Projects completed by MDT and coordinated with NRCS. The NRCS uses information from the impact rating form to keep inventory of the prime and important farmlands within the state.

2.2 Geologic Resources

Information on the geology and seismicity in the Study Area came from several published sources. Geologic mapping was reviewed for rock types, the presence of unconsolidated material, and fault lines. The seismicity and potential seismic hazards were also reviewed. This geologic information can help determine potential design and construction issues related to embankments and road design. The following is a brief summary of the geologic and seismic conditions present in the Study Area. Exhibit 4 (in Attachment 1) presents the geologic formations and structures within the Study Area.

Geologic mapping indicates the roadway through this section is underlain by the Cretaceous Kootenai formation. 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 (AASHTO A-4, A-6, and A-7). These soil types can be moisture sensitive. The

design of future projects forwarded from the study should consider including permanent erosion and sediment control (PESC) measures to the extent practicable to facilitate stabilization and revegetation of disturbed areas.

MDT maintains the Montana Rockfall Hazard Rating System (RHRS) to manage rock slope assets along Montana highways. A 2003-2005 MDT research program evaluated rockfall history and behavior throughout the state. No rockfall hazards are located along the Study Area.

Montana is a seismically-active state. The Intermountain Seismic Belt is a regional zone of seismicity that extends through western Montana from the northwest corner (Flathead Lake region) to Yellowstone National Park. No recent earthquakes have been recorded in the Study Area.

Improvements brought forward from the study will be subject to more detailed geotechnical analysis. Part of this detailed analysis may involve taking advance borings to evaluate soil characteristics at exact project locations.

2.3 Surface Waters

Topographic maps and geographic information system (GIS) data was reviewed to identify the location of surface water bodies such as rivers, streams, lakes, and reservoirs within the Study Area. The Missouri River is the only surface water located adjacent to the Study Area. Exhibit 5 (in Attachment 1) depicts the Missouri River and its location relative to 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 Missouri River from the Study Area. This intermittent stream is shown on Exhibit 5 as it has the potential to transport sediment or pollutants that could affect water quality of the Missouri River.

If improvements forwarded from the study would involve construction in or near the Missouri River permitting may be required. The Missouri River is listed as a Jurisdictional Waterway under Section 10 of the Rivers and Harbors Act from the Headwaters near Three Forks, Montana downstream to the Iowa / Missouri state line. As such, the portion of the river passing through Great Falls is subject to Section 10 regulations, which provides jurisdiction to the United States Army Corps of Engineers (USACE) for permitting construction activities in these waters.

The USACE would also have jurisdiction for purposes of Clean Water Act Section 404 permitting. The Montana Department of Fish, Wildlife and Parks (FWP) would have jurisdiction for Stream Protection Act 124 permitting. The Montana Department of Environmental Quality (DEQ) would have jurisdiction for Clean Water Act Section 401 Certification. 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. Impacts may trigger compensatory mitigation requirements of the USACE.

Total Maximum Daily Loads

The Study Area is located in the Missouri-Sun-Smith Watershed and more specifically the Missouri River hydrologic unit code (HUC) 10030102. A search of the DEQ website revealed one waterbody on the 303d/305b integrated list within the buffer zone of the corridor. The waterbody is the Missouri River, which is shown on Exhibit 5 in Attachment 1. Section 303

subsection “d” of the Clean Water Act requires the state of Montana to develop a list, subject to United States Environmental Protection Agency (USEPA) approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, DEQ determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL).

TMDLs set by DEQ become the basis for implementation plans to restore water quality to a level that supports state designated beneficial water uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects.

DEQ lists the section of the Missouri River (MT41Q001_011) that is adjacent to the Study Area as having impairments in the Draft 2014 Integrated 303(d)/305(b) Water Quality Report for Montana (see Table 1 below). The Missouri River is classified as a category 5 water. Category 5 definition is waters where one or more applicable beneficial uses are impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat, but has not been completed. Currently MDEQ is working on completing the TMDL for this watershed. Coordination with MDEQ on TMDL status will occur at the development stage of potential improvements. For the Missouri River inside the Study Area, major probable sources of impairment are industrial/commercial site stormwater discharge, and industrial point Source discharges. Currently the probable sources of impairments are not listed as being associated with road construction activities. That said, 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.

Table 1 303(d) Listed Streams in Study Area

Named Stream	Location (RM ¹)	Use Class	TMDL Completed	Category	Possible Impairment	Beneficial Uses
Missouri River MT43E001_010	23.0	B-2	No	5	Chromium(total), Mercury, Physical Substrate Habitat alterations, Polychlorinated bihppeyls, Sedimentation/Siltation, Selenium, Solids(Suspended/Bedload), Turbidity	Aquatic Life, Primary Contact, Recreation, Agricultural, Drinking Water

Source: DEQ, 2015

Stormwater

Construction of forwarded improvement options may trigger the need to obtain coverage under the Montana Pollutant Discharge Elimination System (MPDES) General Permit for Storm Water Discharges Associated with Construction Activity.

The Study Area is located within the Great Falls Municipal Separate Storm Sewer System (MS4) area. Exhibit 6 depicts the boundary of the Great Falls MS4 set forth in Administrative Rules of Montana (ARM 17.30.1101; 17.30.1301; and 17.30.601). Current permit holders are the City of Great Falls, Cascade County, Malmstrom Air Force Base, and MDT. 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.

The City of Great Falls, Cascade County, and MDT all manage MS4 programs that overlap the Study Area. Each program has specific requirements based on their individual Storm Water Management Plans. Information on the MS4 programs including specific requirements for the individual programs can be located on the respective permit holder's stormwater website, which can be found in the references section at the end of this document. These and other MS4 issues will need to be further evaluated during any future project design. The current MS4 permit is in the process of being reissued and MDT has applied for an Individual MS4 permit. As such, it is likely the permit requirements will be slightly different in the future.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act, created by Congress in 1968, provided for the protection of certain rivers, and their immediate environments, that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, or cultural resources, or other similar values. Based on a review of the United States National Park Service (USNPS) website it was determined that 149 miles of the Missouri River hold a wild and scenic designation, but none of these miles are in or adjacent to the Study Area.

2.4 Groundwater

According to the Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC), there are 6,208 wells on record in Cascade County. The newest well on record is from April 23, 2015, and the oldest well on record is from June 1864. Approximately 50 percent (3,151) of wells within Cascade County are at a depth of 0 to 99 feet. There are 29 statewide monitoring network wells in Cascade County. The wells in Cascade County have widely varying uses, with domestic water (4,121) being the most common followed by stockwater (1,089).

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. Well costs are based on per foot price; the deeper and higher volume needed results in a higher cost.

There are two private domestic wells located within the buffer zone of the Study Area. In addition to the private wells, one public water supply well is located inside the buffer zone. An extra item to consider with public water supply wells is they have a setback requirement from DEQ of a 100-foot isolation zone 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. The public water supply wells information is listed below in Table 2. A visual depiction of their approximate location can be seen in Exhibit 7 (in Attachment 1).

Table 2 Public Water Supply within Study Area

Owner	Approximate Location	Exhibit #
Culligan Water Company	RP 4.1	7

Source: DEQ 2015.

In any future roadway improvements on the corridor, MDT will take measures to avoid adverse impacts to Public Water Supply wells. Impacts to existing domestic wells will also be considered if improvement options are forwarded from the study.

2.5 Wetlands

The USACE defines wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping data is available for this area from the NWI website or the Montana Natural Resource Information System (NRIS)). Based on review of this information and a windshield survey of the corridor, no known wetland areas are currently identified within the Study Area. The potential exists for a wetland to occur within the riparian corridor of the Missouri River; however the steepness of the terrain along the riverbanks likely would not facilitate generation of a wetland area. Exhibit 5 in Attachment 1 would depict wetlands that were known. Since no wetlands are known at this time, a disclaimer has been added to Exhibit 5 that future evaluations should occur at the development stage of potential improvements. Future wetland investigation and potential delineation would be required if improvement options are forwarded from the study.

2.6 Floodplains and Floodways

Executive Order 11988, Floodplain Management, requires federal agencies to avoid to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities" for the following actions:

- acquiring, managing, and disposing of federal lands and facilities;
- providing federally-undertaken, financed, or assisted construction and improvements; and
- conducting federal activities and programs affecting land use, including but not limited to, water and related land resources planning, regulation, and licensing activities.

Federal-aid Policy Guide, 23 CFR 650, Bridges, Structures, and Hydraulics, provides "policies and procedures for the location and hydraulic design of highway encroachments on flood plains, including direct Federal highway projects administered by the [Federal Highway Administration (FHWA)]." This document defines "base flood" as the "flood or tide having a 1-percent chance of being exceeded in any given year" and "base flood plain" as the "area subject to flooding by the base flood."

Federal Emergency Management Agency (FEMA)-issued flood maps for Cascade County indicate that flood plain zones existing within or adjacent to the Study Area. They are as follows:

- Zone A: Special Flood Hazard Area (SFHA) – 100-Year Flood, Base Flood Elevations NOT Determined;

- Zone AE: SFHA – 100-Year Flood, Base Flood Elevations Determined;
Zone AE: SFHA – 100-Year Flood, Base Flood Elevations Determined, Floodway Areas;
Zone X: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood;
Zone X: Areas determined to be outside 500-Year Flood.

Zone A, Zone AE, and Zone X (0.2% chance flooding) are adjacent or intersect the Study Area on the north side of River Drive North. Zone X that is defined as areas determined to be outside the 500-year (0.2% annual chance) flood plain encompasses the majority of the Study Area. The elevation difference between the Missouri River and River Drive North places the road outside the of the flood zones that create concern of flooding or might impact potential improvements. Most potential improvement will not see an impact and flood zones and permitting should not hinder them. The mapped flood zones are shown on the MDT-created flood plain maps in Exhibit 8.

If roadway improvements or developments could involve placement of fill within the regulatory flood plain then a flood plain permit would be required. Project development would then require coordination with Cascade County to minimize flood plain impacts and obtain necessary floodplain permits for project construction. As Zone X (outside 500-Year Flood) is the main flood zone impacting the Study Area there should be minimal impacts to possible improvements by flood zones, but should be reevaluated at time of project development for any changes.

2.7 Irrigation

Irrigated agriculture land exists in Cascade County but not within the Study Area. If there is impact to irrigation structures, there could be additional costs above typical project costs associated with the redesign, or moving of the irrigation structure(s). The available Water Resources Survey maps (Attachment 2) 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.

Irrigation structures are of a high importance to the areas requiring irrigation and if they are found to be present, they will need to be taken into consideration as part of the design process if MDT forwards projects in the corridor. Please refer to section 4.5 and Attachment 2 for historical information.

2.8 Air Quality

The USEPA has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, including carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide, and lead. The USEPA designates communities that do not meet NAAQS as “non-attainment areas.” States are then required to develop a plan to control source emissions and ensure future attainment of NAAQS. 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 will not be required in future project design to accommodate NAAQS non-attainment issues.

Depending on the scope of improvements considered in the Study Area, an evaluation of mobile source air toxics (MSATs) may be required. MSATs are compounds emitted from highway vehicles and off-road equipment, which are known or suspected to cause cancer or other serious health and environmental effects.

2.9 Hazardous Substances

The NRIS and Montana Board of Oil and Gas (MBOG) databases were searched for information on underground storage tank (UST) sites, leaking underground storage tank (LUST) sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, hazardous waste, crude oil pipelines, and toxic release inventory sites. There were no oil and gas production wells, crude oil pipelines, opencut mining sites, or toxic release inventory sites identified within the Study Area. At this time, none of the hazardous substances sites discussed below are expected to be “must avoid” locations or drivers of the ultimate project design.

Although it is unlikely that any of these sites will substantially impact projects forwarded from the study, if a project were to overlap one of these sites a soil investigation should occur. 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. A brief summary of the primary sites that fall within the Study Area that could overlap potential improvements follows below. Please see Exhibit 9 in Attachment 1 for approximate locations of the sites discussed below.

Underground Storage Tanks

A closed UST site is no longer in use. It is likely that the tanks, piping, and pumps have been removed from the ground. It is unlikely that a closed UST site will affect project development. An active UST site is a tank system that is currently in use and registered with the DEQ. These sites may include service stations, convenience stores, farms, or ranches. Project activities occurring near an active UST site may warrant additional soil/groundwater investigations or special provisions.

No active USTs were noted within the Study Area. Nine properties with closed USTs are noted to exist in close proximity to the Study Area. These nine properties containing a closed UST are shown in Table 3 below.

Table 3 Underground Storage Tanks (USTs) - Closed

Owner	Facility Inventory Database # (FID)	Address
Rainbow Electric Company	FID 07-01729	2220 River Drive North
GTA Feeds	FID 07-06406	River Drive North
Best Oil Distributing	FID 07-05852	5401 River Drive North
RO Speck Golf Course	FID 07-05555	2800 River Drive North
Giant Springs Hatchery	FID 07-04914	4801 Giant Springs North
McIntyre Construction	FID 07-06078	2100 9th Avenue North
Nelson Plumbing & Heating	FID 07-07825	3815 River Drive North
Western Maintenance Company	FID07-02589	3801 River Drive North
Anderson Steel Supply	FID 07-01229	3811 River Drive North

Source: NRIS 2015.

Because the USTs have been closed, some assessment has been performed at the site. Therefore the locations of these USTs represent a low potential that contamination to soils and groundwater will impact the project. No specific issues are known to exist at any of the sites unless they are included in the LUST list below.

Additional investigation regarding the precise locations of the USTs may need to take place depending on what improvement options are forwarded from this study.

Leaking Underground Storage Tanks

A resolved LUST site has been characterized and cleaned up, and there is limited risk to human health and the environment. It is unlikely that a resolved LUST site will affect project development.

An active LUST site has petroleum hydrocarbon concentrations in soil or groundwater that exceed DEQ cleanup criteria. The responsible party, with oversight from DEQ, may be conducting soil and/or groundwater investigations or cleanup activities at an active LUST site. If project activities occur near an active LUST site, further investigation and possible remediation may be necessary. This could create additional costs associated with a forwarded improvement.

