MONTANA 3 BILLINGS
CORRIDOR STUDY

APRIL 2025

ENVIRONMENTAL SCAN

Prepared for:

MONTANA MDT DEPARTMENT OF TRANSPORTATION

Prepared by:

DOWL

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TABLES

ATTACHMENTS

ACRONYMS

CECRA	Comprehensive Environmental Cleanup and Responsibility Act
CWA	Clean Water Act
DNRC	Montana Department of Natural Resources and Conservation
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
HUC	Hydrologic Unit Code
LWCF	Land and Water Conservation Fund
MAAQS	Montana Ambient Air Quality Standards
MBMG	Montana Bureau of Mines and Geology
MBOGC	Montana Board of Oil and Gas Conservation
MBTA	Migratory Bird Treaty Act
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MPDES	Montana Pollutant Discharge Elimination System
MS4	Municipal Separate Storm Sewer System
MSATs	Mobile Source Air Toxics
MT 3	Montana Highway 3
MTNHP	Montana Natural Heritage Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PESC	Permanent Erosion and Sediment Control
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM	Particulate Matter
RP	Reference Post
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SOC	Species of Concern
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank

1.0 INTRODUCTION

The Montana Department of Transportation (MDT) initiated a corridor study of Montana Highway 3 (MT 3) between the highway's intersection with Apache Trail and the Airport Road/North 27th Street intersection. The study's goal focuses on developing a comprehensive long-range plan for managing the corridor and determining what could be done to improve the corridor based on needs, public and agency input, and financial feasibility. This is a collaborative process with local jurisdictions, resource agencies, MDT, Federal Highway Administration (FHWA), and the public to identify transportation needs and potential solutions given environmental and funding constraints.

This environmental scan report provides a planning-level overview of physical, biological, social, and cultural resources and identifies potential constraints and opportunities within the MT 3 study limits. This scan is not a detailed environmental investigation. If specific improvement options are advanced from this study, a Phase I feasibility study and an analysis for compliance with the National and Montana Environmental Policy Acts (NEPA and MEPA) and other applicable state and federal regulations will be completed as part of the MDT project development process. Information provided in this report may be forwarded into the NEPA and/or MEPA process, at that time.

1.1 Study Corridor Area

The study area for the MT 3 corridor planning study is in the northwest part of Billings, within Yellowstone County, Montana. The study corridor includes 5.1 miles of MT 3 beginning at the intersection with Apache Trail (Reference Post [RP] 8.1) and continues east to the intersection with Airport Road/North 27th Street (RP 3.0). For the purposes of this planning study, the study limits include a 0.25-mile buffer from the centerline of the MT 3 roadway, except in portions south of the road where the Rimrocks mark the boundary. The study corridor area is represented in **Exhibits 1 and 2 (Attachment 1)** and occurs within or partially within the following legally described areas:

- Sections 20, 21, 25, 26, 27, and 28 of Township 1 North, Range 25 East
- Section 30 of Township 1 North, Range 26 East

1.2 Study Background

MT 3 is the northwestern gateway to Billings, and the corridor transitions from rural highway on the west end to an urban arterial on the east end. The corridor has several residential housing subdivisions with trails and open space along the Rimrocks, providing scenic overlooks of Billings. MT 3 is a high-volume corridor, and traffic volumes are expected to increase, with employment and population growth expected north of the corridor. The land use along the corridor varies and includes agricultural, residential, and commercial aviation lands. The Rimrocks constrain the area south of the corridor. Connecting Great Falls to Billings, the MT 3 corridor is also part of the National Highway System and Strategic Highway Network, highlighting the importance of the route for defense mobility and truck traffic.

1.3 Information Sources

Information presented in the various sections of this report was obtained from publicly available reports, websites, data, and documentation from federal, state, and local agencies and from an on-site field review conducted in January 2025. The information presented includes the most recent available data as of February 2025. It is appropriate to review and update this information during future environmental analyses completed for any projects that may be forwarded from this study.

2.0 PHYSICAL ENVIRONMENT

2.1 Land Ownership and Land Use

Land within the study corridor area is predominantly privately owned; however, a considerable portion is managed by the State of Montana, City of Billings, and MDT. One small parcel within the confines of the Billings Logan International Airport is under federal jurisdiction. No conservation easements are found within the area. **Exhibit 3 (Attachment 1)** shows existing public land ownership within and adjacent to the study corridor area.

The western half of the study corridor area is primarily developed for residential and crop production, and the eastern half is developed mainly for commercial purposes. The Billings Logan International Airport is the largest parcel. Zoning districts within the study corridor are demarcated by the Billings city limits at Zimmerman Trail (RP 6.25). Districts east of Zimmerman Trail fall within Billings city limits, while those west of Zimmerman Trail are designated by Yellowstone County (City of Billings 2025a). **Exhibit 4 (Attachment 1)** shows the zoning designations and land uses as outlined below.

- **Yellowstone County Zoning** encompasses the western third of the study corridor area from Zimmerman Trail to the west. The majority of zoning in this area is agriculture (A), with Zimmerman Park designated as open space, parks, recreation (P1).
- **City of Billings Zoning** encompasses the eastern extent of the study corridor from Zimmerman Trail to the east. The Billings Logan International Airport and associated facilities are zoned primarily public-civic and institutional (P2). The remainder of city-designated zoning north of MT 3 is predominantly agriculture (A), heavy commercial (CX), and public - campuses - medical, civic, educational (P3). The southern side of MT 3 is mostly a mix of open space, parks, recreation (P1) and suburban neighborhood (N3).

The Billings Logan International Airport Area of Influence covers nearly the entire eastern extent of the study corridor area until approximately RP 5.3. A height and hazard limitation zone is included within this area (City of Billings 2025b)

Improvement options carried forward from this study would need to consider potential impacts to adjacent private landowners, as well as potential impacts to adjacent land use, should new right-of-way or easements on adjacent lands, new access points, or changes in access be required.

2.2 Soil Resources and Prime Farmland

The importance of farmlands to the national and local economy requires consideration of impacts from activities to, or on land adjacent to, prime or unique farmlands. Congress enacted the Farmland Protection Policy Act (FPPA) (7 U.S.C. 4201 et. seq.) as a subtitle of the 1981 Farm Bill. The FPPA is intended “to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses, and to assure that

federal programs are administered in a manner that, to the extent practicable, are 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. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land. However, projects that occur on farmland already in urban development or committed to urban development or are used for water storage are not subject to FPPA.

Soil surveys, which provide data on land classifications, including farmland, are available from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (NRCS 2025). Soil information from the NRCS soil survey (MT111) for Yellowstone County, Montana was reviewed to determine the presence of prime and unique farmland within the study corridor area and vicinity to demonstrate compliance with the FPPA. **Exhibit 5 (Attachment 1)** contains a map and descriptions of the farmland classification types found in the study corridor area and general vicinity. Within the study corridor area limits, approximately 34.4 acres (2.5 percent) of land are classified as prime farmland if irrigated, and 473.4 acre (35 percent) of land within the study corridor area limits is classified as farmland of statewide importance. The remainder of soils are not classified as prime or unique farmland. Of the 507.8 acres classified as either prime farmland if irrigated or farmland of statewide importance, only 182.4 acres are committed (zoned) to agricultural or suburban agriculture. The remaining acreage has already been developed or is zoned for future non-agricultural use.

Improvement options carried forward from this study that become federally-funded projects, must consider impacts to farmland and farmland infrastructure and potential effects if farmland is permanently removed from production or converted to non-agricultural uses. Coordination with the NRCS is required to determine the necessary processing requirements. This may require completion of a CPA-106 Farmland Conversion Impact Rating Form for Corridor Type Projects. The NRCS uses information from the impact rating form to keep an inventory of prime and important farmlands within each state and conversion of farmland to non-agricultural use. Projects planned and completed without the assistance of a federal agency are not subject to the FPPA.

2.3 Geologic Resources and Hazards

The study corridor area and Billings are located in the Yellowstone River valley on mostly alluvial (river, fan and slopewash) and colluvial (gravity) deposits overlying Cretaceous shoreline and marine formations of sandstone and shale. The prominent sandstone cliffs (locally called the Rimrock or the "Rims") that define the northern skyline of Billings, and form the bluffs along the eastern margin of the river through Billings, are composed of Upper Cretaceous Eagle Sandstone that generally dips to the northeast at approximately 3 to 5 degrees (Alt and Hyndman 1986). The Eagle Sandstone, a light brownish-gray to yellowish-brown massive sandstone, is very fine-grained to fine-grained, well-cemented, cross-bedded, contains some sandy shale beds up to 50 feet thick, and overall, this geologic unit is 250 to 350 feet thick in the region (Lopez 2002). The Eagle Sandstone represents an offshore sandbar or barrier island environment that stood between a coastal lagoon and the shallow inland sea (Cretaceous Seaway) that flooded much of the Great Plains approximately 80 million years ago. It typically contains marine fossils and

evidence of bioturbation (the process by which organisms rework soil and sediments). Underlying the Eagle Sandstone is the Upper Cretaceous Telegraph Creek Formation, a brownish to dark-gray shale to sandy shale with thin, interbedded sandstone beds that become thicker as it grades into the Eagle Sandstone. This unit is about 150 feet thick and outcrops locally at the base of the cliffs, southwest of the study corridor area.

Exhibit 6 (Attachment 1) presents the surface geology within the study corridor area as depicted on the Billings 30' x 60' Quadrangle (Lopez 2000). The study corridor area consists almost entirely of Upper Cretaceous sandstone (Ke).

Montana is a seismically active state, with most of the seismic activity concentrated in the mountainous western third of the state. According to Montana Bureau of Mines and Geology (MBMG) data, there are no active faults mapped within the study corridor area. Only one magnitude 2.2 earthquake has been documented within the Yellowstone Valley, and this 2014 event was located over 7 miles east of the study corridor area (MBMG 2025a). In addition, the study corridor area is located within a Seismic Hazard Zone that is less likely to experience significant ground shaking (MBMG 2025b).

Geotechnical investigations would be required for reconstruction or significant improvements to MT 3 to determine potential stability, erosion, and settlement concerns posed by surface geology and soil conditions.

2.4 Hazardous Substances

The Montana Department of Environmental Quality (MDEQ) administers and enforces the state's hazardous waste management rules and works to identify and clean up contaminated properties throughout the state. The most current database information on potentially hazardous sites and sources within Yellowstone County was provided by MDEQ (MDEQ 2025). Additional information was also obtained from the United States Environmental Protection Agency (USEPA) (USEPA 2025), Montana Board of Oil and Gas Conservation (MBOGC) database (MBOGC 2024), and the National Pipeline Mapping System administered by the Pipeline and Hazardous Materials Safety Administration (PHMSA) (PHMSA 2025). **Exhibit 7 (Attachment 1)** depicts the location of hazardous or potentially hazardous sites or sources within the study corridor area. **Table 1** and the following text provide additional information on these hazardous sites. Additional investigation regarding locations of hazardous sites and potentially contaminated soils and/or groundwater may be warranted if improvement options are forwarded from this study.

Table 1. Hazardous Sites within Study Corridor Area

Hazardous Site	Name	Description	Location	Status
Hazardous Waste Generators	US FAA Billings Sector Office	Conditionally Exempt Small Quantity Generator	1737 MT 3 – RP 4.3	Inactive
	Corporate Air East	Conditionally Exempt Small Quantity Generator	Aviation Place – RP 3	Inactive
	Billings Logan International Airport	Small Quantity Generator	1901 Terminal Circle – RP 3.2	Active
Underground Storage Tanks	Billings Logan International Airport	1 Gasoline Tank 1 Diesel Tank 1 Waste Oil Tank	1901 Terminal Circle – RP 3.2	Active

Hazardous Site	Name	Description	Location	Status
Underground Storage Tanks (cont.)	Air Traffic Control Tower	1 Diesel Tank	1907 Terminal Circle – RP 3.3	Active
	Rental Car Wash	1 Gasoline Tank	3301 Overlook Drive – RP 4.2	Active
Petroleum Release Tanks	Billings Logan International Airport	Release 402	1901 Terminal Circle – RP 3.2	Resolved
	Northwest Airlines Inc	Release 169	1901 Terminal Circle – RP 3.2	Resolved
	West End Logan International Airport	Release 4007	West of Billings Logan International Airport – RP 4.1	Resolved
		Release 3230		Resolved
	Lynch Flying Service	Release 631	1691 Aviation Place – RP 3	Resolved
	Corporate Air Logan International Airport	Release 1927	Aviation Place – RP 3	Resolved
		Release 662		Resolved
	Montana National Guard Armory #3938	Release 3938	1961 MT 3 – RP 4.6	Resolved

National Priority List (Superfund) Sites

The National Priority List is the list of hazardous waste sites throughout the United States eligible for long-term remedial action financed under the Federal Superfund program. A Superfund site is any land that has been contaminated by hazardous waste and identified by the USEPA as a candidate for cleanup because it poses a risk to human health and/or the environment. No Superfund sites exist in or near the study corridor area.