There are three resolved LUST sites and one active LUST site within the Study Area. A list of the LUST sites follows:

- Best Oil Distributing (FID 07-05852*3397) – Petroleum release was confirmed on March 26, 1998 and resolved by DEQ on March 15, 2007. Because release was resolved by DEQ, it represents a low threat of contamination to soils and groundwater within the project study area.
- RO Speck Golf Course (FID 07-05555*995) – Petroleum release was confirmed on November 12, 1991 and resolved on May 4, 1992. Because the release was resolved by DEQ, it represents a low threat of contamination to soils and groundwater within the project study area.
- Giant Springs Hatchery (FID 07-04914*1012) – Petroleum release was confirmed on November 14, 1991. Soil removal has occurred. Although the release is still active, the facility is down the hill from River Drive North and groundwater has been demonstrated to flow north towards the Missouri River. Therefore Petroleum Release #1012 does not represent a threat to the project study area.
- Nelson Plumbing & Heating (FID 07-07825*2117) – Petroleum release was confirmed on December 22, 1993 and resolved on May 2, 1994. Because the release was resolved by DEQ, it represents a low threat of contamination to soils and groundwater within the project study area.

The LUST sites listed above represent a low potential that contamination to soil and groundwater will impact potential improvements forwarded from the Study.

Crude Oil Pipeline

The NRIS database, National Pipeline Mapping System database does not identify any oil pipelines in the Study Area. Due to legal protections regarding the terms of use and data sharing agreements up-to-date mapping data is not available. Data published in 1999 by Montana State Library for DEQ is available to be used as a general reference to find potential sources of

contamination from refined products and crude oil pipelines. It shows the general location of the refined products and crude oil pipelines in Montana from maps that were available at the time, and may not show all current pipelines. At project development, reevaluation should occur to identify if any potential conflicts may have arisen.

Hazardous Waste Handling Facilities

Two hazardous waste handling facilities are noted on the DEQ data mapper within the Study Area. The first hazardous waste handling facility is the US Rivet Mile Complex at 1700 River Drive North and the second is Hall Perry Equipment at 1245 38th Street North. Both facilities are inactive small quantity generators. It is unlikely that these facilities will impact project development.

Remediation Response Sites and Abandoned Mine Sites

The Anaconda Minerals Black Eagle Refinery is located along the north side of the Missouri River. This is a NPL site listed as a superfund site. Airborne arsenic was emitted from the smoke stake, and largely followed the predominant wind patterns from the southwest to the east-northeast. However, a 2007 EPA CERCLA Site Assessment sampled residences on the south side of the Missouri River adjacent to the Anaconda Minerals Refinery and detected elevated arsenic level from one residence. There is a potential that soil impacted by arsenic and lead may be encountered either from emissions from the Anaconda Minerals Black Eagle Refinery or the nearby Montana Silver Smelter which is discussed below.

The Montana Silver Smelter operated from 1889 and 1901 on the bluff above Giant Springs and the Missouri River. In 2003 DEQ identified and removed soil impacted by lead and arsenic within the current boundaries of the Montana Heritage State Park and Giant Springs State Park and Fish Hatchery. According to a 2003 Cultural Resource Inventory and Evaluation for the Montana Smelter Reclamation, prepared by Renewable Technologies, Incorporated (RTI), there was a large slag pile located on-site. The remaining slag pile was mitigated in 2003, but there is a lack of data regarding the transportation and disposition of the slag before that date. Although Cascade County held the slag dump parcel from the mid-1930's to mid-1970s, it is unknown if the slag was used for fill or road surfacing. It is possible that slag may be encountered during a major reconstruction of the nearby River Drive North or that contamination be encountered from smelter operations from either the Montana Silver Smelter or nearby Anaconda Minerals Black Eagle Refinery located north of the Missouri River that was discussed above.

3.0 Biological Resources

3.1 Vegetation

According to the Montana Natural Heritage Program (MNHP) 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 sections 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.

Noxious Weeds

Noxious weeds can degrade native vegetative communities, damage riparian areas, compete with native plants, create fire hazards, degrade agricultural and recreational lands, pose threats to the viability of livestock, humans, and wildlife, and are expensive to manage. Areas with a history of disturbance, like highway rights-of-way, are at particular risk of weed encroachment.

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. Table 4 below provides a detailed list of both the exotic and noxious plant species of Montana. Cascade County has weed management criteria in place that can be found on their website.

Reseeding of 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.

Table 4 Exotic and Noxious Weed Species in Cascade County

Common Name	Genus	Species	Noxious in MT	Exotic in MT
common bugloss	<i>Anchusa</i>	<i>officinalis</i>		x
common burdock	<i>Arctium</i>	<i>minus</i>		x
absinth wormwood	<i>Artemisia</i>	<i>absinthium</i>		x
hoary cress	<i>Cardaria</i>	<i>draba</i>	x	x
plumeless thistle	<i>Carduus</i>	<i>acanthoides</i>		x
musk thistle	<i>Carduus</i>	<i>nutans</i>		x
diffuse knapweed	<i>Centaurea</i>	<i>diffusa</i>	x	x
spotted knapweed	<i>Centaurea</i>	<i>maculosa</i>	x	x
black knapweed	<i>Centaurea</i>	<i>nigra</i>		x
Russian knapweed	<i>Centaurea</i>	<i>repens</i>	x	x
oxeye daisy	<i>Chrysanthemum</i>	<i>leucanthemum</i>	x	x
Canada thistle	<i>Cirsium</i>	<i>arvense</i>	x	x
bull thistle	<i>Cirsium</i>	<i>vulgare</i>		x
poison hemlock	<i>Conium</i>	<i>maculatum</i>		x
field bindweed	<i>Convolvulus</i>	<i>arvensis</i>	x	x
clustered dodder	<i>Cuscuta</i>	<i>approximata</i>		x
houndstongue	<i>Cynoglossum</i>	<i>officinale</i>	x	x
field horsetail	<i>Equisetum</i>	<i>arvense</i>		
leafy spurge	<i>Euphorbia</i>	<i>esula</i>	x	x
black henbane	<i>Hyoscyamus</i>	<i>niger</i>		x
kochia	<i>Kochia</i>	<i>scoparia</i>		x
dalmatian toadflax	<i>Linaria</i>	<i>dalmatica</i>	x	x
scentless chamomile	<i>Matricaria</i>	<i>maritima</i>		x
wild proso millet	<i>Panicum</i>	<i>miliaceum</i>		x
reed canarygrass	<i>Phalaris</i>	<i>arundinacea</i>		x
Japanese knotweed	<i>Polygonum</i>	<i>cuspidatum</i>		x
meadow sage	<i>Salvia</i>	<i>pratensis</i>		x
perennial sowthistle	<i>Sonchus</i>	<i>arvensis</i>		x

Source: University of Montana, Invaders Database System 2015.

3.2 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 but not limited to are white-tail and mule deer, coyote, red fox, porcupine, raccoon, striped skunk, muskrat, Richardson's ground squirrel, deer mouse, and meadow vole. 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.

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. The carcass locations can be seen on Exhibit 10 in Attachment 1. With the urban setting of the Study Area, actual wildlife crossing structures most likely would not be warranted.

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 (see Exhibit 5 in Attachment 1) and Table 5 below. The species tabulated below are the most commonly occurring fish species according to the Montana Fish Information System (MFISH) database (report generated April 2015). If impacts to the Missouri River will occur from future improvements, potential impacts to aquatic species will be need to be considered.

Table 5 Fisheries Data

Named Stream within Study Area	Fish Species Commonly Occurring within Study Area	Rare Fish Species Occuring within Study Area
Missouri River	Burbot, common carp, longnose sucker, longnose dace, rainbow trout, walleye, and white sucker.	Black bullhead, brown trout, fathead minnow, flathead chub, stonecat, mottled sculpin, mountain whitefish, pumpkinseed, and yellow perch.

Source: FWP Montana Fisheries Information System (MFISH), 2015.

Birds

The MNHP Natural Heritage Tracker database indicates a variety of birds have been documented with the potential to occur and nest in the Study Area. These species include representative songbirds, birds of prey, waterfowl, owls, and shorebirds. Exhibit 11 (Attachment 1) shows the species of concern bird distribution (Bald Eagle) that are visible in the Study Area. The Study Area provides marginal habitat for migratory birds which may nest in the mature trees or move through the area as seasonal migrants. Please refer to MNHP for exact locations of other bird species occurring in the Study Area.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). Under this strict liability law, it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Direct disturbance of a nest occupied with birds or eggs is prohibited under the law. The

destruction of unoccupied nests of eagles; colonial nesters such as cormorants, herons, and pelicans; and some ground/cavity nesters such as burrowing owls or bank or cliff swallows may also be prohibited under the MBTA.

There are two bald eagle nests which occur within the general proximity of the corridor, with one of the half-mile buffer areas crossing into the Study Area. The Study Area is not typical golden eagle habitat, so presence of golden eagle nests is unlikely. Bald and golden eagles are protected under the MBTA and managed under the Bald and Golden Eagle Protection Act, which prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

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. As shown on the SOC map (Exhibit 11 in Attachment 1) 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 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. The CAPS system was consulted to provide a general overview of the Study Area which is summarized in the following paragraph.

The Terrestrial Conservation Species layer represents the cumulative expected occurrence of 85 of Montana's vertebrate species. Species inclusion was based on the State Species of Concern (SOC) list. The Study Area is rated as a Class 1. The Terrestrial Species Richness layer represents species richness of all native land-based species in Montana, including amphibians, reptiles, birds, and mammals. Species included are found year round or breed in the state. The metric presented is the average number of species associated with all cover types (habitats) in each section. The project corridor rated as a Class 1 for terrestrial species richness. The Terrestrial Game Quality layer depicts areas considered valuable to 12 native game species and their specific habitat requirements. Terrestrial Game Quality rates as Class 3 throughout the project corridor.

The Missouri River is rated as Class 1 for Aquatic Connectivity in the corridor. The Missouri River is rated as Class 2 for Native Species Richness in the corridor. The Missouri River is rated as a Class 2 for Game Fish Quality.

Specific results and general recommendations for the study area can be located at <http://fwp.mt.gov/gis/maps/caps/>. The online CAPS mapping tool provides FWP general recommendations and recommendations specific to transportation projects for both terrestrial and aquatic species and habitat. These recommendations can be applied generically to possible future improvements carried forward from the study.

3.3 Threatened and Endangered Species

The USFWS maintains the federal list of threatened and endangered (T&E) species. Species on this list receive protection under the Endangered Species Act (ESA). 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 (see Table 6 below).

Table 6 Threatened and Endangered Species in Cascade County

Species	Status	Habitat
Sprague’s Pipit	Candidate	Short-grass prairie
Whitebark Pine	Candidate	Subalpine forests
Red Knot	Threatened	Variable-meadows, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats
Canada Lynx	Threatened, and Critical Habitat	Subalpine forests

Source: USFWS, 2015.

According to the MNHP - Map Viewer database, which records and maps documented observations of species in a known location, none of them overlap into the Study Area. 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.

If improvements are forwarded from the study, an evaluation of potential effects to T&E species will need to be completed during the project development process. As federal status of protected species changes over time, reevaluation of the listed status and afforded protection to each species should be completed prior to issuing a determination of effect relative to potential impacts.

3.4 Species of Concern

Montana species of concern (SOC) are native plants or native animals breeding in the state that are considered to be “at risk” due to declining population trends, threats to their habitats,

and/or restricted distribution. Designation of a species as a Montana SOC is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to direct limited resources to priority data collection needs and address conservation needs proactively. Each species is assigned a state rank that ranges from S1 (greatest concern) to S5 (least concern). Other state ranks include SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). Modifiers, such as B (breeding) or N (non-breeding), may follow state ranks.

A search of the MNHP species of special concern database in March 2015, revealed three SOC in Cascade County that have the potential to occur and breed in the Study Area based on presence of suitable habitat. For more information and a map depicting distribution, please see Table 7 below and Exhibit 11 in Attachment 1.

Table 7 Species of Concern

Common Name	Scientific Name	State Rank	Occurrence Remarks	Exhibit
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S4	There is a nest site located approximately 0.05 miles north of the roadway across the Missouri River.	11
Plains Spadefoot	<i>Spea bombifrons</i>	S3	A record from 1992 was collected from the area near the railroad tracks south of the roadway.	11
Many-headed sedge	<i>Carex synchnocephala</i>	S3	There is one historic record within the boundaries of the corridor study. This record is from 1891; this species is not expected to occur in the project area due to development of Great Falls since 1891.	11

Source: MNHP, 2015.

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.

4.0 Social and Cultural Resources

4.1 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 United States Civil Rights Act of 1964, as amended (USC 2000(d)) and EO 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. Table 8 below summarizes 2013 population and demographic data for Great Falls, Cascade County and includes Montana for comparison.

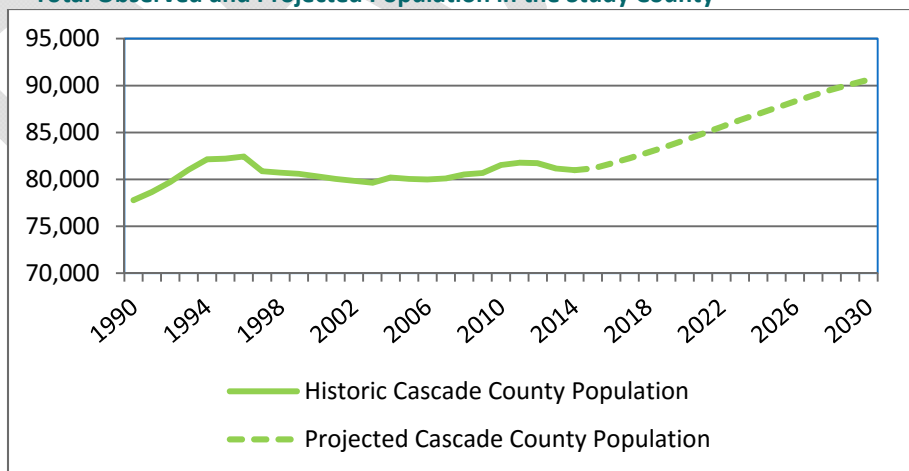
Table 8 2013 Census Demographics Data for Cascade County

		Great Falls	Cascade County	Montana
Population		59,351	82,384	1,014,864
Ethnic Characteristics	White	88.5%	89.1%	89.5%
	Black or African American	1.1%	1.6%	0.6%
	American Indian and Alaska Native	5.0%	4.6%	4.3%
	Asian	0.9%	0.9%	0.8%
	Hispanic or Latino	3.4%	3.9%	3.3%

Source: US Census Bureau, 2013.

Cascade counties population ethnicity 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 Air Force Base (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.

Figure 1 Total Observed and Projected Population in the Study County

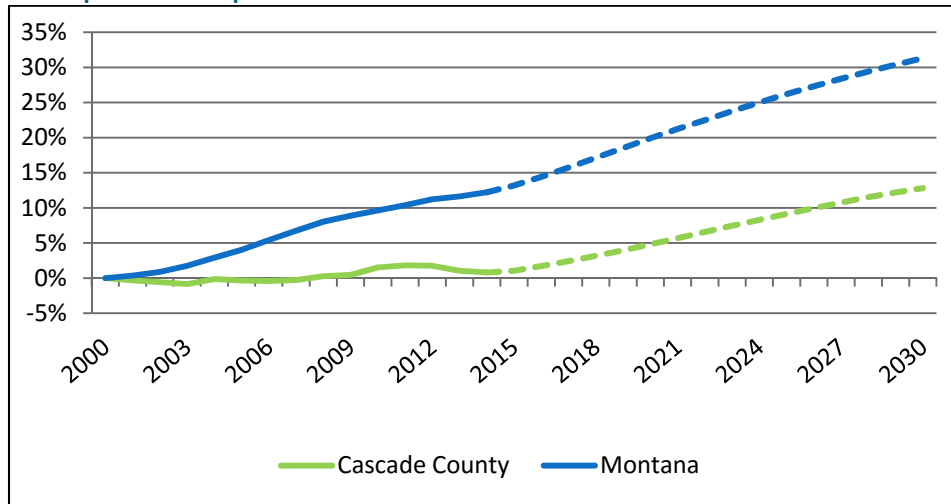


Source: Montana Department of Commerce, eREMI data.

According to the United States 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. Figure 1 on the previous page depicts

historic and projected population (all population projections are based on Regional Economic Models, Inc. (eREMI) forecasts of net migration and natural growth) of Cascade County.

Figure 2 Population Comparison 2000 - 2030



Source: Montana Department of Commerce, eREMI data.

Over the last 15 years, Cascade County has seen slight increases and decreases in population (Figure 1 previous page). The population is projected to grow over the next fifteen years, but at rate less than Montana as a whole (Figure 2 above). The City of Great Falls past trends in population growth indicate this may be a generous projected growth. A large part of the City of Great Falls economy relies on Malmstrom Air Force Base that 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.

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. Table 9 below illustrates the age distribution for Great Falls, Cascade County and Montana.

Table 9 Age Distribution

Age Distribution			
	Great Falls	Cascade County	Montana
Under 18	22.5%	22.7%	22.1%
18-64	60.9%	60.9%	61.7%
65 and Over	16.6%	16.4%	16.2%

Source: US Census Bureau - ACS and 2010 Census.

Table 10 on the following page compares the Cascade County, Montana, and national employment numbers as of December 2014. As seen in the table below, Cascade County’s labor market has shown strong performance as evidenced by its 3.7% 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.

Table 10 Non – Seasonally Adjusted Employment Data

Location	Labor Force	Employed	Unemployed	Unemployment Rate
United States	155,521,000	147,190,000	8,331,000	5.4%
Montana	514,804	492,841	21,963	4.3%
Cascade County	41,376	39,850	1,526	3.7%

Source: December 2014 data –MT Dept. of Labor and Industry.

Table 11 below displays employment for Cascade County by industry, according to the US Census Bureau. As shown in Table 11, Educational Services, health care and social assistance industry accounts for 23.8% of employment in Cascade County, which is slightly above the Montana average of 22.8%. 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.

Table 11 County Employment by Industry (2009-2013)

Industry	Total Estimate			
	Cascade County		Montana	
Agriculture, forestry, fishing, and hunting	1,015	2.8%	34,395	7.2%
Construction	2,965	8.1%	37,617	7.9%
Manufacturing	1,252	3.4%	22,278	4.7%
Wholesale trade	994	2.7%	11,647	2.4%
Retail trade	4,847	13.2%	57,294	12.0%
Transportation and warehousing, and utilities	1,982	5.4%	23,539	4.9%
Information	620	1.7%	8,771	1.8%
Finance and insurance, and real estate and rental and leasing	2,669	7.3%	26,771	5.6%
Professional, scientific, and management , and administrative and waste management services	2,868	7.8%	39,604	8.3%
Educational Services, health care and social assistance	8,765	23.8%	108,670	22.8%
Arts, entertainment, recreation, and accommodation and food services	4,328	11.8%	54,179	11.4%
Other services, except public administration	1,805	4.9%	21,844	4.6%
Public Administration	2,665	7.2%	30,406	6.4%
Civilian employed population (16 years and over)	36,775	100%	477,015	100%

Source: US Census Bureau, 2009-2013 5-Year American Community Survey.

Median household income for Cascade County is \$44,963 and the City of Great Falls is \$43,822 both lower than state average of \$46,230. The poverty level is 14.9% in Cascade County, which is slightly lower than the state average of 15.2%, yet City of Great Falls is slightly higher at 16.5%. 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% and minority population of 16.43%, both of which are higher than City of Great Falls average.

In summary, Cascade County's economy has only moderate growth projected in the near future. With the River Drive corridor study area median income below and the minority population being higher than the Montana average further investigation should take place to determine the possibility of low-income and/or minority person(s) being disproportionately isolated, displaced, or otherwise subjected to adverse effects by any forwarded improvements on a project-by-project basis.

4.2 Planning Documents

The available growth and planning documents for the City of Great Falls and Cascade County were reviewed. The City of Great Falls Growth Policy Update 2013, Missouri River Urban Corridor Plan 2004, and Great Falls Area Long Range Transportation Plan - 2014 were reviewed for pertinent topics that should be taken into consideration. The City of Great Falls Growth Policy Update 2013 discusses that River Drive North between 15th Street North and 25th Street North exceeds optimal levels of traffic volumes. The Missouri River Urban Corridor Plan 2004 in summary provides a vision of what Great Falls should strive for at a high level, nothing specific to the Study Area. Several items were noted in the Great Falls Long Range Transportation Plan (2014 Update) that should be taken into consideration during the corridor study.

As possible improvements are identified through the corridor study process, the continued validity of the needs identified in the local plans should be investigated. In addition, a review for updated planning documents should take place during potential design of projects.

4.3 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 are the City of Great Falls, FWP, and MDT. The City of Great Falls land is the Golf Course 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 Commercial land use is mostly on the west half and far east end of the Study Area. Land ownership maps for the Study Area are provided in Exhibit 12 (in Attachment 1).

The majority of the land use within the Study Area is either industrial or commercial. These properties are physically close to the actual River Drive North road, which does not leave lots of space for potential improvements. Depending on potential improvements, the need to purchase Right-of-Way could arise. If the need to purchase Right-of-Way presents itself to allow for possible improvements to be completed this will create additional costs and time impacts to a forwarded project. 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.

4.4 Recreational Resources

Cascade County and 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 but not limited to 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. Prior to approving a project that “uses” a Section 4(f) resource, FHWA must find that there is no prudent or feasible alternative that completely avoids the 4(f) resource. “Use” can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a Section 4(f) resource. Constructive “use” can also occur when a project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are “substantially impacted.” Potential effects on recreational use would need to be considered in accordance with Section 4(f) if improvements are forwarded from this study.

From a high level evaluation, there appears to be recreational-related potential 4(f) resources within the buffer of 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. In addition, the River’s Edge Trail parallels the corridor on the north side of River Drive North. The Caboose Trailhead is a pullout on the west end of the Study Area that has two rail cars and picnic tables set on an outlook. This pullout is available for the public to use and access the River’s Edge Trail. Both the River’s Edge Trail and the Caboose Trailhead are located on City of Great Falls property and the City of Great Falls is involved with the maintenance. The recreational resources potentially protected under Section 4(f) are shown on Exhibit 13 in Attachment 1. 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.

The Black Eagle Historical Marker is currently situated at a pullout along the corridor allowing the public access to view the historical marker, although not a 4(f) resource it does need to be replaced if impacted. The Centene Stadium is owned by the City of Great Falls and home to the Great Falls Voyagers minor baseball league team. In exchange for the City of Great Falls performing updates and maintenance to the park, the three local high school teams are allowed to practice and play at the Centene Stadium, as long as it does not interfere with the Voyagers schedule. At the time potential future improvements are forwarded to a project, reevaluation of possible 4(f) resources should take place. If future 4(f) resources are discovered, efforts should be made with projects advanced from the study to avoid adverse impacts to or right of way acquisitions from these community recreational resources.

The National Land and Water Conservation Fund Act (LWCFA), or Section 6(f), was enacted to preserve, develop, and assure the quality and quantity of outdoor recreation resources. Section 6(f) protection applies to all projects that impact recreational lands purchased or improved with LWCFA funds. The Secretary of the Interior must approve any conversion of LWCFA property to a use other than public, outdoor recreation. According to FWP LWCFA Sites by County, there is one Section 6(f) resource within the buffer of the Study Area. This 6(f) resource is Giant Springs State Park. LWCFA funds were utilized in both the acquisition and development of the state park

lands. FWP has indicated that the entire property has LWCFA 6(f) protection. The property extends inside the buffer zone of the study area. 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. There is a Section 6(f) resource south of the Study Area, Great Falls North Kiwanis Park. Additionally, on the north side of the Missouri River is Art Higgins Memorial Park also a known Section 6(f) resource. Although both these Section 6(f) resources are close to the Study Area, there should not be an impact to them from potential projects forwarded from the corridor study. If improvement options are forwarded from this corridor study, a reevaluation of Section 6(f) resources, including coordination with FWP, should take place to confirm the accuracy/completeness of the literature and determine if any new Section 6(f) resources are present. As general guidance, converting 6(f) resources to a non-recreational purpose can be a difficult and time-consuming task and should be avoided if practicable.

4.5 Cultural Resources

For federally funded transportation projects, a cultural resource survey must be conducted for the area of potential effect as specified in Section 106 of the National Historic Preservation Act (NHPA) (36 CFR 800). Section 106 requires federal agencies to “take into account the effects of their undertakings on historic properties.” The purpose of the Section 106 process is to identify historic and archaeological properties that could be affected by the undertaking; assess the effects of the project; and investigate methods to avoid, minimize, or mitigate adverse effects on historic properties. These historic resources properties are also generally afforded protection under Section 4(f) of the Transportation Act.

A file search of the proposed survey area through the Montana State Historic Preservation Office revealed four historic properties sites located within sections 4, 5, and 6, T20N, R4E near the existing River Drive North alignment. These four properties have been previously recorded and NRHP status established. The properties are summarized in Table 12 and shown on Exhibit 14 in Attachment 1. As shown in the exhibit, the properties are near to but not within the Study Area.

Table 12 Known Cultural Resources and Historical Properties

Site	Site No.	Sec.	Tsp	Rge	NRHP Eligible
Abandoned Milwaukee Road Railroad Grade	24CA0264	Multiple	20N	4E	Eligible
Black Eagle Falls Hydroelectric Plant Historic District	24CA0288	6	20N	4E	Eligible
Milwaukee Road RR/25 th Street North Overpass	24CA0331	6	20N	4E	Eligible
Great Northern Railway	24CA0371	5	20N	4E	Eligible

Source: MSHPO 2015.

In addition to the known historic resources, other potentially historic resources exist in the Study Area. An examination of the Montana Cadastral Survey information for the designated corridor indicates that at least 10 historic-age properties face onto River Drive North between 15th Street North and 25th Street North listed in Table 13 below. These resources are depicted as “unrecorded historic site” on Exhibit 14 (Attachment 1). Nine are commercial properties that were constructed between 1950 and 1962. In addition to the buildings, features that may be

associated with the Works Progress Administration in the 1930s are located adjacent to Centene Stadium at the intersection of River Drive North and 25th Street North.

Table 13 Properties of Historic-age

Site	Address	Sec.	Tsp	Rge	Year Built
KOIS Brothers Equipment	1610 River Drive N	6	20N		1957
Big Stack Mobile Home Park	2010 River Drive N	6	20N		1962
City Parks & Rec. Warehouse	2110 River Drive N	6	20N	4E	1956
Rainbow Electric	2220 River Drive N	6	20N	4E	1955
Nygaard Auto Body	2222 River Drive N	6	20N	4E	1954
Warehouse	2226 River Drive N	6	20N		1950
Warehouse	2304 River Drive N	6	20N	4E	1955
Auto Equipment Service Garage	2322 River Drive N	6	20N	4E	1956
Service Master	2400 River Drive N	6	20N	4E	1960
WPA Features	25 th St. N & River Drive N	5	20N	4E	c. 1936
Centene Stadium	1015 25 th St N	5	20N	4E	1940
Eagle Falls Golf Club	1025 25 th St. N	5	20N	4E	1953

Source: Montana Cadastral Survey 2015.

With the main intent of the corridor study to identify potential projects along River Drive North, the cultural resource survey investigation needed only include historic-age properties located adjacent to River Drive North. Direct and indirect impacts (such as visual, noise, and access impacts) to eligible or listed properties would need to be considered if improvements options are carried forward. If a project is forwarded from the Corridor Study, 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.

4.6 Noise

Evaluation of traffic noise may need to occur for any future improvements in the Study Area. Noise analysis is necessary for "Type I"-classified projects. A Type I project includes a substantial shift in the horizontal or vertical alignments, increasing the number of through lanes, providing passing lanes, or increasing traffic speed and volume.

Type I projects require a detailed noise analysis, consistent with FHWA requirements and MDT policy, which includes measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes. If noise levels approach or substantially exceed noise abatement criteria for the project, noise abatement measures may be necessary. A number of possible abatement measures available for consideration include but are not limited to the following:

- alternating the horizontal or vertical alignment;
- constructing noise barriers such as sound walls or earthen berms; and/or

- decreasing traffic speed limits.

Noise abatement measures must be considered reasonable and feasible prior to implementation and supported by the affected public.

The Study Area has sensitive noise receptors throughout the corridor that must be considered. The following items are known noise receptors that will need evaluation during any potential improvements along this corridor. The River's Edge Bicycle and Pedestrian Trail is located immediately north of the majority of River Drive North corridor. In addition, River Drive North is adjacent to the Veterans Memorial Park, the Eagle Falls Golf Club, the Bob Speck Municipal Golf Course, the Centene Stadium, and the Giant Springs State Park, which contains the Lewis and Clark Interpretive Center and the Giant Springs Fish Hatchery. Therefore, the majority of the corridor will qualify as Active Category C for the Noise Abatement Criteria (NAC). Please refer to the table in Attachment 3 for the allowable NAC for Category C.

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.

4.7 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.