Remediation Response Sites

The State Superfund Unit uses the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) to investigate and clean up hazardous substances at sites not addressed by Federal Superfund. Historical waste disposal activities at these sites caused contamination of air, surface water, groundwater, sediments, and/or soils with hazardous or deleterious substances. Under CECRA, sites are ranked based on potential risks to human health and the environment. Four remediation response sites were identified within or near the study corridor area. The Billings Logan International Airport is identified as a Location of Interest to the program, but it is not identified as under a legal order.

Hazardous Waste Generators

Many businesses/industries generate hazardous waste. Generators of hazardous waste are regulated to ensure wastes are managed in ways that protect human health and the environment. Generators of hazardous waste are regulated based on the amount of hazardous waste they generate in a calendar month. MDEQ has listed two conditionally exempt small quantity generators and one small quantity generator within or near the study corridor area. A Conditionally Exempt Small Quantity Generator is a category of hazardous waste generator defined by USEPA that generates no more than 220 pounds (100 kilograms) of hazardous waste per month. A Small Quantity Generator generates more than 220 pounds (100 kilograms) but less than 2,200 pounds (1,000 kilograms) of hazardous waste per month. The Billings Logan International Airport is listed

by MDEQ as a small quantity generator located north of MT 3 at 1901 Terminal Circle. The USEPA, however, identifies this location as a very small quantity generator.

Underground Storage Tanks

There are several regulated underground storage tanks (USTs) within the study corridor area, all of which are active.

- Three active USTs exist at the **Billings Logan International Airport** (RP 3.2). There is one tank each of gasoline, diesel, and waste oil.
- One active UST containing diesel is located at the **Air Traffic Control Tower** (RP 3.3).
- One active UST containing gasoline is located at the **Rental Car Wash** (RP 4.2).

Petroleum-Tank Releases

Several petroleum-tank releases have occurred within or adjacent to the study corridor area, all of which have been resolved.

- **Billings Logan International Airport** (Facility ID #29743) located at 1901 Terminal Circle (RP 3.2), had a petroleum release identified in 1988. The incident was resolved in 1994.
- **Northwest Airlines** (Facility ID #29781) located at 1901 Terminal Circle (RP 3.2), had a petroleum release identified in 1989. The incident was resolved in 2015.
- **West End Billings Logan International Airport** (Facility ID #29876) located west of Billings International Airport (RP 4.1), had two petroleum releases identified, one in 1997 and the other in 2001. Both incidents were resolved in 2012.
- **Lynch Flying Service** (Facility ID #30200) located at 1691 Aviation Place (RP 3), had a petroleum release identified in 1991 and was resolved the same year.
- **Corporate Air Logan International Airport** (Facility ID #30329) located at 1901 Terminal Circle (RP 3.2), had two petroleum releases identified. The first release was identified in 1991 and resolved in 1993. The second release was identified in 1993 and resolved in 1994.
- **Montana Army National Guard Armory #3938** (Facility ID #31148) located at 1961 MT 3 (RP 4.6), had a petroleum release identified in 1998. The incident was resolved in 2010.

Landfills and Solid Waste Facilities

Landfills are facilities designed to receive specific kinds of waste, including municipal solid waste, construction and demolition debris, and hazardous waste. There are no active landfills within the study corridor area.

Pipelines

The National Pipeline Mapping System contains information on hazardous liquid and gas transmission pipelines under the jurisdiction of the PHMSA. No hazardous liquid or gas transmission pipelines cross the study corridor area.

Abandoned and Inactive Mine Sites

No mining prospects or abandoned/inactive mines are located within the study corridor area.

Opencut Permits

Opencut permits are permits required for opencut mining and processing of materials such as bentonite, clay, scoria, soil materials, peat, sand or gravel. No active permitted opencut mine sites are located within or near the study corridor area. An opencut mine for sandstone was permitted adjacent to the study corridor area at 3655 AJ Way in 2008 and reclaimed in 2009. The property has since been developed commercially.

2.5 Air Quality

In accordance with the Clean Air Act of 1970, as amended, the USEPA is required to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The USEPA has set standards for six criteria pollutants, including carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM) (PM_{10} and $PM_{2.5}$), sulfur dioxide, and lead.

Montana has also established air quality standards for criteria pollutants, as well as for settleable particulate matter and visibility. These Montana Ambient Air Quality Standards (MAAQS) are found in the Administrative Rules of Montana 17.8.210-17.8.230 and establish statewide targets for acceptable levels of ambient air pollutants.

The USEPA and MDEQ are charged with regulating air quality and may designate areas as attainment or nonattainment based on their history of meeting the NAAQS or MAAQS for pollutants of concern. Areas where air pollution levels do not exceed the air pollution thresholds established in the NAAQS and MAAQS are designated as “attainment” areas. “Nonattainment areas" are localities where air pollution levels persistently exceed the NAAQS or MAAQS, or that contribute to ambient air quality in a nearby area that fails to meet standards. An area that has been designated as nonattainment in the past, but that now complies with the NAAQS, is classified as a “maintenance” area.

A carbon monoxide maintenance area has been designated within the Billings Area (MDEQ 2025, USEPA 2025). The study corridor area falls within the designated limits of the carbon monoxide maintenance area from RP 3.1 to approximately RP 6.8.

Transportation conformity is required by the Clean Air Act to ensure that federal funding and approval are given to transportation projects that are consistent with the air quality goals established by a State Implementation Plan (SIP). Conformity to the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of NAAQS. Improvement options carried forward from this study would need to examine the current air quality status and determine if a project is subject to conformity requirements. In addition, depending on the scope of improvements being considered within the study corridor area, an evaluation of mobile source air toxics (MSATs) may be required. MSATs are compounds emitted from highway vehicles and off-road equipment that are known or suspected to cause cancer or other serious health and environmental effects.

2.6 Surface Waters

The study corridor area is found entirely within the United States Geological Survey delineated Upper Yellowstone-Lake Basin Watershed (hydrologic unit code [HUC] 10070004) and the Blue Creek-Yellowstone River Sub Watershed (HUC 100700410).

Within the study corridor area, there are multiple ephemeral drainages north of MT 3 that eventually convey into Alkali Creek. MT 3 does not cross any surface waters. **Exhibit 8 (Attachment 1)** presents identified surface waters within the study corridor area.

Road construction and reconstruction activities such as bridge or culvert installation or replacement, placement of fill, or bank stabilization have potential impacts to surface waters. Coordination with federal, state, and local agencies would be necessary to determine the appropriate permits based on the improvement options forwarded from this study. Impacts to surface waters should be avoided and minimized to the maximum extent practicable. Impacts to streams and other surface waters may trigger compensatory mitigation requirements.

2.6.1 Water Quality

The Clean Water Act (CWA) is the principal federal legislation directed at protecting water quality. MDEQ is the state agency responsible for implementing components of the CWA outside of Reservation lands.

As directed by the Montana Water Quality Act, MDEQ prepares an Integrated Report every two years listing the status of water quality for waterbodies under state jurisdiction. The MDEQ biennial Integrated Reports include a list of all surface waters where pollutants have impaired the beneficial uses of water for drinking, recreation, aquatic habitats, and other uses. The CWA requires the development and implementation of cleanup plans for waterbodies that fail to meet state water quality standards. This typically involves the development of a Total Maximum Daily Load in which MDEQ determines the sources of pollutants and sets the maximum amount of pollutants that each source can discharge to a waterbody.

None of the drainages within the study corridor area have been assessed due to their ephemeral nature.

Stormwater Management

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES), which regulates, amongst other discharges, stormwater runoff from construction sites that disturb one or more acres. The USEPA administers the NPDES stormwater permitting program for Indian Country within the State of Montana. On non-tribal lands in Montana, stormwater management is regulated by MDEQ through the Montana Pollutant Discharge Elimination System (MPDES), which provides coverage for stormwater discharges through the MPDES Stormwater Construction General Permit. The applicability of the MPDES permit would need to be reviewed for any projects brought forward from the corridor study.

Small Municipal Separate Storm Sewer Systems (MS4s) for incorporated cities in Montana with a population of at least 10,000 people are regulated under MPDES General Permit MTR040000. Under this General Permit, MS4s are required to apply for and obtain authorization to discharge stormwater into state waters per requirements of the General Permit. The City of Billings is a designated MS4. The majority of the study corridor area, extending east from Zimmerman Trail at RP 6.25, is within the Billings MS4 boundary and is regulated under the MS4 and included in the Billings Stormwater Management Program (City of Billings 2024).

As outlined in MDT's Permanent Erosion and Sediment Control (PESC) Design Guidelines, PESC measures must be considered with projects disturbing one or more acre or projects having the potential to adversely affect water quality. Incorporation of PESC measures will typically be limited to projects in proximity to sensitive resources, such as impaired waterways, or with scopes related to rehabilitation or reconstruction. The applicability of PESC measures would need to be reviewed for any projects carried forward from the corridor study.

2.6.2 Wild and Scenic Rivers

The Wild and Scenic Rivers Act, created by Congress in 1968, protects certain rivers and their immediate environments that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, or cultural resources, or other similar values. In Montana, portions of the North, South, and Middle Forks of the Flathead River and portions of the Missouri River downstream of Fort Benton were designated by Congress in 1976 as wild, scenic, or recreational components of the National Wild and Scenic River System. In 2018, East Rosebud Creek was added to the System. None of these rivers are within or near the study corridor area.

2.7 Irrigation Features

The 2017 USDA agricultural census shows Yellowstone County had 1,186 farms totaling 1,433,440 acres, with the average farm size at 1,209 acres. In 2022, the number of farms had decreased by 10, and land in farms had decreased by 11 acres, with the average farm size at 1,208 acres. Of the 1,433,440 total farmed acres in the county, only 48,166 acres were irrigated using both surface water and groundwater (USDA 2022).

Within the study corridor area, the majority of the land west of Zimmerman Trail is zoned agriculture, and several agricultural fields are located to the north and south of MT 3. Maps from the Yellowstone County Montana Water Resources Survey (1943), prepared by the Department of Natural Resources and Conservation (DNRC), show no irrigation ditches, laterals, or canals within or adjacent to the study corridor area that can supply irrigation water to these fields (DNRC 1943). Groundwater data also indicates only one groundwater well in the area is used for stockwater (MBMG 2025c). Based on aerial imagery, agricultural land within the study corridor area appears to be dryland farming.

To help avoid or minimize impacts to agricultural operations, coordination with affected landowners is required if irrigation facilities, such as pumps, pivots or sprinkler systems, are identified and affected by improvement options carried forward from this planning study.

2.8 Groundwater

Groundwater is found beneath the ground surface in the soil and rock. Gravity pulls excess soil moisture downward to a point where the spaces in the soil and rock become saturated. The top of this saturation zone is called the water table. Groundwater can be found in deep aquifers with little porosity, where it moves very slowly, or in highly porous material close to the surface, where it may move more rapidly. Groundwater is an important source for drinking water, agricultural, livestock, and industrial use.

The study corridor area is entirely within the extent of the Eagle Aquifer, which consists of water-saturated sandstone layers within the Eagle Sandstone and the underlying Telegraph Creek Formation. The Eagle Aquifer in west-central Yellowstone County is an important source for stock and domestic water. The Eagle Sandstone contains multiple sandstone layers separated by shale, with thicknesses up to 50 feet. The aquifer's depth varies, with some wells reaching over

1,000 feet below the surface. The median well depth is 180 feet. Unlike much of the area below the Rimrocks, which is mostly influenced by the Yellowstone River, groundwater recharge within the Eagle Aquifer depends on precipitation and snowmelt (Madison, et al. 2014).