Cascade County is located in central Montana. The corridor is a highly used east-west road that connects 15th and 38th Avenues. On the north side of the Study Area is the River's Edge Trail, which allows the public to walk or bike along the edge of the Missouri River. The historic marker at approximately RP 4.6 describes the history of Black Eagle. Pullouts exist along the corridor allowing views of Black Eagle Falls.



Black Eagle Falls, Photo by MDT

Along with a view of Black Eagle Falls, sandstone outcroppings are visible along the cliffs, which extend from River Drive to the Missouri River. One of the pullouts is the Caboose trailhead that has two railroad cars and several picnic tables for public use.

Another visually appealing aspect is the Veterans Memorial Park, which has a wall of tiles dedicated to those that have served in any branch of the US military.

These features lead to a visually appealing setting that should be considered in future improvements forwarded from this study.



Veteran's Memorial Park, photo by MDT

5.0 Conclusion

This environmental scan report identifies physical, biological, social, and cultural resources within the Study Area that may be affected by potential future improvements in the Primary 205 corridor Study Area.

Project-level environmental analysis would be required for any improvements forwarded from this study. Information contained in this report may be used to support future NEPA/MEPA environmental documentation.

6.0 References

- About Education. (n.d.). "Stream Order, A classification of the Rank of Streams and Rivers" website. Accessed April 2015 from:
<http://geography.about.com/od/physicalgeography/a/streamorder.htm>
- Big Sky Economic Development. (n.d.). "Big Sky Economic Development" website. Accessed March 2015 from: <http://www.bigskyeconomicdevelopment.org/index.php>
- Cascade County. (n.d.). "Public Works" website. Accessed May 2015 from:
<http://departments.cascadecountymt.gov/publicworks>
- City of Great Falls. (n.d.). "Public Works" website. Accessed May 2015 from:
<http://www.greatfallsmt.net/publicworks>
- City of Great Falls, (n.d.). "Park and Recreation" website. Accessed May 2015 from:
<http://www.greatfallsmt.net/recreation>
- Cubit. (n.d.). "Montana Demographics" website. Accessed April 2015 from:
<http://www.montana-demographics.com/>
- DEQ. (n.d.). Clean Water Act Information Center. Retrieved April 2015 from:
<http://deq.mt.gov/wqinfo/CWAIC/default.mcp>
- DEQ. (n.d.). Montana Department of Environmental Quality. DEQ Remediation Division – Hazardous Waste Site Cleanup Bureau, Petroleum Release Section, LUST database. Retrieved April 2015 from: <http://deq.mt.gov/LUST/LUSTSites.mcp>
- DEQ. (n.d.). Montana Department of Environmental Quality. DEQ Remediation Division – Hazardous Waste Site Cleanup Bureau, Petroleum Release Section. DEQ DST Mapping Service containing locations for Hazardous Waste Handlers, Response Sites, Open cut Permits, and Underground Storage Tanks. Accessed in April 2015 from:
<http://svc.mt.gov/deq/wmadst/>
- DEQ. (n.d.). Montana Department of Environmental Quality. DEQ Planning Division – Air Quality Nonattainment Information. Accessed in April 2015 from:
<http://deq.mt.gov/AirQuality/Planning/AirNonattainment.mcp>
- DEQ. (n.d.). Montana Department of Environmental Quality. Montana Public Water System Sources. Retrieved in March 2015 from:
http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?di d=%7bCDC1702D-810F-4055-B956-ED78662BA1F5%7d
- DEQ Mine Waste Cleanup Bureau (2013). Montana Smelter Reclamation: A Cultural Resource Inventory and Evaluation
- DNRC. (n.d.). Montana Department of Natural Resources and Conservation Water Resources Division. Montana Water Rights. Retrieved in March 2015 from:

http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?di d={0303D17E-BD0F-4180-A345-359C61E586F0}

DNRC. (1961). Water Resources Survey – Cascade County, Montana. Retrieved May 2015 from: http://dnrc.mt.gov/divisions/water/water-rights/docs/survey-books/cascadewrs_1961.pdf

EPA (2011). HRS Document Record; ACM Smelter and Refinery

FEMA. (n.d.). Federal Emergency Management Agency. Digital Flood Hazard layers of Flood Insurance Rate Maps '30111' eff. 11/6/2013 accessed through ESRI's web map application. Retrieved in March 2015 from: <https://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cbe088e7c8704464aa0fc34eb99e7f30>

FEMA. (n.d.). FEMA Digital Flood Insurance Rate Map (DFIRM) for Cascade County and Unincorporated areas. Accessed May 2015 from: http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_30013C0345E.txt

FWP. (n.d.). MFISH Data. Retrieved March 2015 from: <http://fwp.mt.gov/fishing/mFish/default.html>

FWP. (n.d.). Recreation Data. Retrieved March 2015 from: <http://fwp.mt.gov/recreation/visitFwpSite.html>

FWP. (n.d.). Montana Fish, Wildlife, and Parks. Wildlife Distribution Datasets. Retrieved in March 2015 from: <http://fwp.mt.gov/doingBusiness/reference/gisData/dataDownload.html>

FWP. (n.d.). Recreation Data. Retrieved March 2015 from: <http://fwp.mt.gov/fishAndWildlife/conservationInAction/crucialAreas.html>

Landslide Technolgy. (2005) Rockfall Hazard Classification and Mitigation System. Accessed May 2015 from: http://www.mdt.mt.gov/other/research/external/docs/research_proj/rockfall/final_report.pdf

MBOG. (n.d.) Montana Board of Oil and Gas. Mapping service containing locations of natural gas and petroleum exploration and extraction wells. Accessed in April 2015 from: <http://bogc.dnrc.mt.gov/WebApps/DataMiner/>

MBMG. (n.d.). GWIC Online Overview of Cascade County. Retrieved April 2015 from: <http://mbmoggwic.mtech.edu/sqlserver/v11/reports/CountyStatistics.asp?MTCounty=CASCADE>

MBMG.(n.d.). Montana Bureau of Mines and Geology. Montana Groundwater Information Center Water Well Data. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?di d={B40FCBD4-DA34-483A-A8C9-F9C1E95F7A21}

- McArthur, Seth. (2015). Fish, Wildlife, and Parks. LWCFR phone discussion on November 10, 2015.
- MDT. (n.d.). Montana Department of Transportation. Animal Carcass Dataset. Retrieved in March 2015 from internal dataset.
- MDT. (n.d.). Montana Department of Transportation. Cultural Resources identified from MDT Archaeologist.
- MDT. (n.d.). "MDT Stormwater Information" page. Website accessed March 2015 from: <http://www.mdt.mt.gov/pubinvolve/stormwater/>
- MDT.(2015). "Social and Economic Conditions: Primary 205"
- MDT.(2013). "Montana Rail System" pdf. Webpage accessed April 2015 from: <http://www.mdt.mt.gov/travinfo/docs/railmap.pdf>
- MNHP. (n.d.). Elemental Occurrences Database. Retrieved March 2015 from: <http://mtnhp.org/Tracker/NHTMap.aspx>
- MNHP. (n.d.). Montana Ecological Systems - Landcover Report – Cascade County. Retrieved March 2015 from: <http://mtnhp.org/mapviewer/>
- MNHP. (n.d.). Montana Field Guide Database. Retrieved March 2015 from: <http://fieldguide.mt.gov/>
- MTNHP. (n.d.). Montana Natural Heritage Program. Montana Field Guide Dataset. Species Occurrence Data for Animal Species of Concern in Montana. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={7451E737-F4E1-4B68-8FD5-0F09DA83E20A}
- MTNHP. (n.d.). Montana Natural Heritage Program. Montana Wetland and Riparian Framework. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={f57e92f5-a3fa-45b2-9de8-0ba46bbb2d46}
- MNHP. (n.d.). Montana Natural Heritage Program Web Service – Nonvascular Plants, Vascular Plants, Fish, Mammals, Reptiles, Invertebrates, Amphibians, Birds. Retrieved March 2015 from: <http://mtnhp.org/default.asp>
- MNHP. (n.d.). Montana Public Lands and Private Conservation Lands. Retrieved April 2015 from: http://mslapps.mt.gov/Geographic_Information/Maps/Land_Ownership/LandOwnership_Detail.aspx?Map=Greatfalls
- Mokhtari, Mosoume., and Dehghani, Masoud. (2012). Swell-Shrink Behavior of Expansive Soils, Damage and Control. EJGE Vol. 17.

- Montana Department of Labor & Industry. (n.d.). Homepage of website. Accessed March 2015 from: <http://dli.mt.gov/>
- Montana State Library. (1999). Montana Refined Products and Crude Oil Pipelines Geospatial Data. Accessed April 2015 from: http://maps2.nris.mt.gov/mapper/metadata/layer_1318.html
- MSL. (1999). Montana State Library. Oil pipelines from 1999 in accordance with the Montana DEQ. Pipelines used for reference purposes only. Retrieved in March 2015 from: <http://maps2.nris.mt.gov/mapper/MapWindow.asp?Profile=2469732&Cmd=Build+Reports> Additional metadata can be retrieved from: http://maps2.nris.mt.gov/mapper/metadata/layer_1318.html
- MSL. (n.d.). Montana State Library. Montana Cadastral Framework. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={35524afc-669b-4614-9f44-43506ae21a1d}
- MSL. (n.d.). Montana State Library. Montana Geographic Names Framework (GNIS) for 4(f) and 6(f) locations. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={0c57ebe2-f8e8-4d55-b159-ab3202898956}
- MSL. (n.d.). Public and Private Land Ownership Maps – Great Falls North, Montana. Accessed June 2015 from: http://ftp.geoinfo.msl.mt.gov/Documents/Maps/Collections/100K_PublicLand/2014/100Kpub2014_GREAT_FALLS_NORTH.pdf
- MT DOC CEIC. (n.d.). Montana County Population Projections. Accessed March 2015 from: http://ceic.mt.gov/Documents/PopulationProjections/EMRI/StateTotals/eREMI_MT_CountyComparisons_TotalPopulation_April2013.pdf
- NHD. (n.d.). National Hydrography Dataset. Retrieved in March 2015 from: http://mslapps.mt.gov/Geographic_Information/Data/DataList/datalist_Details.aspx?did={db6c41bd-1f29-48ab-b4aa-2c1890f317e6}
- NPMS. (n.d.). National Pipeline Mapping System website. Accessed April 2015 from: <https://www.npms.phmsa.dot.gov/PublicViewer/composite.jsf>
- NPMS. (n.d.). National Pipeline Mapping System. Mapping service depicting the locations of petroleum pipelines. Accessed in April 2015 from: <https://www.npms.phmsa.dot.gov/PublicViewer/>
- NRCS.(n.d.). Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database. Accessed through ESRI's SSURGO Data Downloader in March 2015 for Cascade County: <http://www.arcgis.com/home/item.html?id=a23eb436f6ec4ad6982000dbaddea5ea>

- NRHP. (n.d.). Historic Sites in Cascade County. Retrieved March 2015 from:
<http://www.nationalregisterofhistoricplaces.com/mt/cascade/state.html>
- NRIS. (n.d.). Digital Atlas of Montana. Mapping service depicting locations for Toxic Release Inventory Sites, Landfills, MBMG and DEQ abandoned mines, and crude oil pipelines. Accessed in April 2015 from: <http://maps2.nris.mt.gov/mapper/.%5C>
- NRIS. (2005). Abandoned Mines DEQ Mine Waste Cleanup Bureau, Abandoned Mines Section Database. Accessed April 2015 from:
http://nris.mt.gov/nsdi/nris/deq_abandoned_mines.xml
- SHPO. (n.d.). Site Reports. Retrieved March 2015.
- Smith, R.B, and Sbar, M.L. (1974). Contemporary tectonics and seismicity of the western United States with emphasis on the Intermountain Seismic Belt. Geological Society of America Bulletin, v. 85, no. 2, p. 1205-1218.
- Stickney, M.C., Haller, K.M., and Nchette, M.N. (2000). Quaternary Faults and Seismicity in Western Montana. Montana Bureau of Mines and Geology, Special Publication No. 114.
- Tim1965, (n.d.). "Great falls of missouri river". Licensed under Public Domain via Wikimedia Commons –Downloaded May 2015 from:
http://commons.wikimedia.org/wiki/File:Great_falls_of_missouri_river.jpg#/media/File:Great_falls_of_missouri_river.jpg
- USACE. (n.d.). Section 10 Waterways Factsheet. Accessed June 2015 from:
<http://www.nwo.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/2034/Article/487620/section-10-waterways.aspx>
- USCB. (2010). American Fact Finder. Accessed March 2015 from:
<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
- USDA. (n.d.). Natural Resource Inventory System SSURGO Soil Mapping Units. Retrieved August 2014 from:
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627
- USDA. (n.d.). Web Soil Survey. Retrieved March 2015 from:
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- USFWS. (n.d.). National Wetlands Inventory. Retrieved March 2015 from:
<http://www.fws.gov/wetlands/>
- USFWS. (n.d.). Threatened and Endangered Species by Montana County. Retrieved March 2015 from:
http://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species/countylist.pdf

USGS. (n.d.). Geographic Information Retrieval and Analysis System Files. Retrieved March 2015 from: <http://nris.mt.gov/nsdi/nris/LU25.html>.