According to the MBMG Groundwater Information Center, there are over 20 wells located within 0.25 miles of the study corridor area, 10 of which were identified below the Rimrocks. Wells mapped on top of the Rimrocks were drilled to depths ranging from 22 to 320 feet, with an average depth of 133 feet. The majority of the wells are for domestic use. Wells mapped below the Rimrocks were drilled to depths ranging from 14 to 285 feet, with an average depth of 70 feet. The majority of the wells are for monitoring or domestic use. Static water levels on top of the Rimrocks range from 5 to 170 feet and average 71 feet below the ground surface. Information regarding static water levels below the Rimrocks was not readily available. Only six wells are mapped within the study corridor area (MBMG 2025c).

There are no public water supply wells mapped within the study corridor area. The closest public water supply well is approximately 1 mile southeast at Athletic Park. Public water supply wells have a setback requirement from MDEQ of a 100-foot isolation zone in which no source of pollutant can be located. Public water supply wells are also typically deeper and require a higher volume of water to be discharged.

The study corridor area is not located within a water or sewer district.

Exhibit 8 (Attachment 1) shows the location of recorded groundwater wells and aquifer extents within the study corridor area. Impacts to the groundwater supply should be considered in any improvement option that may be brought forward from the planning study.

2.9 Floodplains and Floodways

A floodplain is any land susceptible to being inundated by floodwaters from any source. This can include low-lying areas that fill with water during storm events or snow melt or land adjacent to rivers or creeks that flood when waters within those channels rise out of the channel banks. The regulatory floodway is found within a floodplain and is defined as the channel of the river or other watercourse and the land area directly adjacent to the channel, where encroachment is prohibited, that is needed in order to discharge base flood flows without cumulatively increasing the water-surface elevation by more than a designated height (FEMA 2023).

Executive Order (EO) 11988, Floodplain Management, requires efforts be taken to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. The natural and beneficial values of floodplains include providing habitat for fish, wildlife, plants, open space, natural flood moderation, water quality maintenance, and groundwater recharge. EO 11988 requires projects undertaken or funded by 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.

To comply with the EO, a proposed project and its alternatives must be evaluated to determine the effects of any encroachments on the base floodplain. The base floodplain is the area covered by water from the 100-year flood and is a regulatory standard used by federal agencies and states to administer floodplain management programs. The 100-year flood is defined as a flood event that has a 1 percent chance of being equaled or exceeded in any given year.

Federal Emergency Management Agency (FEMA)-issued flood insurance rate maps for Yellowstone County, Montana, indicate the study corridor area is entirely outside of designated flood zones. The nearest designated Flood Zone is associated with Alkali Creek, approximately 1 mile northeast of the study corridor area (FEMA 2025). Flood zones are presented in **Exhibit 9 (Attachment 1**).

2.10 Wetlands

The United States Army Corps of Engineers (USACE) defines wetlands as those areas that are inundated or saturated by surface or groundwater 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 can typically be identified by the existence of three indicators: a dominance of hydrophytic vegetation, hydric soils, and prolonged periods of inundation or saturation. Wetlands examples include swamps, marshes, bogs, seasonal wet meadows, and fringe areas along streams and rivers.

The United States Fish and Wildlife Service (USFWS) is the principal federal agency that provides information to the public on the extent and status of the nation's wetlands. The USFWS has compiled mapping to show wetlands and deepwater habitats in the US, including many parts of Montana, and has made this mapping available through access to the National Wetland Inventory (NWI). NWI wetlands are identified in general accordance with USFWS's publication Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013). NWI maps do not define wetlands for regulatory purposes since the wetlands are identified through aerial photo interpretation. The NWI definition of wetlands requires one or more of the three attributes of wetlands (wetland hydrology, vegetation, or soils) be present to be a wetland.

NWI mapping for the study corridor area is presented in **Exhibit 10 (Attachment 1)**. Wetlands were not identified within or adjacent to the study corridor area (USFWS 2025).

Field-based wetland delineations would be required if improvement options are forwarded from the study that could potentially impact wetlands. Future improvements would need to incorporate project design features to avoid and minimize adverse impacts to wetlands to the maximum extent practicable. Unavoidable impacts to wetlands may require compensatory mitigation in accordance with USACE regulatory requirements and requirements of EO 11990 (Protection of Wetlands). State and federal permits may also be required to construct improvements within wetlands, including CWA Section 404 authorization and CWA Section 401 certification.

3.0 BIOLOGICAL RESOURCES

3.1 Vegetation

The study corridor area is located within the Montana Central Grasslands ecoregion of the Northwestern Great Plains. This ecoregion is comprised of an unglaciated plain that is dissected by many small, ephemeral or intermittent streams, underlain by noncarbonate, fine-grained sedimentary rock of the Tertiary Fort Union Formation. Natural vegetation is primarily grama–needlegrass–wheatgrass species and supports mostly rangeland with some irrigated and unirrigated farms in the Yellowstone Valley (Woods 2002).

Within the study corridor area itself, the landscape has been heavily altered through commercial development and agricultural practices. Vegetation within the corridor is dominated by cultivated crops, landscape plants, and common roadside reclamation species. Small pockets of native vegetation can be found within the study corridor area, particularly at Zimmerman Park, the

southern extent of the study corridor area along the Rimrocks, and at the northwestern extent of the study corridor area. Additionally, a "living snow fence" has been planted along the south side of MT 3 near Apache Trail. Native vegetation within the study corridor area likely includes ponderosa pine (*Pinus ponderosa*), western wheatgrass (*Elymus smithii*), blue grama (*Bouteloua gracilis*), and needle-and-thread (*Stipa comata*).

Table 2 presents the types of land cover within the study corridor area, as determined by Montana Natural Heritage Program (MTNHP) online mapping and the MTNHP Environmental Summary prepared for the study corridor area (MTNHP 2025a). Sub-systems with cover less than one percent of the study corridor area are not included in the table. Refer to **Exhibit 11 (Attachment 1)** and **Attachment 2** for more information on land cover composition and land cover descriptions.

Table 2. Land Cover Composition within Study Corridor Area

System and Sub-System	%
Human Land Use	61%
Commercial/Industrial	18%
Low Intensity Residential	13%
Other Roads	12%
Cultivated Crops	10%
Developed, Open Space	6%
High Intensity Residential	2%
Grassland	19%
Great Plains Mixed-Grass Prairie	11%
Great Plains Sand Prairie	8%
Shrubland, Steppe, and Savanna	11%
Big Sagebrush Steppe	11%
Forest and Woodland	7%
Great Plains Ponderosa Pine Woodland and Savanna	7%

3.1.1 Noxious Weeds

Noxious weeds are weeds designated by federal, state, or local government officials that directly or indirectly cause problems or harm for agriculture, natural resources, wildlife, recreation, navigation, public health, or the environment. Noxious weeds can be invasive or non-native and are generally highly aggressive. They can degrade native vegetative communities, damage riparian areas, compete with native plants, create fire hazards, degrade agricultural and recreational lands, and pose threats to the viability of livestock, humans, and wildlife.

The State of Montana (MDOA 2019) and Yellowstone County have established lists that designate specific weeds as priority noxious weeds. The Yellowstone County Noxious Weed List includes five priority weeds. These include poison hemlock (*Conium maculatum*), common teasel (*Conium maculatum*), puncture-vine (*Tribulus terrestris*), common mullein (*Verbascum thapsus*), and scotch thistle (*Onopordum acanthium*). The Yellowstone County Weed Management Plan (Yellowstone County 2018) provides guidance for managing noxious weeds in Yellowstone County and outlines the County Weed District's roles and responsibilities.

The Montana Weed Control Board has identified three prioritization groups to categorize noxious weeds. Priority 1 weeds are not present or have very little presence in Montana. No Priority 1A and 1B noxious weeds have been documented within the study corridor area. Priority 2A

management includes eradication or containment where less abundant. Priority 2B weeds are abundant in Montana and widespread in many counties. Management of 2A and 2B species is prioritized by local weed districts. Priority 3 are regulated plants, not Montana-listed noxious weeds, but have the potential to generate significant negative impacts.

Table 3 summarizes the list of noxious weeds known to be present within the vicinity of the study corridor area according to the Environmental Summary compiled by MTNHP **(Attachment 2)**.

Table 3. Land Cover Composition within Study Corridor Area Vicinity

Priority Level		Description
1A	Very Little/No Presence	None
1B	Limited Presence	None
2A	Common in Isolated Areas	Common Buckthorn
2B	Abundant and Widespread	Dalmatian Toadflax, Common Tansy, Whitetop, Spotted Knapweed, Common Hound's-tongue, Field Bindweed, Russian Knapweed, Canada Thistle, Leafy Spurge, Sulphur Cinquefoil, Oxeye Daisy
3	Regulated Plants: Not Montana Listed Noxious Weeds	Cheatgrass, Russian Olive

Proposed projects carried forward from this study would implement applicable best management practices, as outlined in the MDT Standard Specifications and the Yellowstone County Weed Management Plan.

3.2 General Wildlife Species

A majority of the study corridor area has been heavily disturbed by various agricultural practices and commercial and residential development. These changes to the landscape have negatively impacted the amount and quality of suitable wildlife habitat. In general, the less developed extents of the study corridor area west of Zimmerman Trail are more likely to provide suitable habitat. In particular, the forested drainages on the north side of MT 3 provide shelter and habitat. These wooded corridors and surrounding habitat still possess specimens of native vegetation that was likely present in this area before its conversion to agriculture and urban/residential development and various species still seek shelter in these corridors today. Zimmerman Park also provides suitable habitat for a variety of species.

3.2.1 Mammals

The MTNHP database records and maps documented observations of species in a known location (MTNHP 2025a). Over 35 species of mammals have been recorded within a 2-mile radius around the study corridor area. Most of these species rely on rangeland, ponderosa pine woodland, or tend to be generalists and are able to adapt to a wide range of environments and are more tolerant of human activities and land use changes. Some of these species include big brown bat (*Eptesicus fuscus*), eastern fox squirrel (*Sciurus niger*), yellow-bellied marmot (*Marmota flaviventris*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and mule deer (*Odocoileus hemionus*). Aerial imagery and MTNHP data confirm there are several black-tailed prairie dog (*Cynomys ludovicianus*) colonies at the northwest extent of the study corridor area.

Animal carcass data for the past 10 years was reviewed, and no carcasses have been recorded within the study corridor area. However, carcass data may not accurately reflect animal-vehicle conflicts throughout the corridor, and not all carcasses result from vehicle collisions. Crash data

between 2010 and 2019 was reviewed, indicating 16 wildlife-related crashes during that period. However, additional, unrecorded incidents may exist. Scoring based on the Montana Wildlife & Transportation Partnership Planning Tool indicates the study corridor area ranks between 41-59 out of 100 and averages 52 based on the need assessment criteria (higher values equate to greater need) (MDT 2025) refer to **Exhibit 12 (Attachment 1)**. Between RP 3 and RP 6 on MT 3, wildlife-vehicle crashes do not appear concentrated but may be associated with segments of residential development to the south and agricultural development to the north. Between RP 6 and RP 8 on MT 3, there may be a correlation between wildlife-vehicle crashes and the segments with forested drainages to the north and agricultural lands to the south.

Montana Fish, Wildlife, and Parks distribution mapping for larger mammals shows the study corridor area as general range for mule deer and pronghorn (*Antilocapra americana*). The study corridor area east of RP 4.2 is identified as general wintering range for white-tailed deer (*Odocoileus virginianus*).

Improvement projects advanced from the corridor study will require coordination with fish and wildlife biologists from state and federal agencies to gain further insight into issues related to the management of these species and to identify measures for avoiding, minimizing, or mitigating adverse effects on species and habitat. The needs and feasibility of wildlife accommodations require consideration in projects forwarded from this study in accordance with MDT's Wildlife Accommodation Process.

3.2.2 Birds

The MTNHP database indicates there are nearly 270 species of birds documented with the potential to occur and nest in the vicinity of the study corridor area. These species include representative songbirds, birds of prey, and waterfowl, including several listed as species of concern (SOC) or special status species (discussed in Section 3.4 below). The most commonly observed birds include American Robin (*Turdus migratorius*), Black-capped Chickadee (*Poecile atricapillus*), House Finch (*Haemorhous mexicanus*), House Sparrow (*Passer domesticus*), and Northern Flicker (*Colaptes auratus*).

Compliance with the USFWS Migratory Bird Treaty Act (MBTA) guidance would be required, and disruption to nesting birds and disturbance of active nests avoided. Measures would need to be implemented to avoid the taking of migratory birds, their eggs, hatchlings, or fledglings during construction. This may include removing any suitable nesting habitats (i.e., trees and shrubs) existing within the construction limits, or those affected by construction, outside of the nesting season (August 16 to April 15).

Any improvements carried forward from this study would consider possible project constraints that may result from seasonal nesting of migratory birds.

3.2.3 Amphibians, Reptiles, and Invertebrates

According to the MTNHP database, amphibian and reptile species documented as occurring within the study corridor area and 2-mile vicinity include, but are not limited to, common sagebrush lizard (*Sceloporus graciosus*), gophersnake (*Pituophis catenifer*), and western milksnake (*Lampropeltis gentilis*). Over 200 invertebrate species have been observed in the study area corridor vicinity.

3.2.4 Fisheries

While numerous fish species have been identified within streams and rivers in the vicinity of the study corridor area, there are no streams or rivers within the study corridor area.

3.3 Threatened and Endangered Species

Section 7(a)(2) of the Endangered Species Act (ESA), as amended, directs that all federal agencies must ensure the actions they authorize, fund, or carry out do not jeopardize the continued existence of endangered or threatened species and that such actions do not destroy or adversely modify designated critical habitat.

The federal list of threatened and endangered species is maintained by the USFWS. Species on this list receive protection under the 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 foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list. **Table 4** shows the federally listed threatened and endangered species identified as potentially occurring within a 0.5-mile radius around the study corridor area. No critical habitat was identified within 0.5 mile of the study corridor area.

Table 4. Threatened and Endangered Species

Group	Species Name	Federal Status	Habitat Requirements
Invertebrate Species	Monarch Butterfly *Danaus plexippus*	Proposed Threatened	Often found in open areas like native prairies, foothills, valley bottoms, weedy fields, roadsides, pastures, marshes, and suburban areas. They require milkweeds to lay eggs and blooming flowers for nectar during their breeding and migration seasons. Additionally, monarchs need trees for roosting during their migration.
	Suckley's Cuckoo Bumble Bee *Bombus suckleyi*	Proposed Endangered	The historical distribution of this species includes prairies, grasslands, meadows, urban and agricultural areas, and woodlands. Regardless of habitat type, this species cannot successfully reproduce without suitable host colonies and requires a diversity of native floral species for nutrition.

Source: MTNHP Field Guide (MTNHP 2025b)

Both of the identified species have the potential to occur within the study corridor area. Despite human uses such as agriculture and commercial/residential development, some habitat in the study corridor area is suitable habitat for these species.

Monarch Butterfly: Weedy fields, roadsides, and suburban areas are all found within the study corridor area and vicinity. Additionally, milkweed (*Asclepias sp.*) has also been documented within the general vicinity of the study corridor area.

Suckley's Cuckoo Bumble Bee: While the Suckley's cuckoo bumble bee has not been documented in Yellowstone County, as an obligate social parasite, many of the known host species, including white-shouldered bumble bee (*Bombus appositus*), yellow bumble bee (*Bombus fervidus*), Nevada bumble bee (*Bombus nevadensis*), Western bumble bee (*Bombus occidentalis*), and red-belted bumble bee (*Bombus rufocinctus*), have been observed within 2 miles of the study corridor area (MTNHP 2025b).

Any improvements forwarded from the corridor study must undergo review for compliance with the provisions of the ESA. Because the listing status of species and critical habitat can change over time, an up-to-date list of potentially affected federally listed species and designated critical habitat must be reviewed for any project carried forward from this study.

3.4 State Species of Concern and Special Status Species

Montana SOCs are native animals or plants that are at-risk due to declining population trends, threats to their habitats, and restricted distribution, among other factors. Designation as a SOC is based on the Montana Status Rank and is not a statutory or regulatory classification. Rather, these designations provide information that helps resource managers make proactive decisions regarding species conservation and data collection priorities.

Montana special status species are species that have some legal protections in place but are otherwise not Montana SOC. Bald and Golden Eagles are special status species because these birds are no longer protected under the ESA. The Bald Eagle is also no longer considered a Montana SOC; however, both species are still protected under the Bald and Golden Eagle Protection Act of 1940.

According to the environmental summary provided by MTNHP, 25 terrestrial SOC and one plant SOC have documented occurrences within the study corridor area or within a 2-mile radius around the study corridor area (MTNHP 2025a) (**Attachment 2**). **Table 5** presents the SOC documented in the area, including their state rank and habitat needs. **Exhibit 13 (Attachment 1)** shows the locations of these species in relation to the study corridor area.

Table 5. Species of Concern

Group	Species Name	State Rank	Habitat Description
Mammal Species	Black-tailed Prairie Dog *Cynomys ludovicianus*	S3	Colonies are found on flat, open grasslands and shrub/grasslands with low, relatively sparse vegetation. Occupied habitat is dominated by western wheatgrass, blue grama, and big sagebrush. Fine to medium textured soils are preferred.
	Little Brown Myotis *Myotis lucifugus*	S3	Commonly found in forested lands near water. Forages over water. Summer day roosts include attics, barns, bridges, snags, loose bark, and bat houses. Maternity roosts are primarily buildings. Hibernacula include caves and mines.

Group	Species Name	State Rank	Habitat Description
Mammal Species(cont.)	Long-eared Myotis *Myotis evotis*	S3	Occupy a wide range of rocky and forested habitats over a broad elevation gradient. Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures. Hibernacula include caves and abandoned mines.
	Long-legged Myotis *Myotis Volans*	S3	Occurs mostly in forested mountain regions and river bottoms, also at high elevations. Summer day roosts include trees, rock crevices, fissures in stream banks, and abandoned buildings. Hibernacula include caves and mines.
	Northern Hoary Bat *Lasiurus cinereus*	S3B	Typically occupies forested areas during the summer. They are often found foraging over water sources within forested terrain, including both conifer and hardwood forests, as well as along riparian corridors. They are reported over a broad elevation range from (1,900 to 9,100 feet) and are probably most common at lower elevations throughout the summer.
	Spotted Bat *Euderma maculatum*	S4	Typically found in open arid habitats with Utah juniper and sagebrush, sometimes mixed with limber pine or Douglas-fir, or in grassy meadows within ponderosa pine savannah. They are often associated with cliffs, rocky outcrops, and water sources. These bats roost in caves and crevices in cliffs and canyons and are known to forage near isolated ponds and large limestone escarpments. Their winter habitat is not well documented.
	Townsend's Big-eared Bat *Corynorhinus townsendii*	S3	Habitat includes Douglas-fir, lodgepole pine, and ponderosa pine forests, juniper-sagebrush scrub, and cottonwood bottomland. Maternity roosts and hibernacula include caves and abandoned mines.
Bird Species	Bobolink *Dolichonyx oryzivorus*	S3B	Ground nesting birds that prefer tall grass and mixed-grass prairies. Prefers fields with high grass-to-legume ratio that were historically hay fields.
	Brewer's Sparrow *Spizella breweri*	S3B	Mostly in sagebrush and grassland areas. They primarily breed in shrub-steppe habitats dominated by sagebrush. In central Montana, they will breed in sagebrush averaging 16 inches high.

Group	Species Name	State Rank	Habitat Description
Bird Species (cont.)	Burrowing Owl *Athene cunicularia*	S3B	Found in open grasslands, where abandoned burrows dug by mammals such as ground squirrels (*Spermophilus* spp.), prairie dogs (*Cynomies* spp.) and badgers (*Taxidea taxus*) are available. Black-tailed prairie dog (*Cynomys ludoviscianus*) and Richardson's ground squirrel (*Spermophilus richardsonii*) colonies provide the primary and secondary habitat.
	Cassin's Finch *Haemorhous cassinii*	S3	Occurs in major forest and timber-harvest regime habitats, including riparian communities; however, prefers ponderosa pine and postfire forests. Has also been known to occur in lodgepole pine, sagebrush, and grassland habitats, but less often.
	Great Blue Heron *Ardea herodias*	S3	Marshes, swamps, shores, and tideflats. Very adaptable. Forages in any kind of calm fresh waters or slow-moving rivers, also in shallow coastal bays. Nests in trees or shrubs near water, sometimes on ground in areas free of predators.
	Greater Sage-Grouse *Centrocercus urophasianus*	S2	Closely associated with sagebrush habitat types. Adapted to a broad mosaic throughout its range, including relatively tall sagebrush, relatively low sagebrush, forb-rich mosaics with low and tall sagebrush, riparian meadows, steppe, scrub, willow, and sagebrush savanna.
	Lewis's Woodpecker *Melanerpes lewis*	S2B	Open forest and woodland, often logged or burned, including oak, coniferous forest (primarily ponderosa pine), riparian woodland, and orchards, less commonly in pinyon-juniper. In the Bozeman area, known to occur in river bottom woods and forest edge habitats.
	Loggerhead Shrike *Lanius ludovicianus*	S3B	Open landscapes with short vegetation, including pastures with fence rows, mowed roadsides, agricultural fields, riparian areas, and open woodlands.
	Mountain Plover *Anarhynchus montanus*	S2B	Prefers breeding habitats similar to other areas within their range, primarily using prairie dog colonies and shortgrass prairie sites. These colonies offer greater visibility, more bare ground, and numerous burrows. During the breeding season, they favor heavily grazed shortgrass prairies dominated by native plants like blue grama and prairie junegrass (*Koeleria cristata*). They often select areas grazed by prairie dogs, sheep, or cattle.

Group	Species Name	State Rank	Habitat Description
Bird Species (cont.)	Pinyon Jay *Gymnorhinus cyanocephalus*	S3	Low-elevation ponderosa pine and limber pine-juniper woodlands.
	Red-headed Woodpecker *Melanerpes erythrocephalus*	S3B	Typically found in riparian forests along major rivers, open savannahs with sufficient ground cover, snags, and canopy cover, as well as large burns. For nesting, they excavate holes at various heights in live trees, dead stubs, utility poles, or fence posts, and often reuse the same tree or cavity in successive years.
	Sage Thrasher *Oreoscoptes montanus*	S3B	Primarily breeds in areas dominated by big sagebrush (*Artemisia tridentata*). Their abundance increases with more sagebrush cover and decreases with more grass cover. During spring and fall migration, they use sagebrush habitats, grasslands, and other semi-arid areas, while avoiding human-inhabited regions.
	Sprague's Pipit *Anthus spragueii*	S3B	Requires native prairies with medium to intermediate height grasses and can often be found in areas with taller grasses. This species is more abundant in these areas compared to exotic vegetation. It is area-sensitive, needing large expanses of suitable habitat. Additionally, this species breeds in alkaline meadows and around the edges of alkaline lakes.
	Veery *Catharus fuscescens*	S3B	In Montana, they are mostly in willow thickets and cottonwoods along streams and lakes. They can be found in riparian areas, valleys, and low-mountain canyons. Important plant habitat includes box elder, alder, aspen, cottonwood, lodgepole pine, and willows.
	Yellow-billed Cuckoo *Coccyzus americanus*	S3B	Prefers breeding habitats such as open woodlands with thick undergrowth, parks, and deciduous riparian woodlands. They typically nest in tall cottonwood and willow riparian woodlands, with nests found in trees, shrubs, or vines, usually 1 to 3 meters above the ground. The western subspecies specifically require dense riparian forests of at least 10 hectares with a canopy cover of at least 50% in both the understory and overstory. These birds are rarely found at higher elevations.

Group	Species Name	State Rank	Habitat Description
Reptile Species	Greater Short-horned Lizard *Phrynosoma hernandesi*	S3	Inhabits sagebrush and grassland habitats, sedimentary rock outcrops, glacial drift, and open stands of Limber Pine, Utah Juniper, or Ponderosa Pine. They prefer open, bare ground and loose, sun-baked soils. Additionally, they inhabit short-grass and mixed-grass prairies, sagebrush, other shrublands, and open coniferous forests with sparse ground-level vegetation and easy access to sunlight. Soil substrates vary from rocky to sandy but usually include loose soils.
	Plains Hog-nosed Snake *Heterodon nasicus*	S2	Prefers dry, sandy, or gravelly areas in grassland, open sand prairies, or sand dunes. Sometimes utilizes mixed forest habitats and cropland.
	Western Milksnake *Lampropeltis gentilis*	S2	Prefers areas of open sagebrush-grassland habitat and ponderosa pine savannah with sandy soils, most often in or near areas of rocky outcrops and hillsides or badland scarps, sometimes within city limits.
Plant Species	Bractless Hedge-hyssop *Gratiola ebracteata*	S2	Drying mud around ponds in the foothills and on the plains

Source: MTNHP Field Guide (MTNHP 2025b)

Bald and Golden Eagles are protected under the MBTA and the Bald and Golden Eagle Protection Act of 1940, 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 defines “take” as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. According to data provided by MTNHP, no Bald or Golden Eagle nests have been identified within a 2-mile radius of the study corridor area.