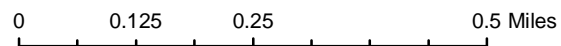
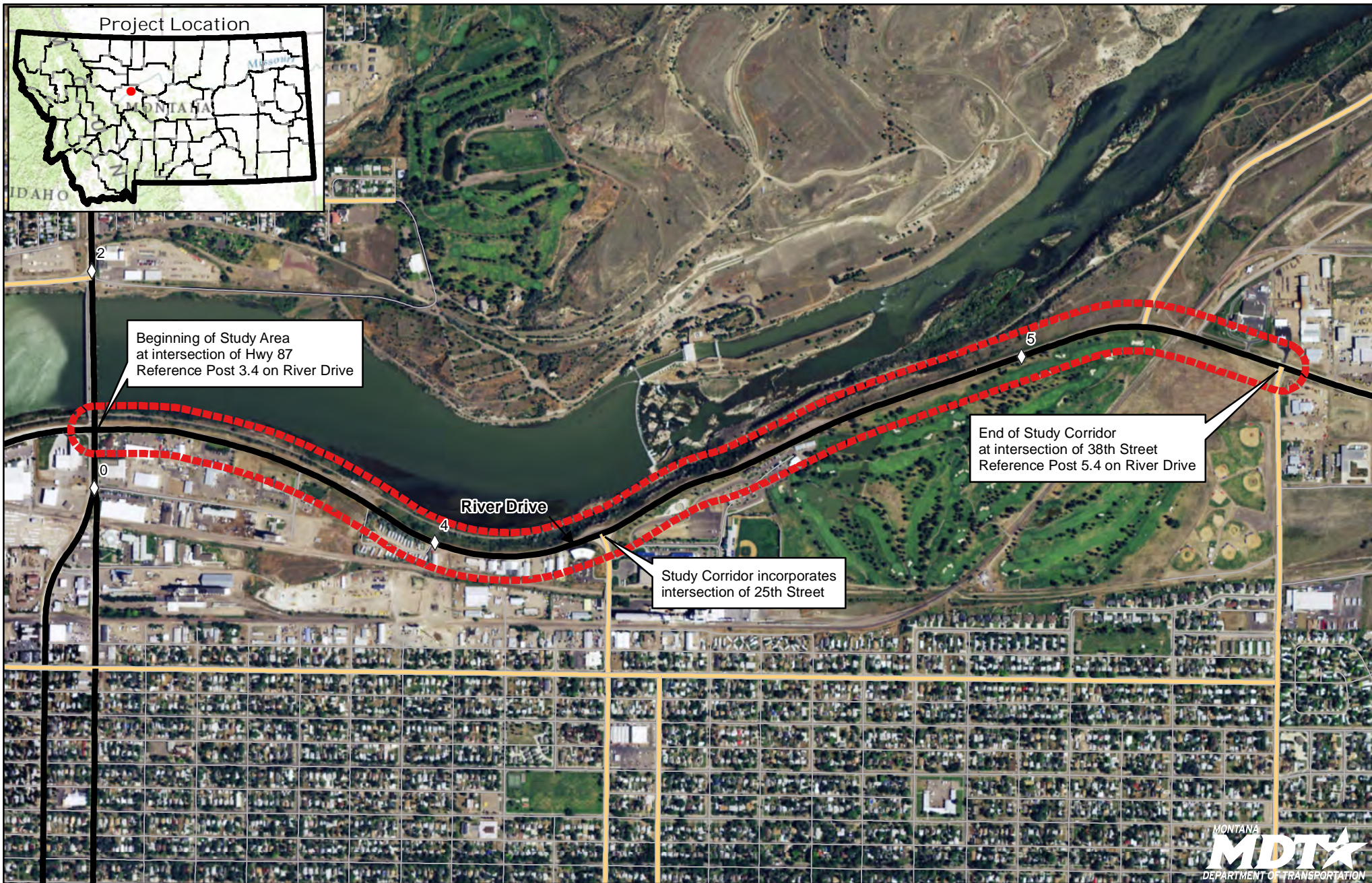
Vuke, S.M., Lonn, J.D., Berg, R.B., and Schmidt, C.J., 2014, Geologic map of the Great Falls North 30' x 60' quadrangle, central Montana: Montana Bureau of Mines and Geology Open-File Report 459, 13 p., 1 sheet, scale 1:100,000. Retrieved in June 2015 from: http://www.mbm.mtech.edu/mbmgcat/public/ListCitation.asp?selectby=series&series_type=MBMG&series_number=459&series_sub=&

Wikipedia. (n.d.). Centene Stadium. Accessed June 2015 from: https://en.wikipedia.org/wiki/Centene_Stadium

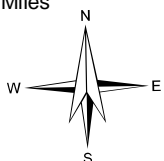
DRAFT

Attachment 1

Exhibits



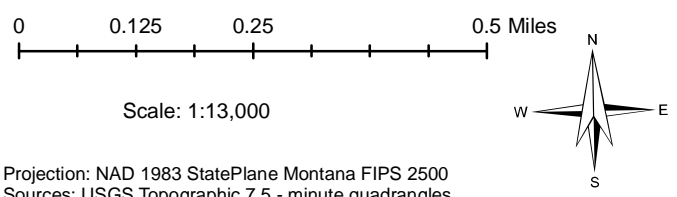
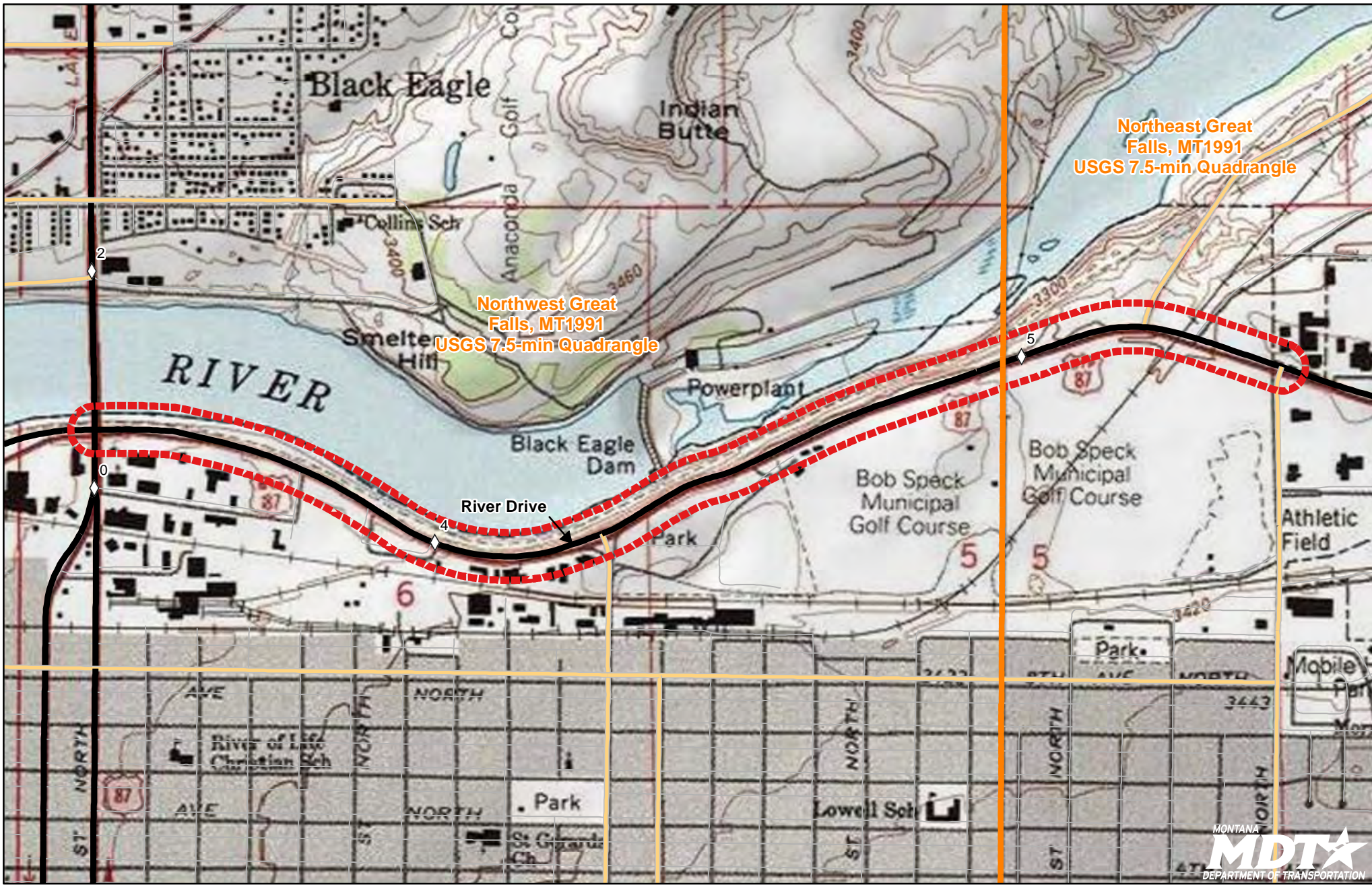
Scale: 1:13,000



Projection: NAD 1983 StatePlane Montana FIPS 2500
Sources: Aerial Imagery - NAIP 2013

EXHIBIT 1 - STUDY AREA RIVER DRIVE NORTH CORRIDOR STUDY CASCADE COUNTY, MONTANA

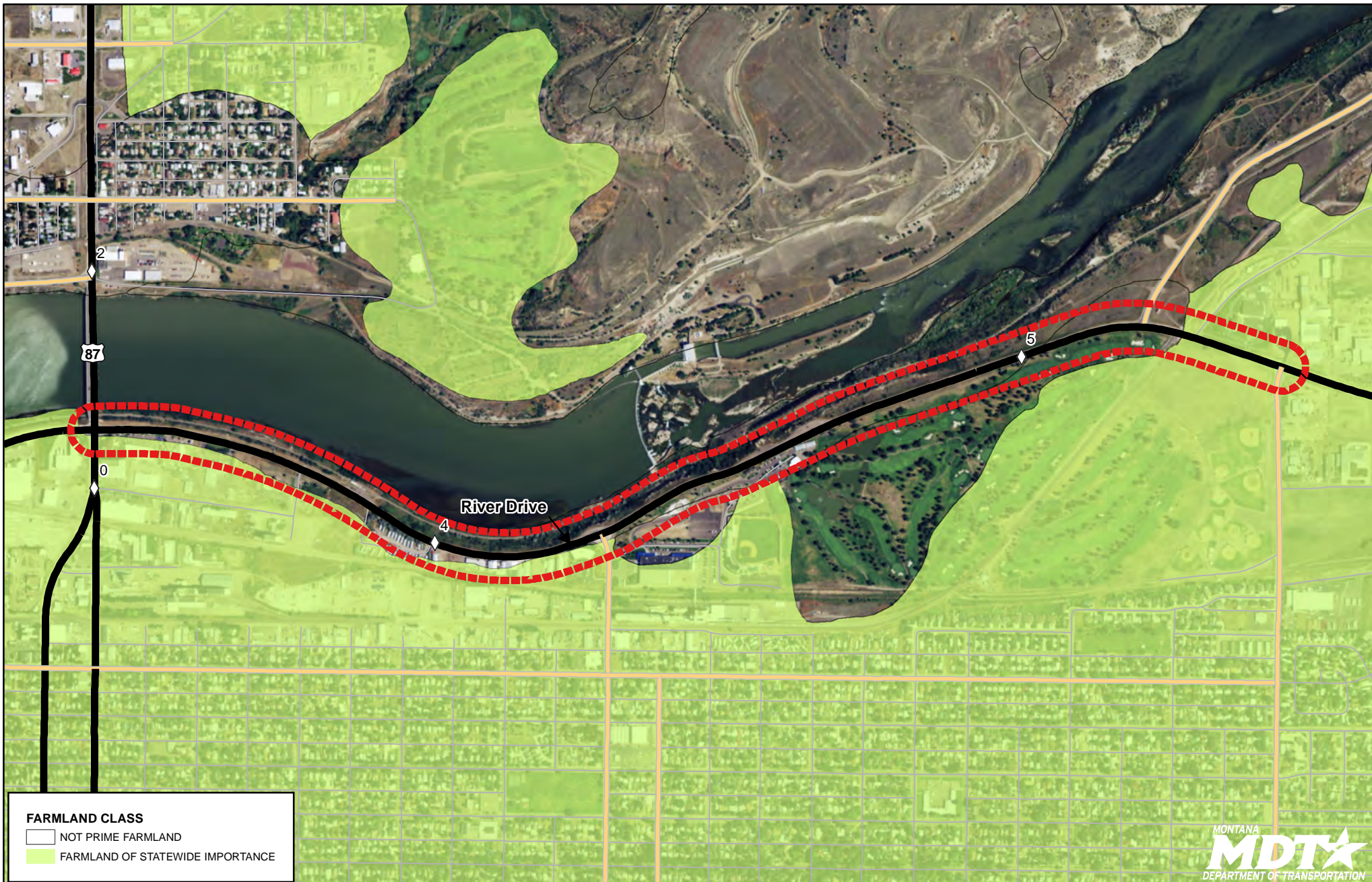
- STUDY AREA
- NHS NON-INTERSTATE
- URBAN
- OFF SYSTEM ROUTE
- REFERENCE POSTS



Projection: NAD 1983 StatePlane Montana FIPS 2500
 Sources: USGS Topographic 7.5 - minute quadrangles