The Greater Sage Grouse is also a Montana SOC protected under the Montana Greater Sage-Grouse Habitat Conservation Program. A review of the Montana Sage Grouse Habitat Conservation Program shows the study corridor area falls outside the core, general, or connectivity habitat for sage grouse (DNRC 2025). Therefore, consultation under the Montana Sage Grouse Habitat Conservation Program would not be required for any project carried forward from this study.

Should projects be carried forward from this corridor study, additional review of databases documenting SOC and special status species occurrences must be conducted, and an evaluation of habitats near proposed projects must be completed to determine suitability for SOC and special status species. Measures to avoid or minimize impacts to these species and their habitat would be incorporated into project designs and implementation.

4.0 SOCIAL AND CULTURAL RESOURCES

4.1 Socioeconomics and Community Demographics

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, which directed federal programs, policies, and activities to avoid disproportionately high and adverse human health and environmental effects on minority and low-income populations, has been rescinded. However, evaluation of impacts to communities and differing socioeconomic classes, including the data and assessments previously stipulated under EO 12898, have been provided for the study corridor area and are discussed in the following section.

Nine census tracts that intersect or are near the study corridor area were reviewed **Exhibit 14 (Attachment 1**). **Tables 6 and 7** provide census data information on socioeconomic characteristics and community demographics.

Table 6. Populations Below Poverty Level in Study Area Census Tracts

Geographic Unit	Total Population	Below Poverty Level
Montana	1,079,200	129,998 / 12.0%
Yellowstone County	163,620	16,737 / 10.2%
Census Tract 5	4,557	363 / 8.0%
Census Tract 6*	1,996	211 / 10.6%
Census Tract 7.04*	3,417	199 / 5.8%
Census Tract 12	3,561	627 / 17.6%
Census Tract 13*	6,336	223 / 3.5%
Census Tract 14.02*	7,176	289 / 4.0%
Census Tract 18.01*	7,771	166 / 2.1%
Census Tract 18.05	3,890	298 / 7.7%
Census Tract 18.06	2,225	21 / 0.9%

*Census Tracts that intersect with the Study Corridor Area

According to the United States Census Bureau (USCB) data (USCB 2023a), the percentage of people in poverty within the study corridor area vicinity ranges from approximately 0.9% in Census Tract 18.06 to 17.6% in Census Tract 12. The percentage in Tract 12 is higher than the Yellowstone County average (10.2%) and State of Montana average (12.0%); however, the vast majority of census tracts within the study corridor area fall below the state and county averages.

According to USCB data (USCB 2023b), less than 4% of the population within the study corridor area vicinity identified as Black or African American individuals. Similar percentages were observed for individuals identifying as Asian alone and American Indian and Alaska Native. Less than 1% of the population identified as Native Hawaiian or Pacific Islander. The percentages for Hispanic or Latino range from 1.2% in Census Tract 18.06 to 10.7% within Census Tract 12. These demographic percentages are consistent with, or slightly higher than, corresponding percentages for either Yellowstone County or the State of Montana shown below:

- Yellowstone County: 0.5% Black or African American, 3.8% American Indian and Alaska Native, 0.8% Asian alone, 0.0% Native Hawaiian or Pacific Islander, and 6.4% Hispanic or Latino
- State of Montana: 0.5% Black or African American, 5.5% American Indian and Alaska Native, 0.8% Asian alone, 0.0% Native Hawaiian or Pacific Islander, and 4.8% Hispanic or Latino

Table 7. Demographics in Study Area Census Tracts

Geographic Unit	Total Population	White alone	Black or African American	American Indian and Alaska Native	Asian alone	Native Hawaiian or Pacific Islander	Hispanic or Latino	Other
Montana	1,105,072	929,206 / 84.1%	5,243 / 0.5%	60,745 / 5.5%	8,944 / 0.8%	481 / 0.0%	53,233 / 4.8%	48,519 / 4.4%
Yellowstone County	167,340	140,456 / 83.9%	824 / 0.5%	6,385 / 3.8%	1294 / 0.8%	74 / 0.0%	10,717 / 6.4%	7,590 / 4.5%
Census Tract 5	4,572	3,838 / 83.9%	10 / 0.2%	93 / 2.0%	35 / 0.8%	0 / 0.0%	385 / 8.4%	211 / 4.6%
Census Tract 6*	2,680	2,425 / 90.5%	39 / 1.5%	43 / 1.6%	9 / 0.3%	3 / 0.1%	49 / 1.8%	112 / 4.2%
Census Tract 7.04*	3,417	2,866 / 83.9%	3 / 0.1%	35 / 1.0%	30 / 0.9%	0 / 0.0%	202 / 5.9%	281 / 8.2%
Census Tract 12	3,597	3,198 / 87.2%	0 / 0.0%	1 / 0.0%	11 / 0.3%	0 / 0.0%	384 / 10.7%	63 / 1.8%
Census Tract 13*	6,428	5,869 / 91.3%	0 / 0.0%	56 / 0.9%	13 / 0.2%	0 / 0.0%	157 / 2.4%	333 / 5.2%
Census Tract 14.02*	7,251	6,439 / 88.8%	0 / 0.0%	54 / 0.7%	11 / 0.2%	0 / 0.0%	642 / 8.9%	105 / 1.4%
Census Tract 18.01*	7, 805	7,328 / 93.9%	0 / 0.0%	15 / 0.4%	30 / 0.4%	0 / 0.0%	133 / 1.7%	227 / 2.9%
Census Tract 18.05	4,184	3,749 / 89.6%	0 / 0.0%	15 / 0.4%	141 /3.4%	0 / 0.0%	65 / 1.6%	214 / 5.1%
Census Tract 18.06	2,328	2,195 / 94.3%	75 / 3.2%	21 / 0.9%	8 /0.3%	0 / 0.0%	29 / 1.2%	0 / 0.0%

*Census Tracts that intersect with the Study Corridor Area

The census data was retrieved from the USCB American Community Survey 2018 – 2023 5-Year Estimates Detailed Tables. Some estimates presented come from sample data and, thus, have sampling errors that may render some apparent differences between geographies statistically indistinguishable.

Actions carried forward from this corridor study should take into consideration potential effects and impacts to communities adjacent to the study corridor area.

4.2 Recreational Resources

Land ownership within the study corridor area is primarily private, with land use dominated by agricultural, residential, and commercial/industrial development. There are multiple recreational resources located within the study corridor area, primarily south of MT 3.

Zimmerman Park was identified as the only public park located within the study corridor area **Exhibit 15 (Attachment 1).** Zimmerman Park is a 71.85-acre public park with several miles of trails. The park is located south of MT 3 in the central portion of the study corridor area (Yellowstone County 1984). In addition, multiple parcels owned by the City of Billings or Yellowstone County are found along the south side of MT 3. These public parcels are designated recreational open spaces that extend the length of Skyline Trail as well as from the top of the Rimrocks to residential areas below.

Skyline Trail is a popular 10-foot-wide paved trail extending from Zimmerman Park to Swords Park and into downtown Billings. Skyline Trail, within the study corridor area, runs parallel to MT 3 on the south side of the roadway. A portion of the Skyline Trail from Skyway Drive to Rimrock Road overlaps with Rimrock Trail. Skyline and Rimrock Trails are paved trails with multiple access

points along MT 3, which include viewpoints and parking areas along the roadway (City of Billings 2025c). Additionally, a separated, paved multi-use path is located parallel to Skyway Drive, beginning at the intersection of Skyway Drive and MT 3 and extending north beyond the limits of the study corridor area.

4.3 Cultural Resources

Cultural resources are properties that reflect the heritage of local communities, states, and nations. The National Historic Preservation Act (NHPA) of 1966, as amended, defines historic properties as sites, buildings, structures, districts (including landscapes), and objects included on, or eligible for inclusion on, the National Register of Historic Places (NRHP), as well as artifacts, records, and remains related to such properties.

To be considered eligible for listing on the NRHP, a property must meet at least one of the following criteria:

- A: Is associated with events that have made a significant contribution to the broad patterns of our history.
- B: Is associated with the lives of persons significant in our past.
- C: Embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possess high artistic values, or that represents a significant distinguishable entity whose components may lack individual distinction.
- D: Yielded, or may likely yield, information important in prehistory or history (36 Code of Federal Regulations Part 60.4).

Section 106 of the NHPA requires federal agencies to consider the effects that a subject undertaking may have on eligible historic properties, determine methods to avoid and minimize or mitigate any adverse effects, and to consult with the State Historic Preservation Office (SHPO) or Tribal Historic Preservation Office regarding those effect determinations.

In addition to the NHPA, federal directives, such as Section 4(f) of the United States Department of Transportation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act, and Montana directives, including the Montana Antiquities Act and the Montana Human Skeletal Remains and Burial Site Protection Act, outline requirements regarding effects of proposed undertakings on historic and archaeological resources and paleontological sites.

As part of this corridor study, a file search was conducted through the Montana SHPO for each section of land the study corridor area intersects. In addition, the NRHP database was searched (NPS 2025). In total, 42 sites were identified. In terms of eligibility for listing on the NRHP, 17 sites are eligible, 9 are ineligible, and the remaining 16 are undetermined (SHPO 2025). NRHP listed sites within the vicinity of the study corridor area are shown on **Exhibit 16 (Attachment 1)**. If improvement options are forwarded from this study, a cultural resources survey of the area of potential affect will be completed for unrecorded historic and archaeological properties. Potential direct and indirect effects to NRHP-eligible properties within the area of potential effect would be considered under Section 106 of the NHPA.

4.4 Section 4(f) Resources

Section 4(f) of the United States Department of Transportation Act of 1966, was enacted to protect publicly-owned parks, recreation areas, wildlife and waterfowl refuges, and public and private historic sites of local, state, and national significance. Before approving a federally-funded project that uses a Section 4(f) property, FHWA must determine that there is no feasible and prudent alternative that avoids the Section 4(f) resource and that the project includes all possible planning to minimize harm; or FHWA makes a finding that the project has a de minimis (minor) impact on the Section 4(f) property. Acquisition of new right-of-way is one type of use of a Section 4(f) property that will trigger a Section 4(f) review if publicly-owned resources or historic properties are present.

There are multiple public open spaces, one park, and several trails/multi-use paths within the study corridor area; however, no wildlife and waterfowl refuges were identified. Additionally, there are 17 NRHP-listed sites and multiple NRHP-eligible or undetermined sites within the study corridor area. If improvement options are forwarded from this study, a determination of effects will be made under Section 106 of the NHPA. A Section 106 determination of "no adverse effect" or "no historic properties affected" would result in a de minimis impact. An "adverse effect" determination is a Section 4(f) use that triggers additional FHWA evaluation. Furthermore, should an action result from this study, minimization and/or avoidance measures should be evaluated for impacts to parks and/or trails. If impacts to parks or trails are deemed unavoidable, an evaluation of Section 4(f) use would be necessary, and a determination of temporary occupancy, de minimis, or adverse effect would be made, all of which would require additional MDT and/or FHWA evaluation.

4.5 Section 6(f) Resources

The National Land and Water Conservation Fund (LWCF) Act, 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 LWCF funds. The Secretary of the Interior must approve any conversion of a LWCF property to a use other than public, outdoor recreation.

The Montana State Parks list of projects funded by LWCF within Yellowstone County was reviewed, and no Section 6(f) properties/resources were identified. The closest Section 6(f) site is Dick Logan Park (also identified as Billings Logan Park), which is approximately 1.6 miles east of the study corridor area. Future LWCF grant funding would need to be reviewed if projects move forward to ensure no Section 6(f) sites are impacted.

4.6 Noise

Project construction and operation of a traffic facility can cause increases in noise levels that may affect sensitive noise receivers in the area. Type I projects involve construction of a highway on a new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. These types of projects can potentially increase noise impacts in an area.

Sensitive noise receptors within the study corridor area primarily include adjacent residential properties and parks. These receptors are found from approximately RP 3 to RP 7 on the south side of MT 3.

Improvement options carried forward from this study may require a noise analysis, consistent with MDT noise policies. Noise abatement measures would be considered if noise levels approach or substantially exceed noise abatement criteria.

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.

The study corridor area is characterized as primarily agricultural or undeveloped lands to the northwest, with mid-density residential areas to the south. The Billings Logan International Airport is located along the northeastern extents of the study corridor area, which is surrounded by commercial and industrial areas. Distant views of Billings and Beartooth Range are visible far to the southwest and the Pryor Mountains to the south. Potential projects carried forward from this study must consider effects on visual resources, particularly projects that may be located on a new alignment, involve expansion, or involve other changes that would alter the character of the existing landscape.

5.0 CONCLUSIONS

This environmental scan report identifies physical, biological, social, and cultural resources within the study corridor area that may be affected by potential future improvements. 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.

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ATTACHMENT 1: STUDY CORRIDOR AREA EXHIBITS

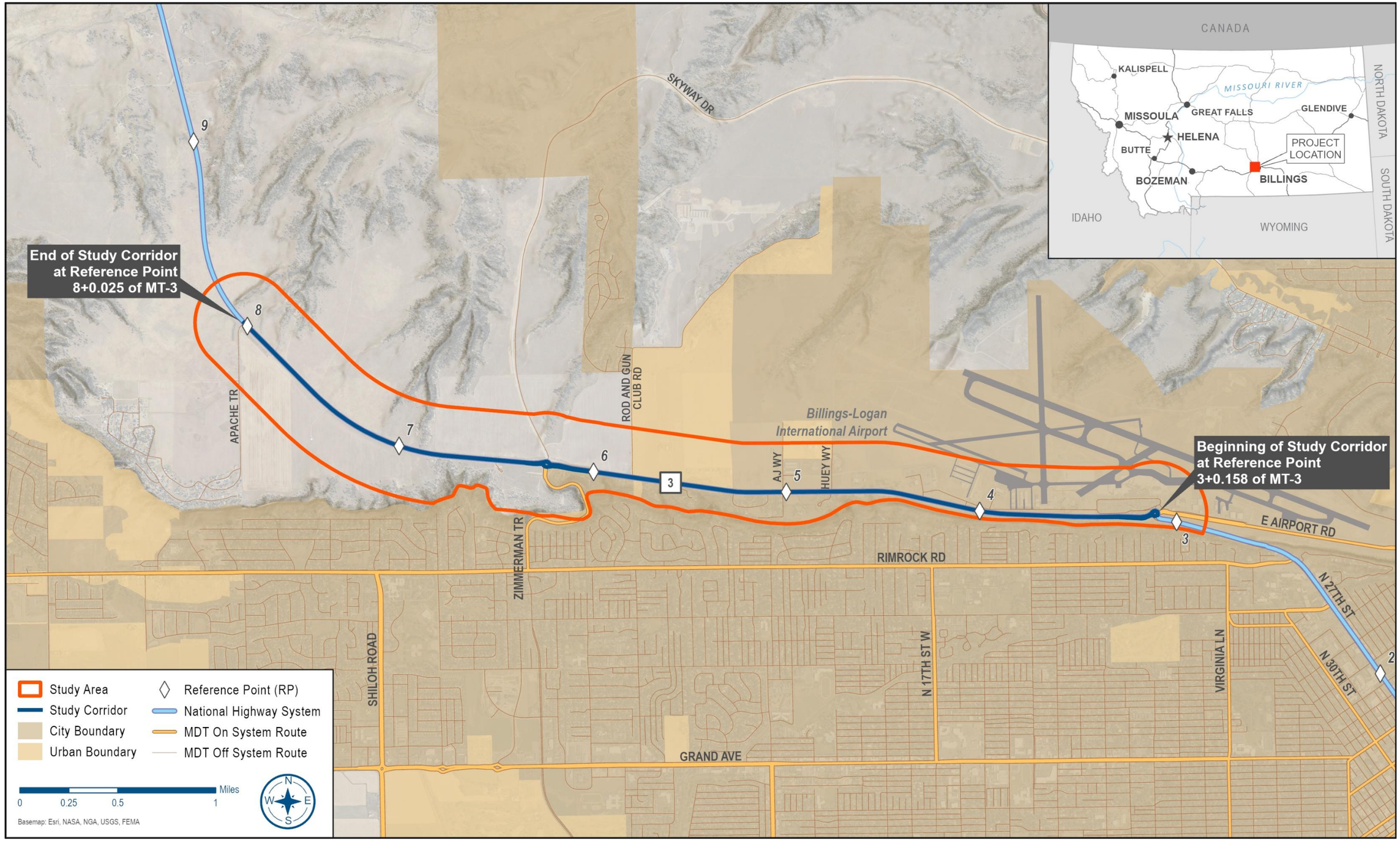
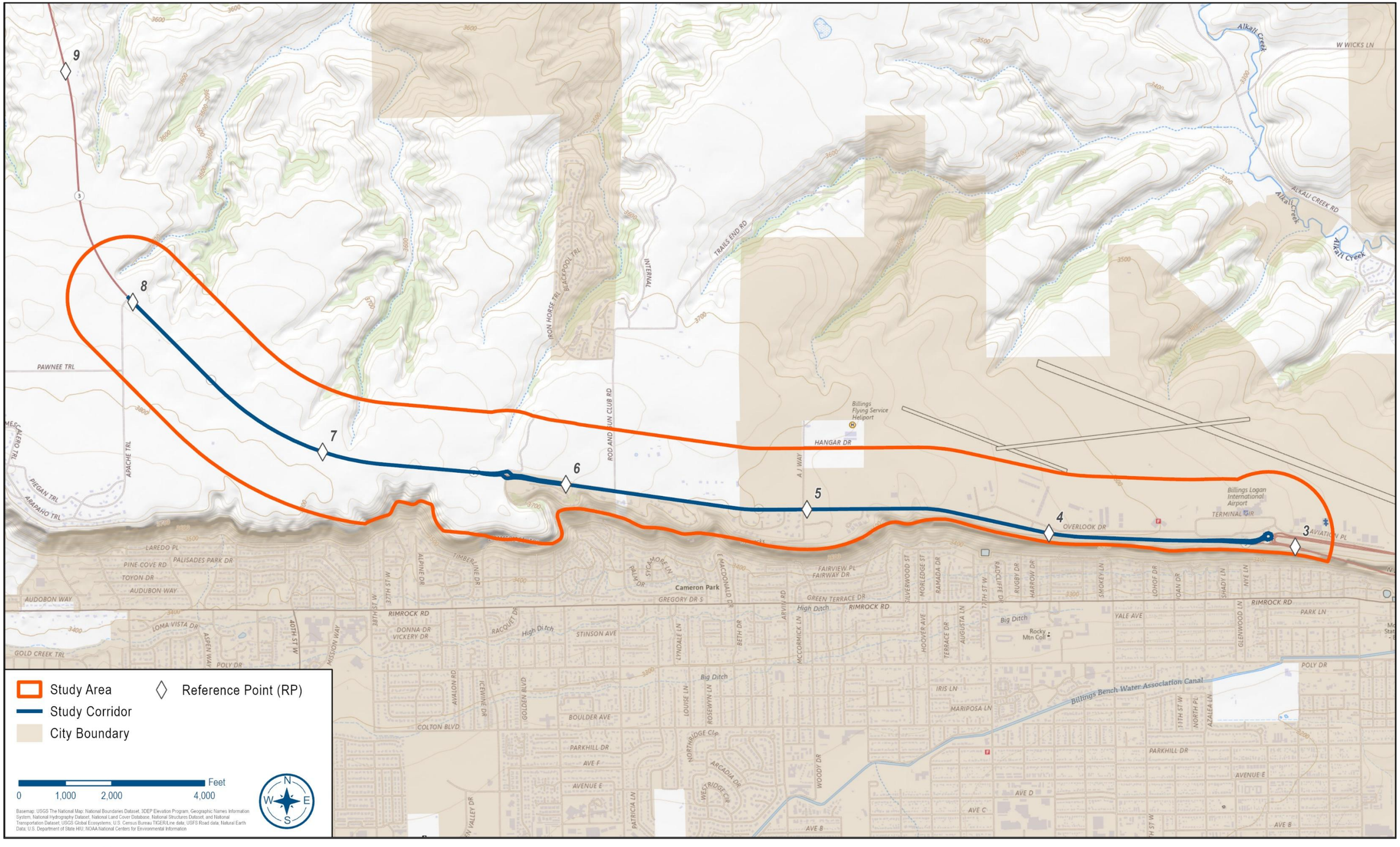