**EXHIBIT 2 - TOPOGRAPHIC MAP
 OF STUDY AREA
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**

- STUDY AREA
- USGS 7.5-MIN QUADS
- NHS NON-INTERSTATE
- URBAN
- OFF SYSTEM ROUTE
- REFERENCE POSTS

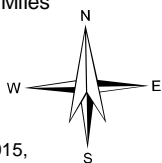


FARMLAND CLASS
 NOT PRIME FARMLAND
 FARMLAND OF STATEWIDE IMPORTANCE



0 0.125 0.25 0.5 Miles

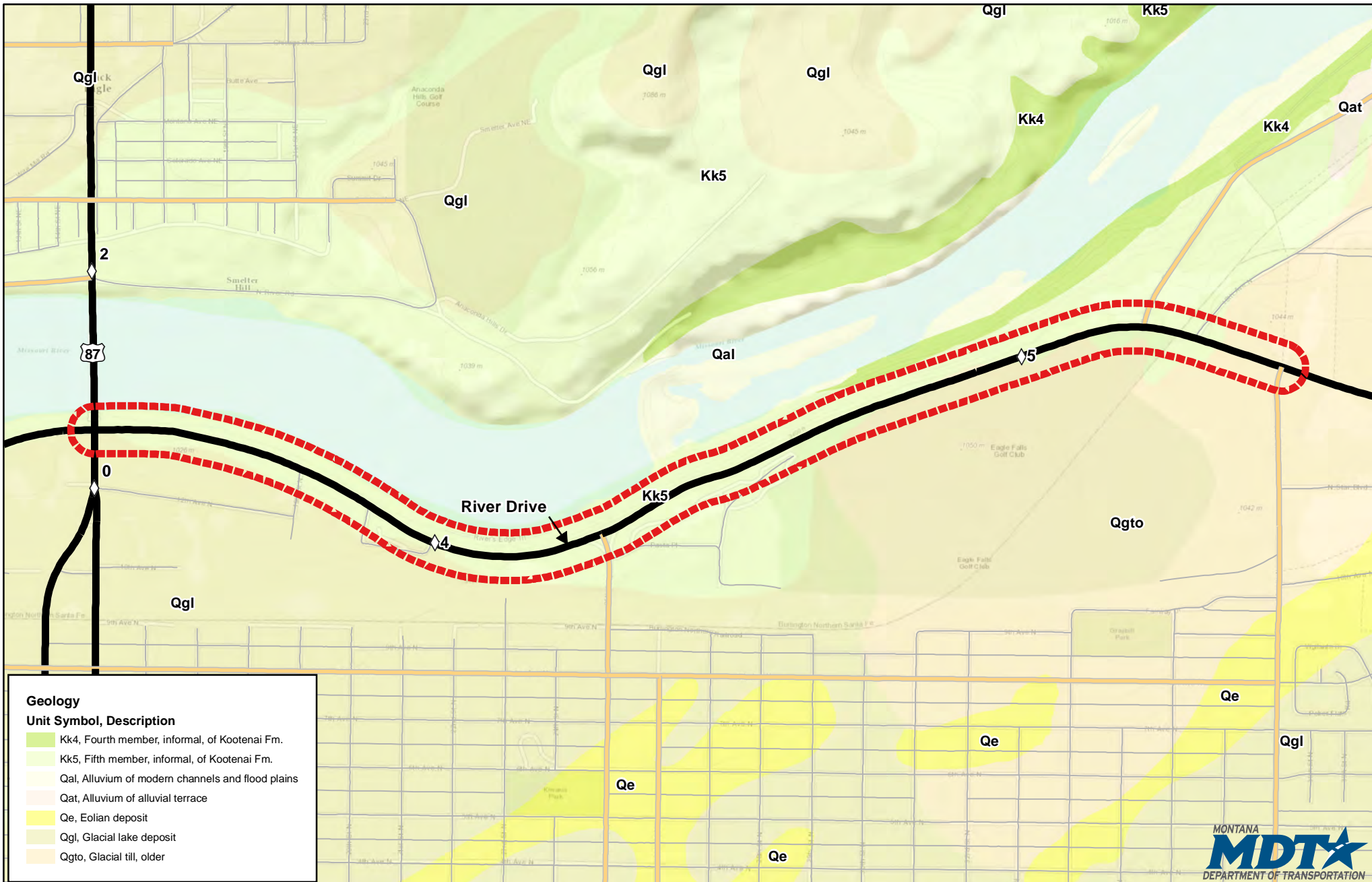
Scale: 1:13,000



Projection: NAD 1983 StatePlane Montana FIPS 2500
 Sources: NRCS SSURGO database for Cascade County - 2015,
 Aerial Imagery - NAIP 2013

**EXHIBIT 3 - PRIME FARMLANDS
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**

- STUDY AREA
- NHS NON-INTERSTATE
- URBAN
- OFF SYSTEM ROUTE
- REFERENCE POSTS



Geology	
Unit Symbol	Description
	Kk4, Fourth member, informal, of Kootenai Fm.
	Kk5, Fifth member, informal, of Kootenai Fm.
	Qal, Alluvium of modern channels and flood plains
	Qat, Alluvium of alluvial terrace
	Qe, Eolian deposit
	Qgl, Glacial lake deposit
	Qgto, Glacial till, older

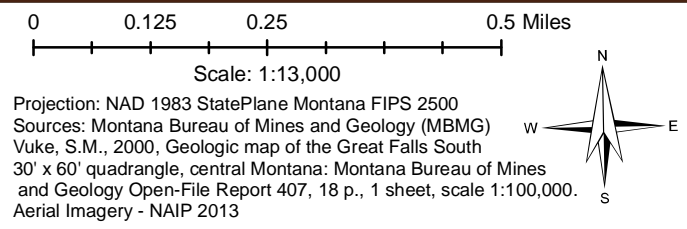
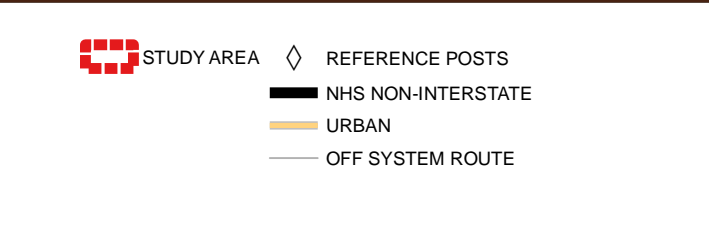


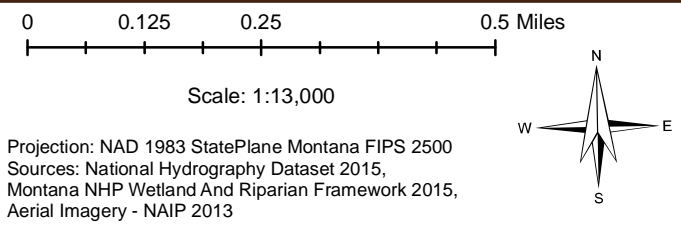
EXHIBIT 4 - GEOLOGY RIVER DRIVE NORTH CORRIDOR STUDY CASCADE COUNTY, MONTANA



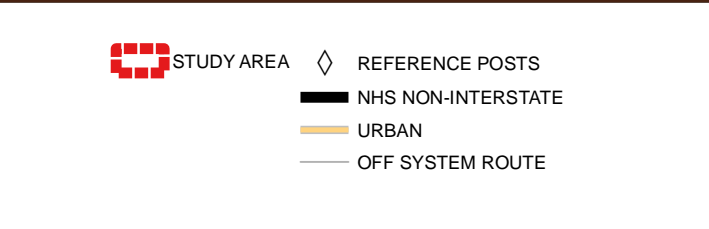


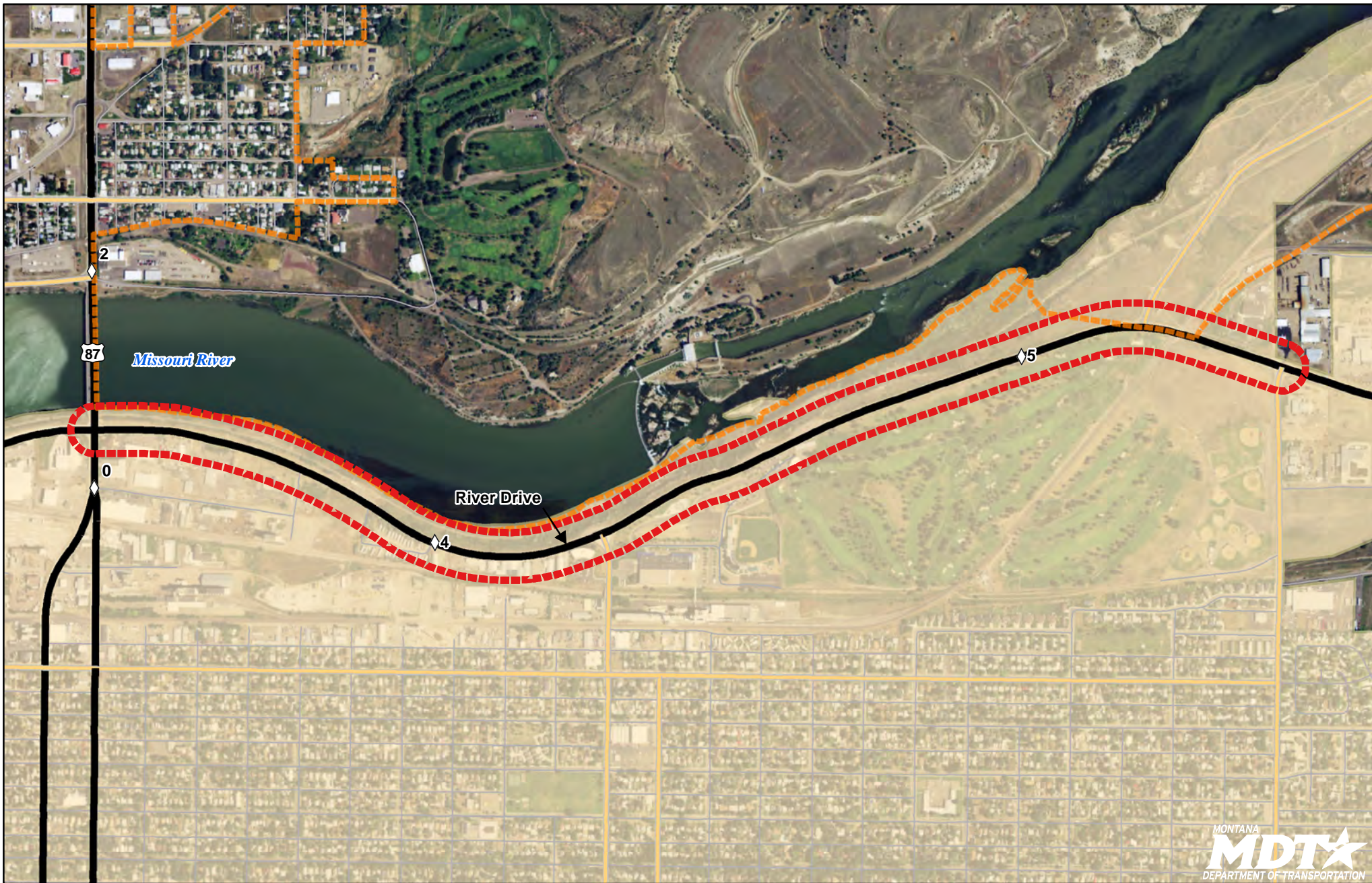
DAM
 MAJOR RIVER
 INTERMITTENT STREAM / RIVER

*No known wetlands exist within Study Area.
Further investigation will occur at a project development level.



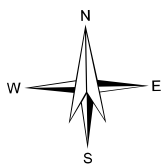
**EXHIBIT 5 - SURFACE WATER
& WETLANDS**
RIVER DRIVE NORTH CORRIDOR STUDY
CASCADE COUNTY, MONTANA





0 0.125 0.25 0.5 Miles

Scale: 1:13,000



Projection: NAD 1983 StatePlane Montana FIPS 2500
 Sources: National Hydrography Dataset 2015,
 Montana NHP Wetland And Riparian Framework 2015,
 Aerial Imagery - NAIP 2013

**EXHIBIT 6 - MS4 AND
 URBAN BOUNDARIES
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**

- STUDY AREA
- 2010 URBANIZED AREA (MS4 BOUNDARY)
- CITY BOUNDARY
- REFERENCE POSTS
- NHS NON-INTERSTATE
- URBAN
- OFF SYSTEM ROUTE



- DEQ PUBLIC WATER SUPPLY INVENTORY (1)
- GWIC WELLS (2)

*Numbers next to Water Rights indicate number contained ONLY within the Study Corridor boundary.

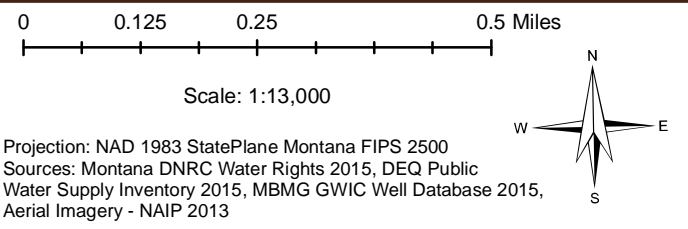


EXHIBIT 7 - WELLS & WATER RIGHTS RIVER DRIVE NORTH CORRIDOR STUDY CASCADE COUNTY, MONTANA

- ▬ STUDY AREA
- ◇ REFERENCE POSTS
- ▬ NHS NON-INTERSTATE
- ▬ URBAN
- ▬ OFF SYSTEM ROUTE

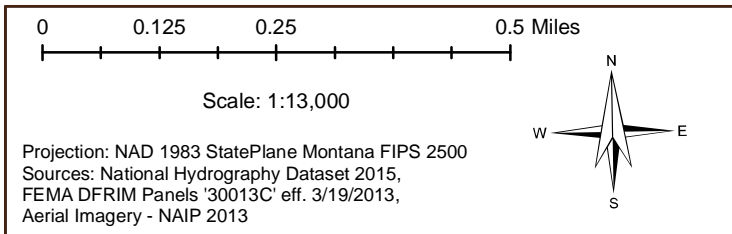
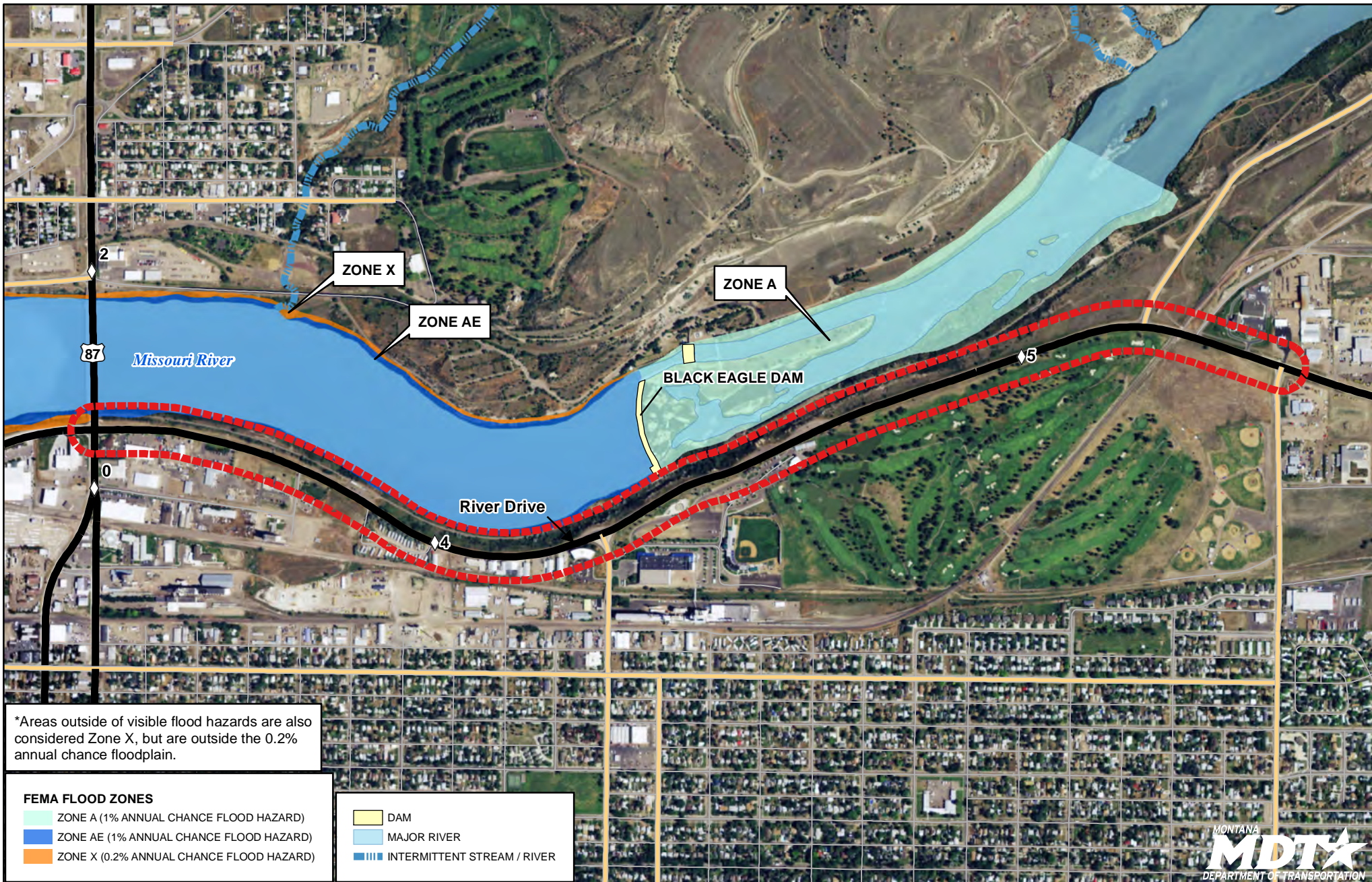
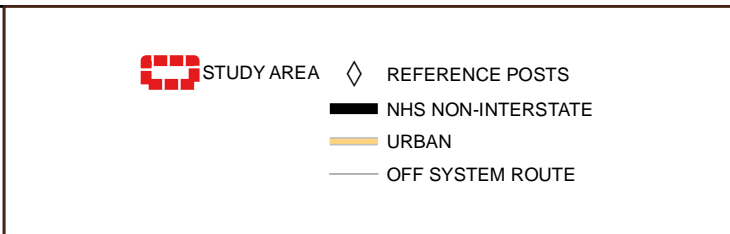
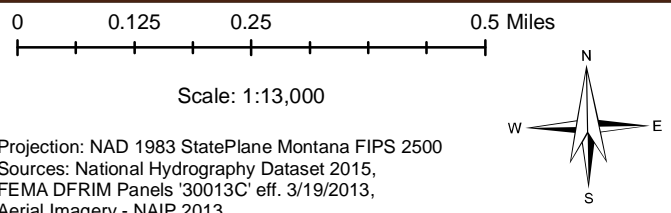