Exhibit 1 – Study Corridor Location



MONTANA 3 BILLINGS CORRIDOR STUDY

Exhibit 2 – Study Corridor Topography

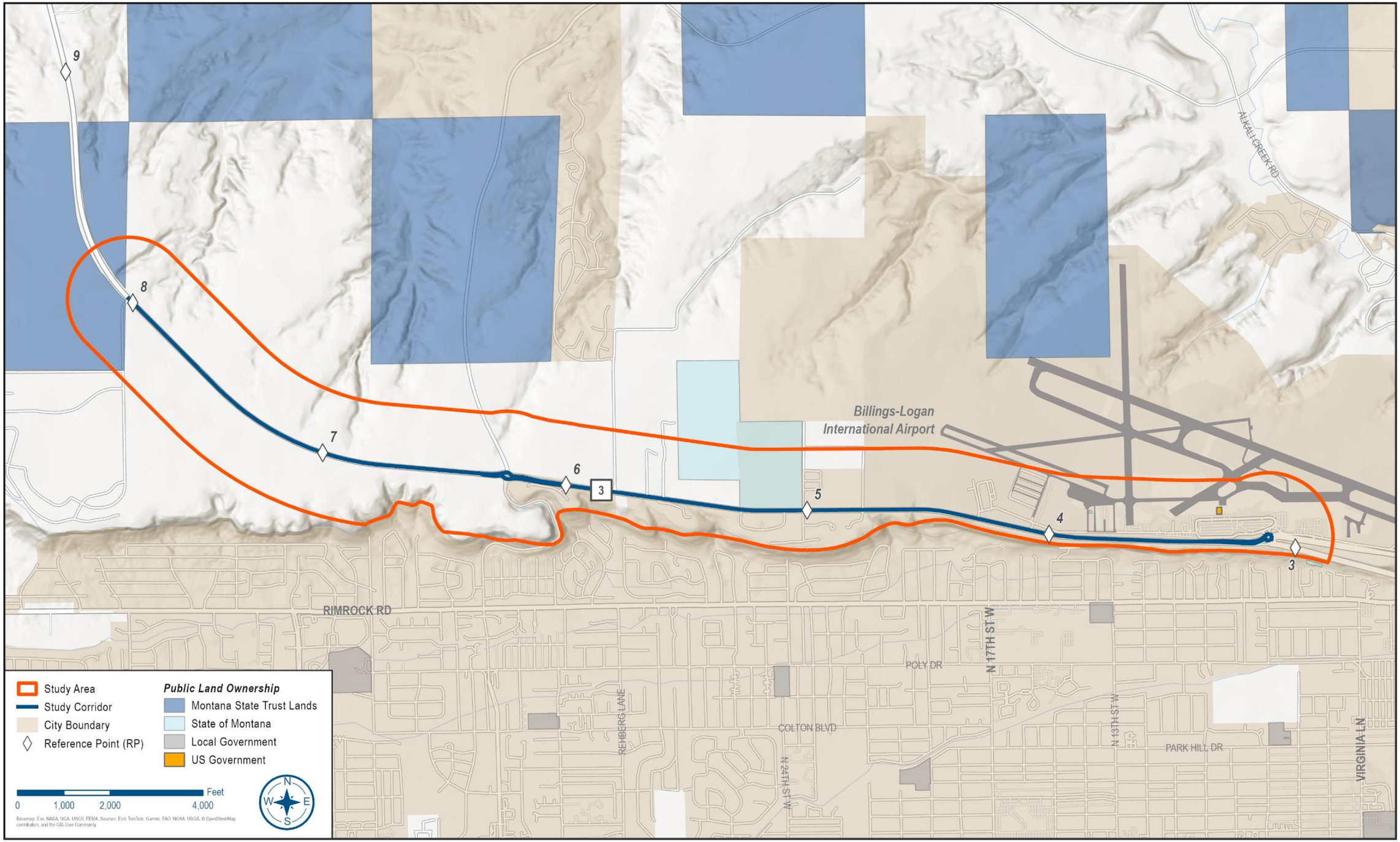


Exhibit 3 – Public Land Ownership

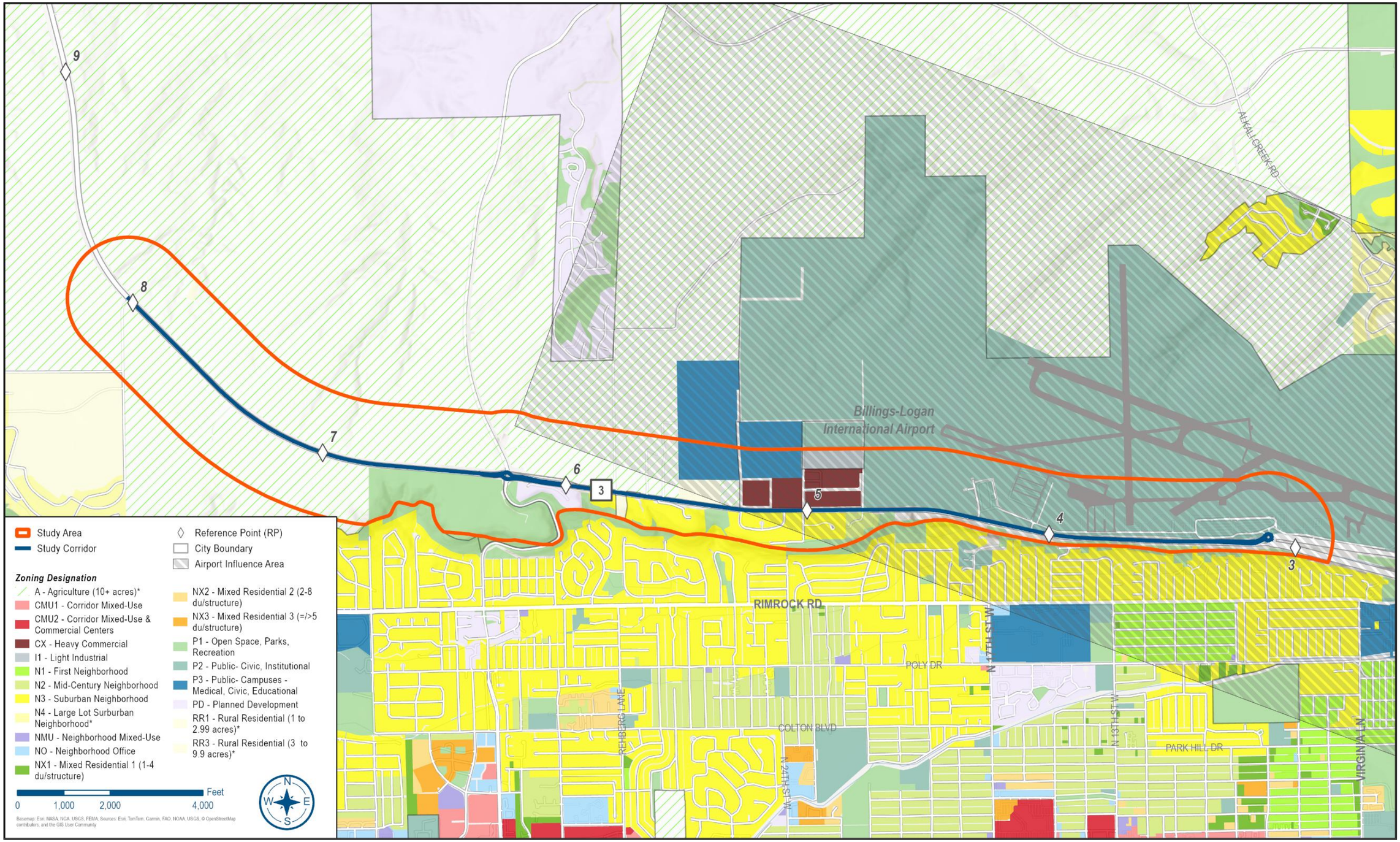


Exhibit 4 – Zoning Designations

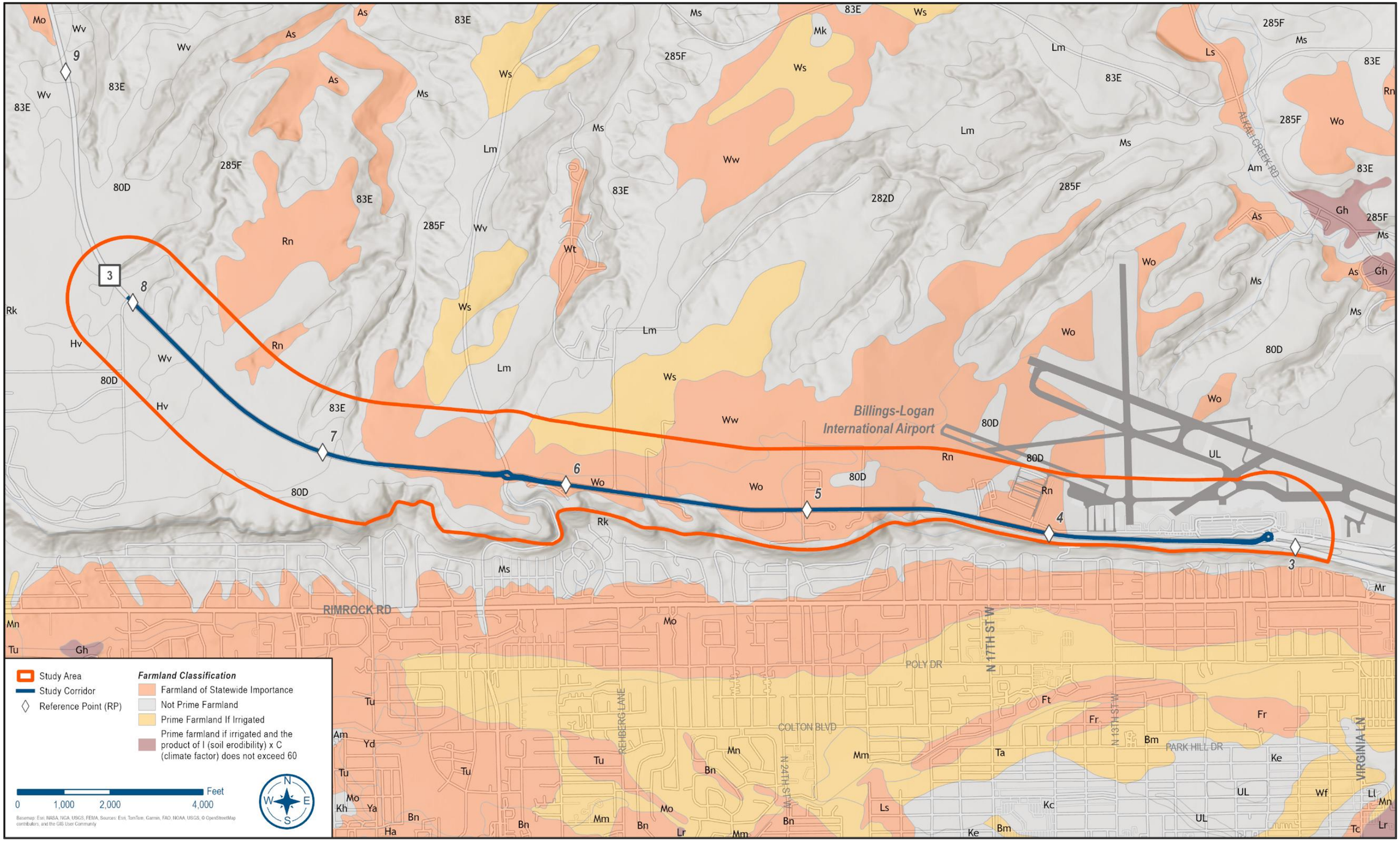
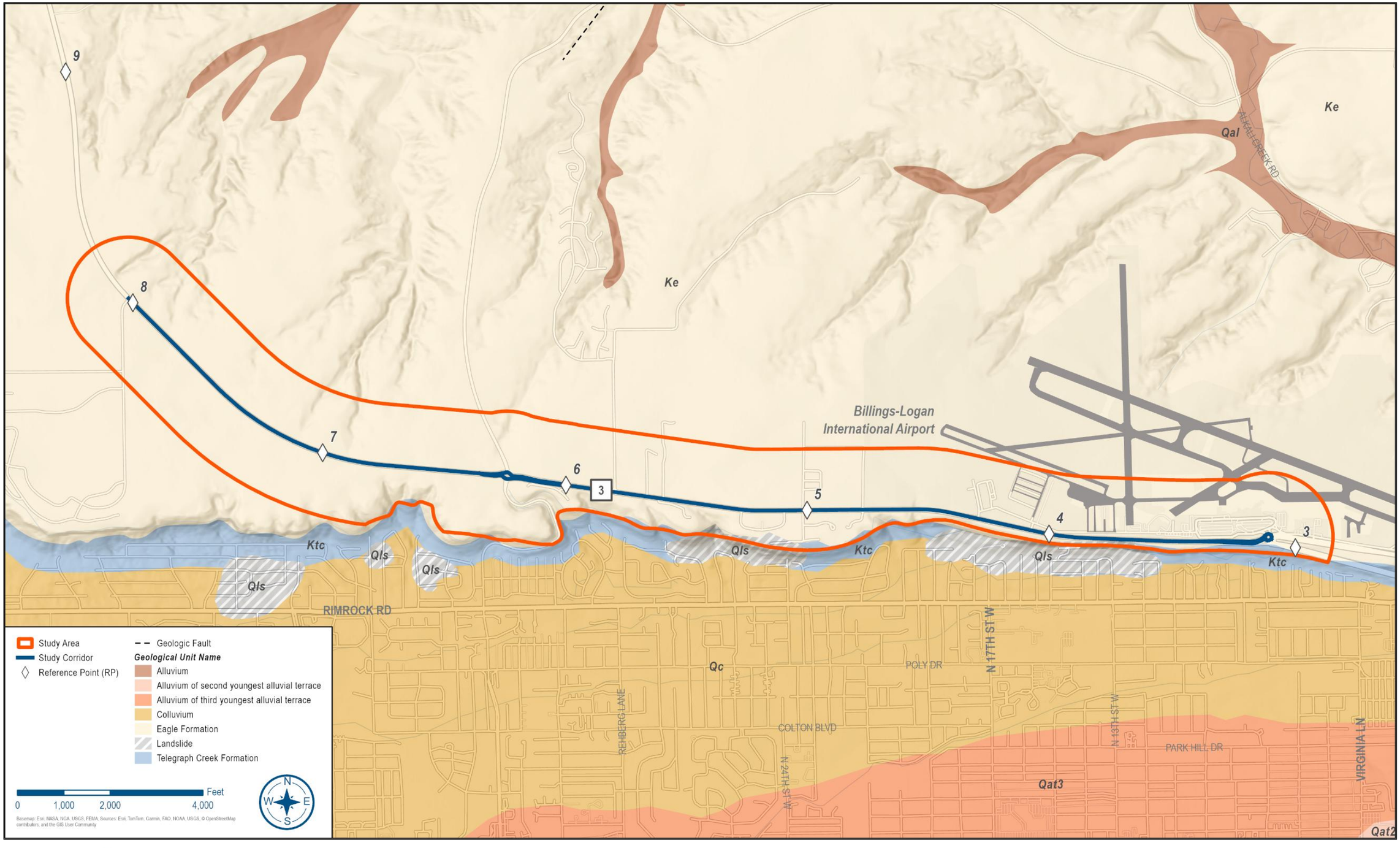