EXHIBIT 8 - FEMA FLOOD ZONES RIVER DRIVE NORTH CORRIDOR STUDY CASCADE COUNTY, MONTANA





- | | |
|------------------------------------------------|--------------------------|
| LEAKING UNDERGROUND STORAGE TANK (LUST) | HAZARDOUS WASTE HANDLERS |
| ACTIVE LUST SITE | RESPONSE SITES |
| INACTIVE LUST SITE | |
| UNDERGROUND STORAGE TANK (UST) | |
| ACTIVE UST SITE | |
| INACTIVE UST SITE | |





**EXHIBIT 9 - LUST, UST, &
 HAZARDOUS WASTE FACILITIES
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**

- | | |
|--------------------|-----------------|
| STUDY AREA | REFERENCE POSTS |
| NHS NON-INTERSTATE | |
| URBAN | |
| OFF SYSTEM ROUTE | |



The MDT Carcass Database contains information on carcasses collected by MDT maintenance personnel; however, not all carcass collection is reported consistently or on a regular schedule. This makes the information provided by the Carcass Database useful for pattern identification over space and time, but not statistically valid. It also is difficult to match a carcass report to a crash report to ensure the carcass is not counted twice in a detailed study.

- ANIMAL CARCASSES**
-  MULE DEER
 -  WHITETAIL DEER

All 3 locations represent one carcass at each location.

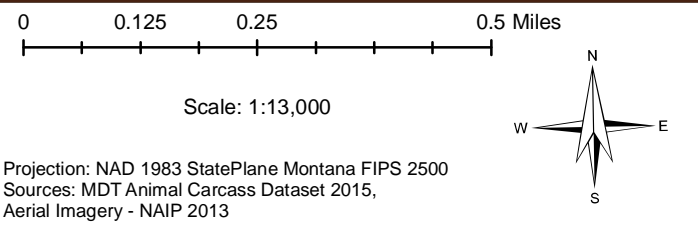





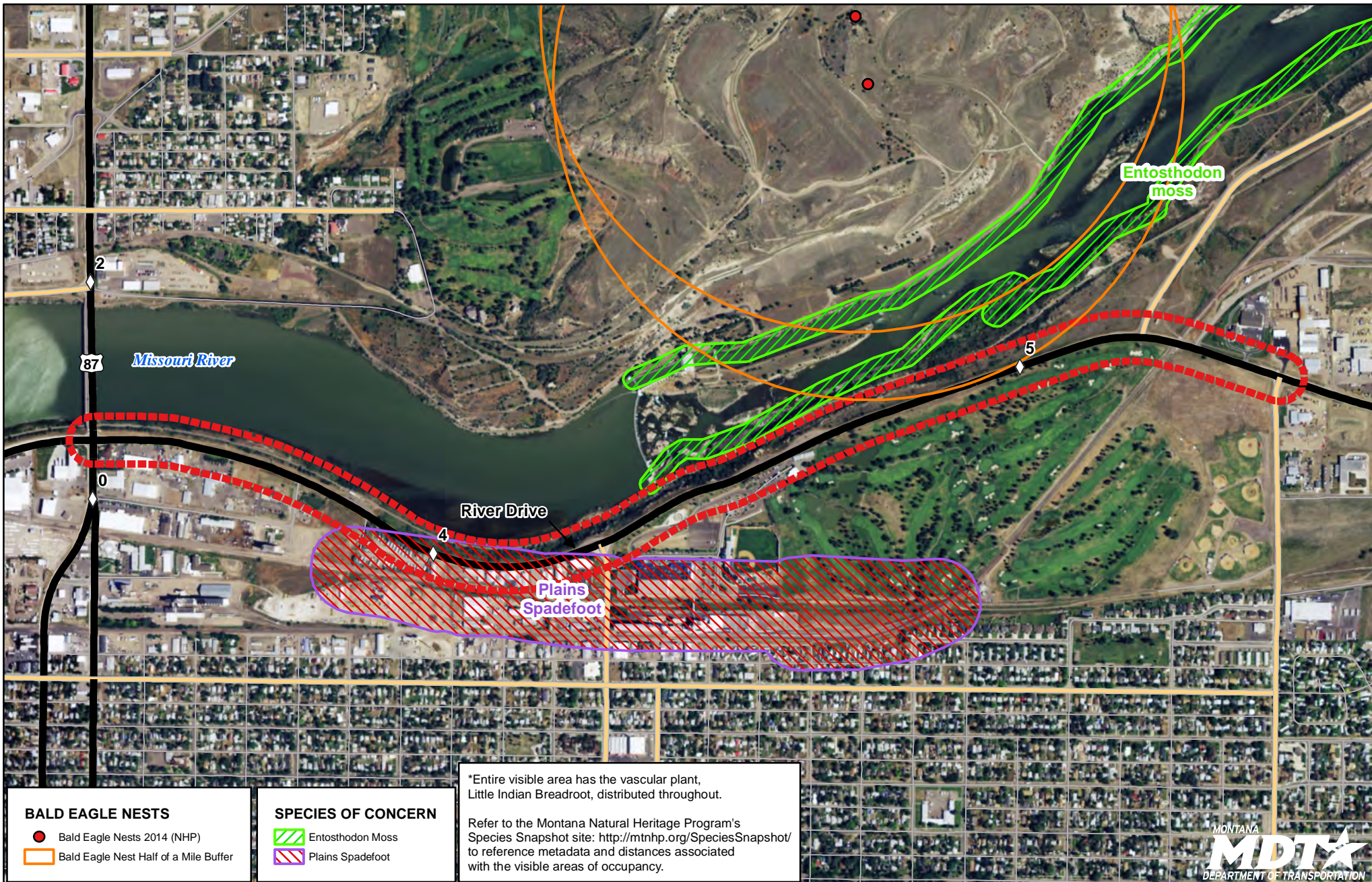


EXHIBIT 10 - ANIMAL CARCASSES RIVER DRIVE NORTH CORRIDOR STUDY CASCADE COUNTY, MONTANA

-  STUDY AREA
-  REFERENCE POSTS
-  NHS NON-INTERSTATE
-  URBAN
-  OFF SYSTEM ROUTE



BALD EAGLE NESTS

- Bald Eagle Nests 2014 (NHP)
- Bald Eagle Nest Half of a Mile Buffer

SPECIES OF CONCERN

- Entosthodon Moss
- Plains Spadefoot

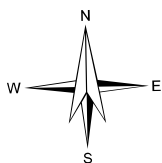
*Entire visible area has the vascular plant, Little Indian Breadroot, distributed throughout.

Refer to the Montana Natural Heritage Program's Species Snapshot site: <http://mtnhp.org/SpeciesSnapshot/> to reference metadata and distances associated with the visible areas of occupancy.



0 0.125 0.25 0.5 Miles

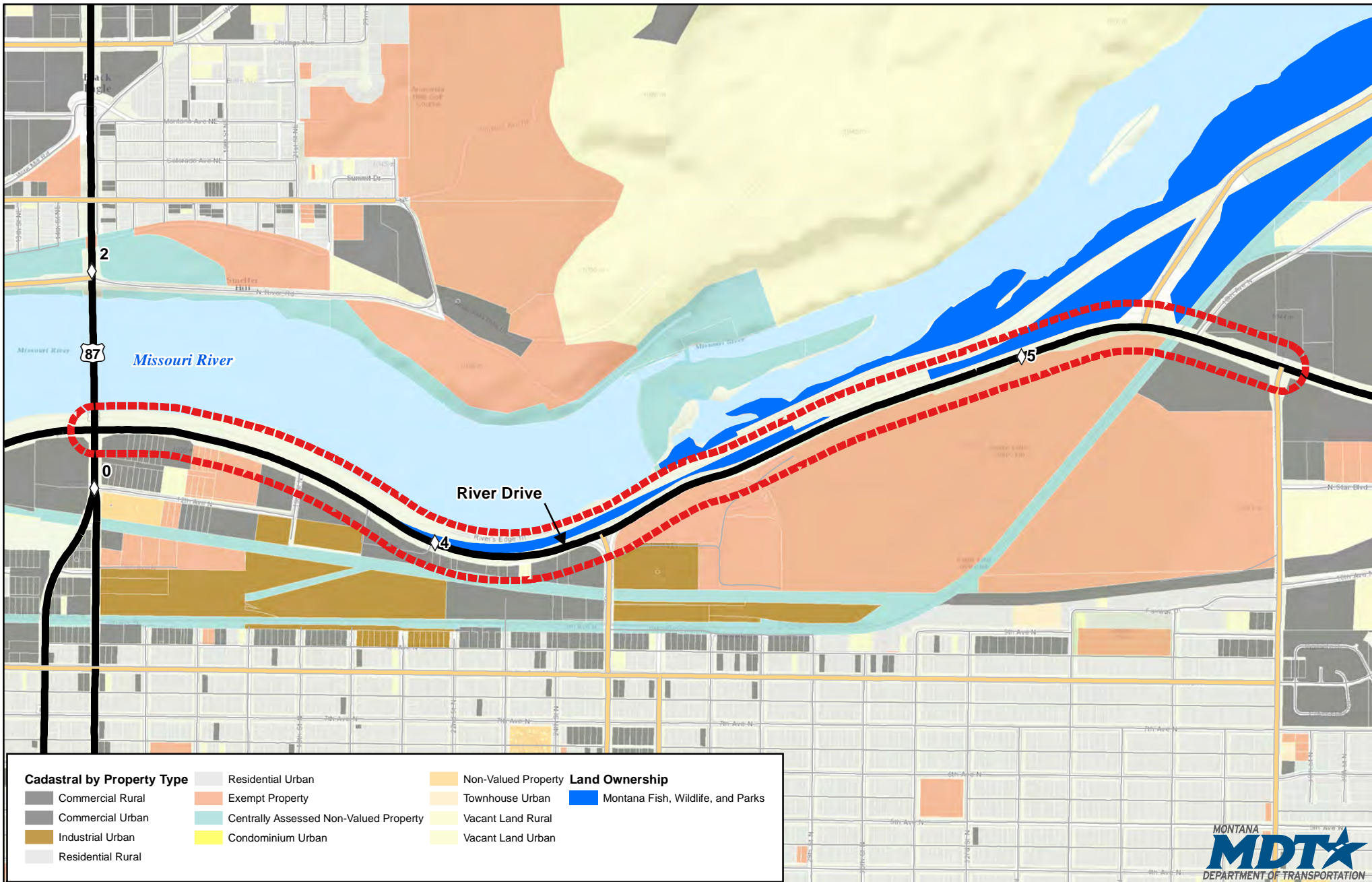
Scale: 1:13,000



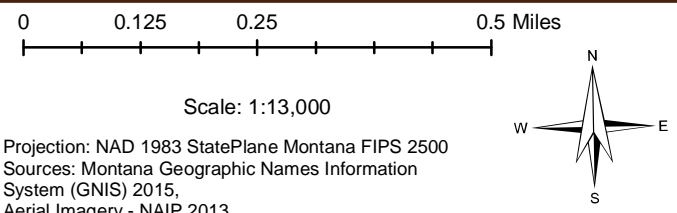
Projection: NAD 1983 StatePlane Montana FIPS 2500
Sources: MDT Animal Carcass Dataset 2015, Aerial Imagery - NAIP 2013

**EXHIBIT 11 - SPECIES OF CONCERN
RIVER DRIVE NORTH CORRIDOR STUDY
CASCADE COUNTY, MONTANA**

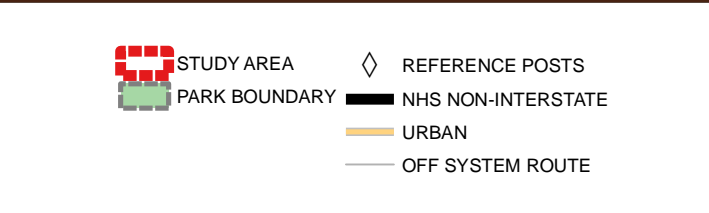
- STUDY AREA
- REFERENCE POSTS
- NHS NON-INTERSTATE
- URBAN
- OFF SYSTEM ROUTE

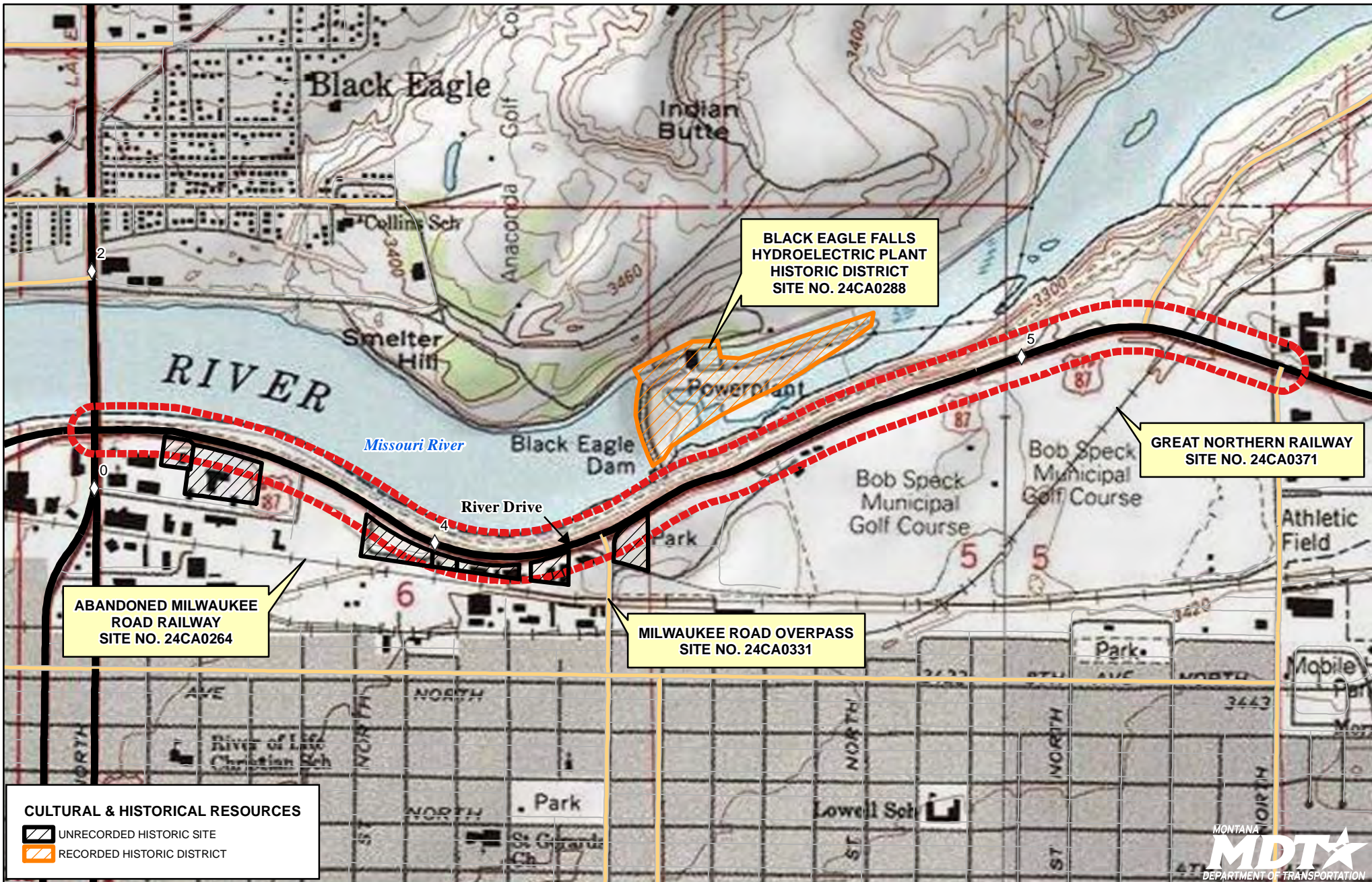


**EXHIBIT 12 - PUBLIC LANDS & CADASTRAL BY PROPERTY TYPE
RIVER DRIVE NORTH CORRIDOR STUDY
CASCADE COUNTY, MONTANA**



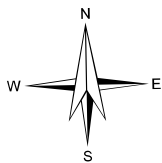
**EXHIBIT 13 - POTENTIAL 4(F) & 6(F) LOCATIONS
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**





0 0.125 0.25 0.5 Miles

Scale: 1:13,000



Projection: NAD 1983 StatePlane Montana FIPS 2500
 Sources: Montana Cultural Resource Information System 2015,
 USGS Topographic 7.5 - minute quadrangles

**EXHIBIT 14 - CULTURAL AND HISTORICAL RESOURCES
 RIVER DRIVE NORTH CORRIDOR STUDY
 CASCADE COUNTY, MONTANA**



STUDY AREA



REFERENCE POSTS



NHS NON-INTERSTATE



URBAN



OFF SYSTEM ROUTE

Attachment 2

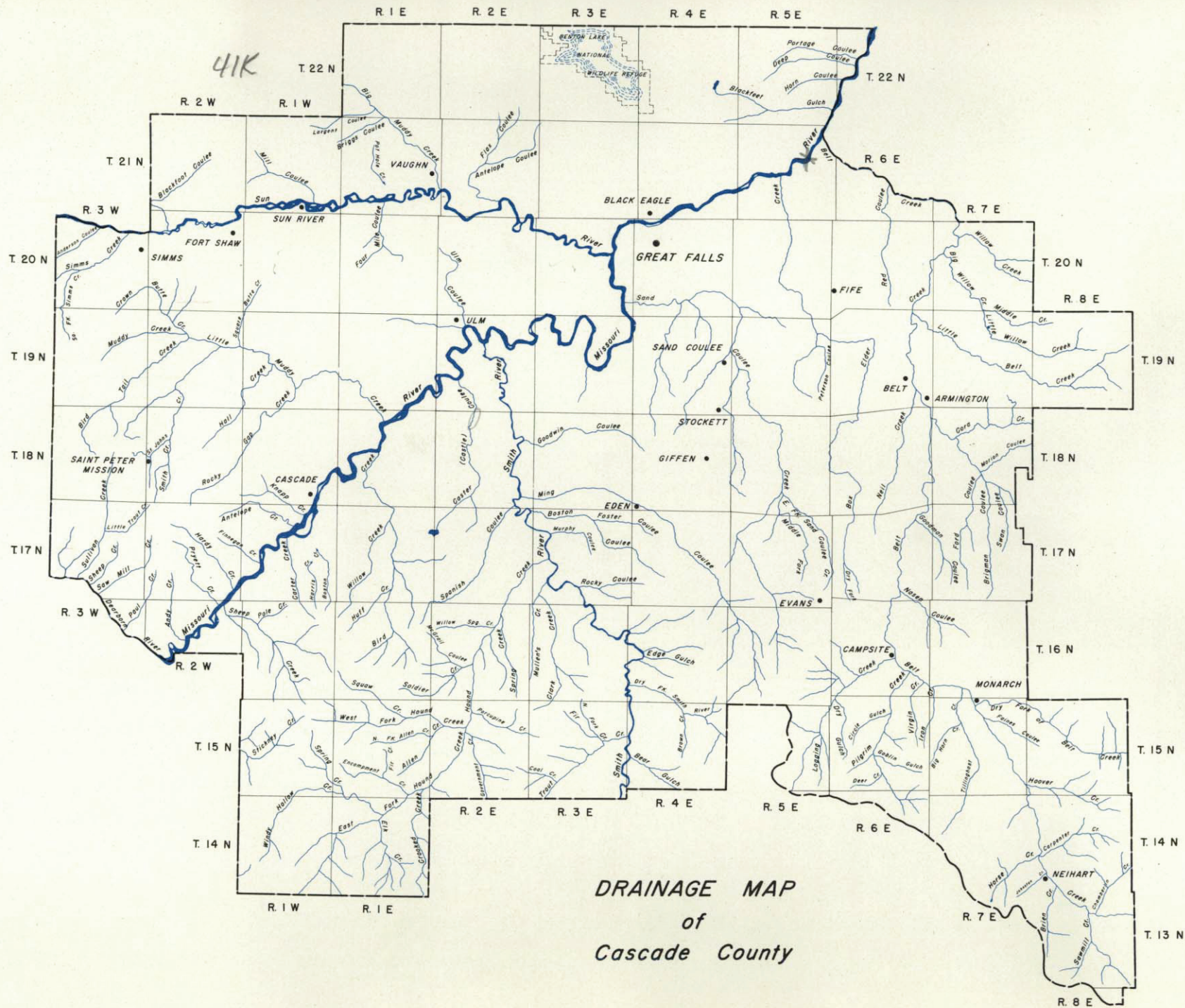
Water Resources Survey Maps

WATER RESOURCES SURVEY
CASCADE COUNTY, MONTANA

Part II

Maps Showing Irrigated Areas

Published by
STATE ENGINEER'S OFFICE
Helena, Montana
June, 1961




MAP SYMBOL INDEX













BOUNDARIES

- COUNTY LINE
- NATIONAL FOREST LINE















DITCHES

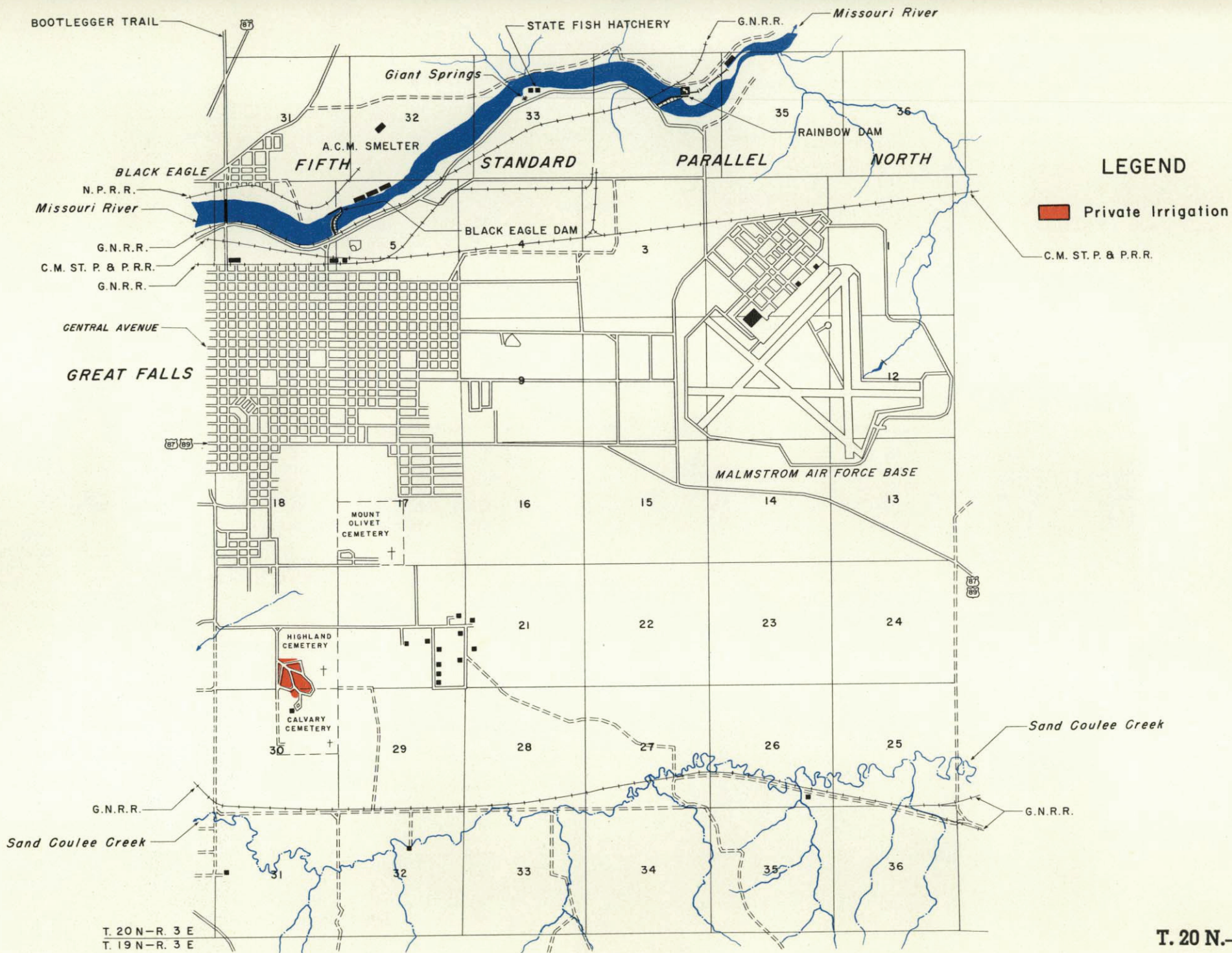
-  CANALS OR DITCHES
- > DRAIN DITCHES
- - -> PROPOSED DITCHES

STRUCTURES & UNITS

-  DAM
-  DIKE
-  FLUME
-  SIPHON
-  SPILL
-  SPRINKLER SYSTEM
-  WEIR
-  PIPE LINE
-  PUMP
-  PUMP SITE
-  RESERVOIR
-  WELL
- + + + NATURAL CARRIER USED AS DITCH

TRANSPORTATION

- ==== PAVED ROADS
- === UNPAVED ROADS
- +++ RAILROADS
-  STATE HIGHWAY
-  U. S. HIGHWAY
-  AIRPORT
- * SPRING
-  SWAMP
-  GAUGING STATION
-  POWER PLANT
-  STORAGE TANK
-  CEMETERY
-  FAIRGROUND
-  FARM OR RANCH UNIT
-  LOOKOUT STATION
-  RANGER STATION
- - -> RAILROAD TUNNEL
-  SCHOOL
-  SHAFT, MINE, OR DRIFT



LEGEND

Private Irrigation

--- C.M. ST. P. & P.R.R.

T. 20 N.—R. 3 E
T. 19 N.—R. 3 E

T. 20 N.—R. 4 E

Attachment 3

Noise

Abatement

Criteria Table

Table: 23 CFR Part 772, Table 1 NAC Hourly A Weighted Sound Level in Decibels (dB(A))

Activity Category	$L_{eq}(h)$	$L_{10}(h)^2$	Analysis Location	Description of Activity Category
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ³	67	70	Exterior	Residential.
C ³	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section (f) sites, schools, television studios, trails, and trail crossings.
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	75	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F				Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G				Undeveloped lands that are not permitted.

¹Either $L_{eq}(h)$ or $L_{10}(h)$ (but not both) may be used on a project.

²Either $L_{eq}(h)$ and $L_{10}(h)$ Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

³Includes undeveloped lands permitted for this activity category.