Exhibit 5 – NRCS Farmland Classifications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KEVAL CREEK RD
Billings-Logan
International Airport
Ktc
Qls
Qls
Qls
Qls
Ktc
Qls
Ktc
RIMROCK RD
Qc
POLY DR
N 17TH ST W
REHBERG LANE
COLTON BLVD
N 24TH ST W
N 13TH ST W
PARK HILL DR
VIRGINIA LN
Qat3
Qat2
Study Area
Study Corridor
Reference Point (RP)
Geologic Fault
Geological Unit Name
Alluvium
Alluvium of second youngest alluvial terrace
Alluvium of third youngest alluvial terrace
Colluvium
Eagle Formation
Landslide
Telegraph Creek Formation
Feet
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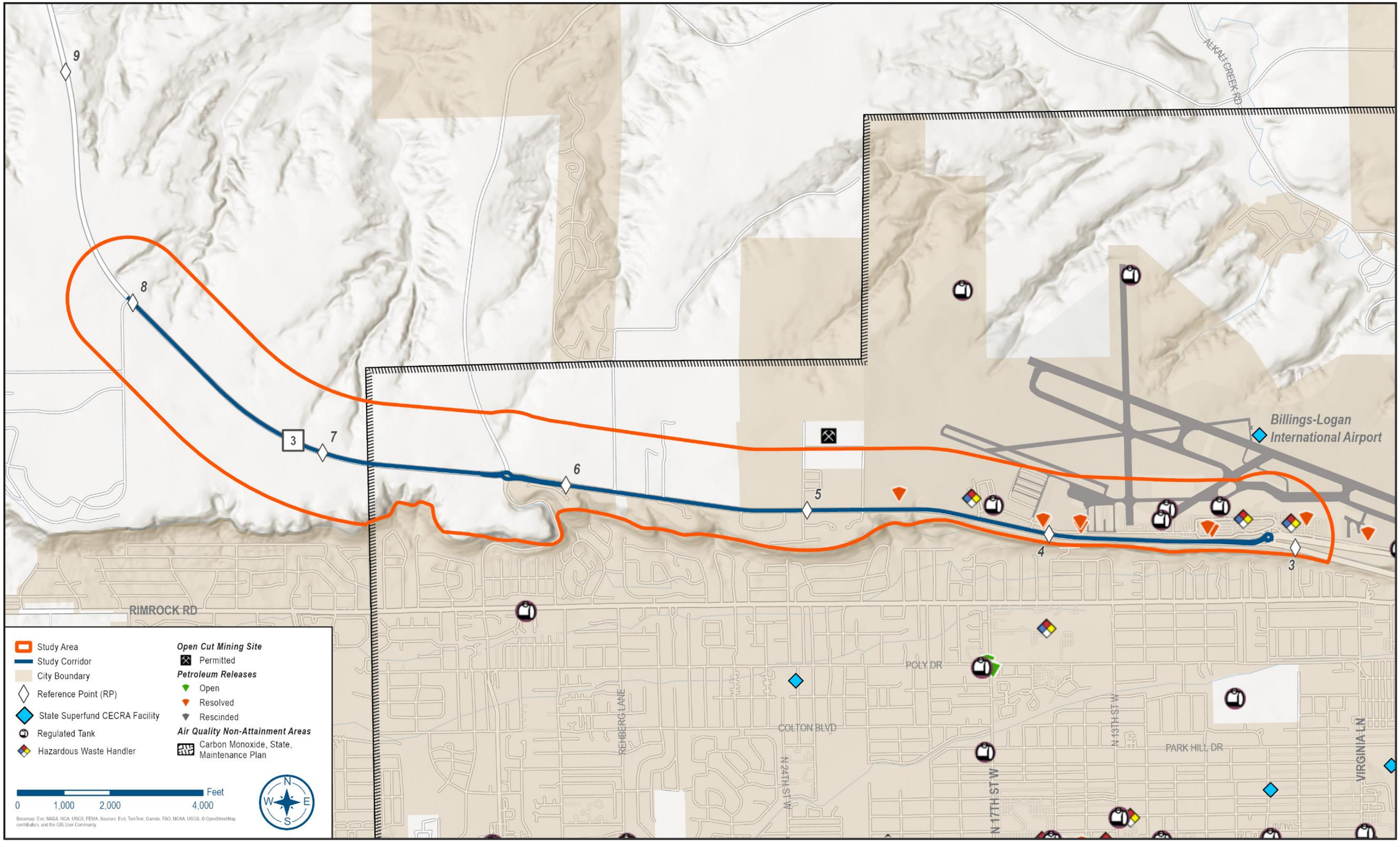
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Billings-Logan International Airport
RIMROCK RD
POLY DR
COLTON BLVD
REHBERG LANE
N 24TH ST W
N 17TH ST W
N 13TH ST W
PARK HILL DR
VIRGINIA LN
Study Area
Study Corridor
City Boundary
Reference Point (RP)
State Superfund CECRA Facility
Regulated Tank
Hazardous Waste Handler
Open Cut Mining Site
Permitted
Petroleum Releases
Open
Resolved
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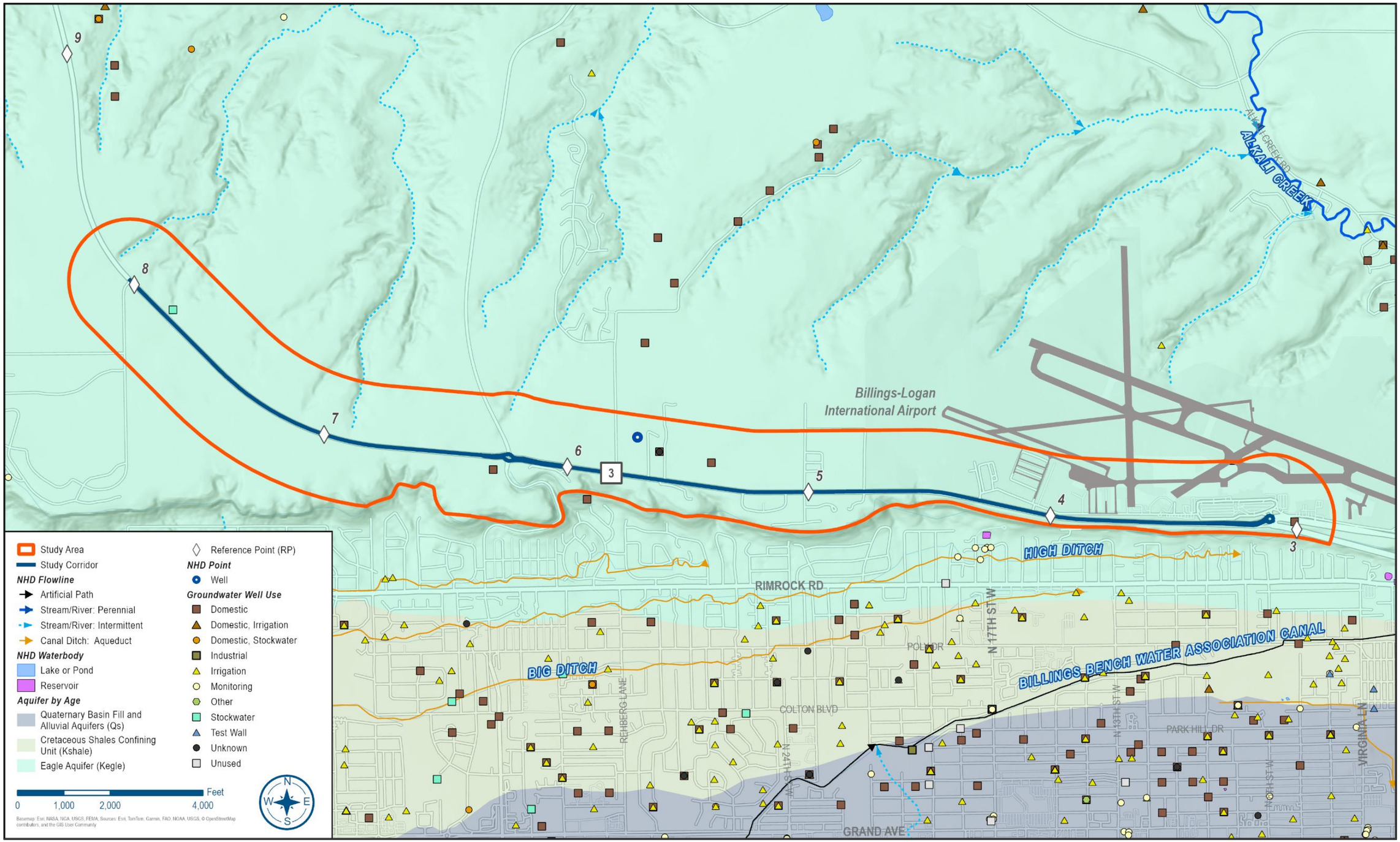
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Billings-Logan
International Airport
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ALKALI CREEK RD
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N 17TH ST W
POLY DR
BIG DITCH
REHBERG LANE
COLTON BLVD
N 27TH ST W
BILLINGS BENCH WATER ASSOCIATION CANAL
N 13TH ST W
PARK HILL DR
VIRGINIA LN
GRAND AVE
Study Area
Study Corridor
NHD Flowline
Artificial Path
Stream/River: Perennial
Stream/River: Intermittent
Canal Ditch: Aqueduct
NHD Waterbody
Lake or Pond
Reservoir
Aquifer by Age
Quaternary Basin Fill and Alluvial Aquifers (Qs)
Cretaceous Shales Confining Unit (Kshale)
Eagle Aquifer (Kegle)
Reference Point (RP)
NHD Point
Well
Groundwater Well Use
Domestic
Domestic, Irrigation
Domestic, Stockwater
Industrial
Irrigation
Monitoring
Other
Stockwater
Test Wall
Unknown
Unused
Feet
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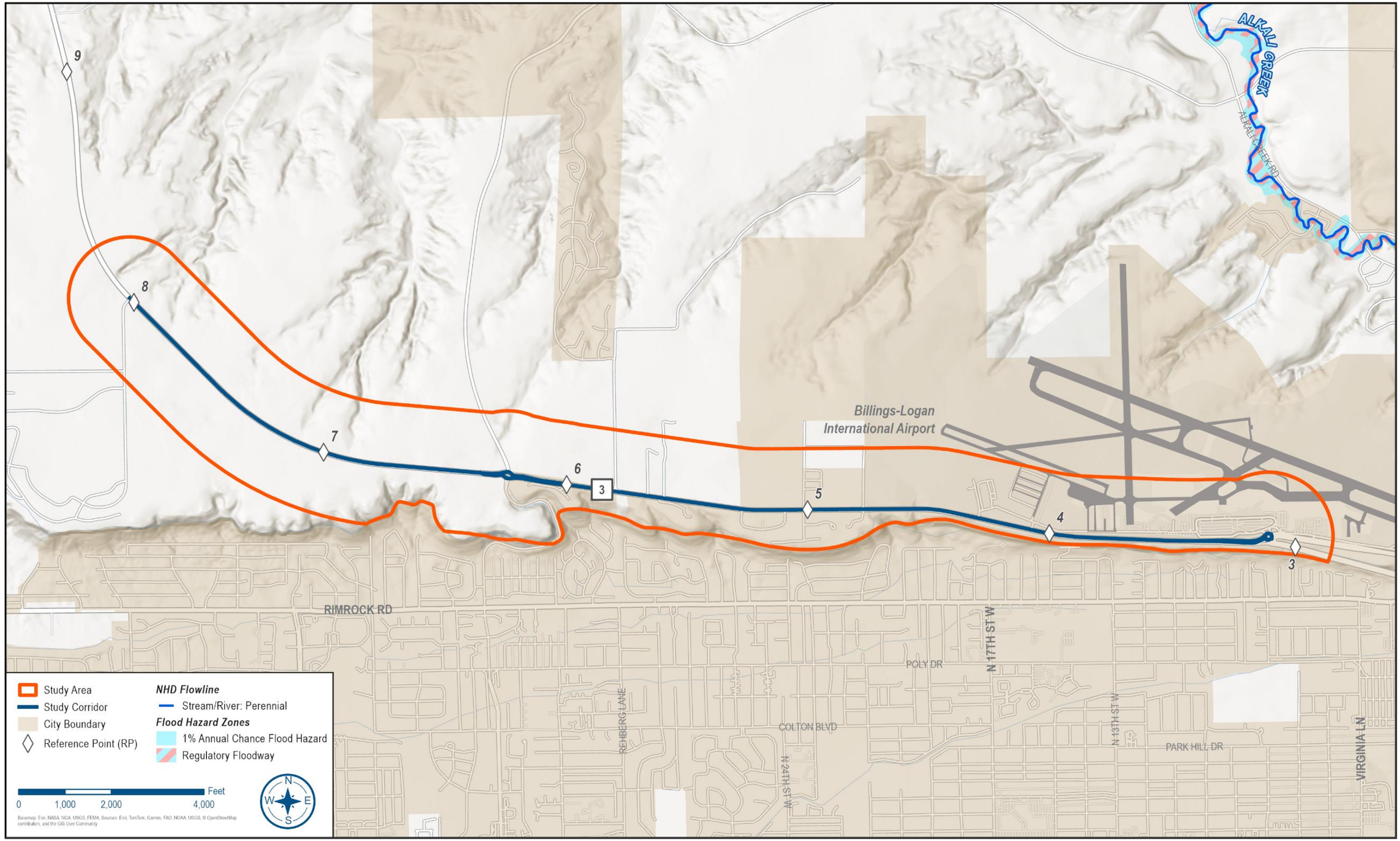
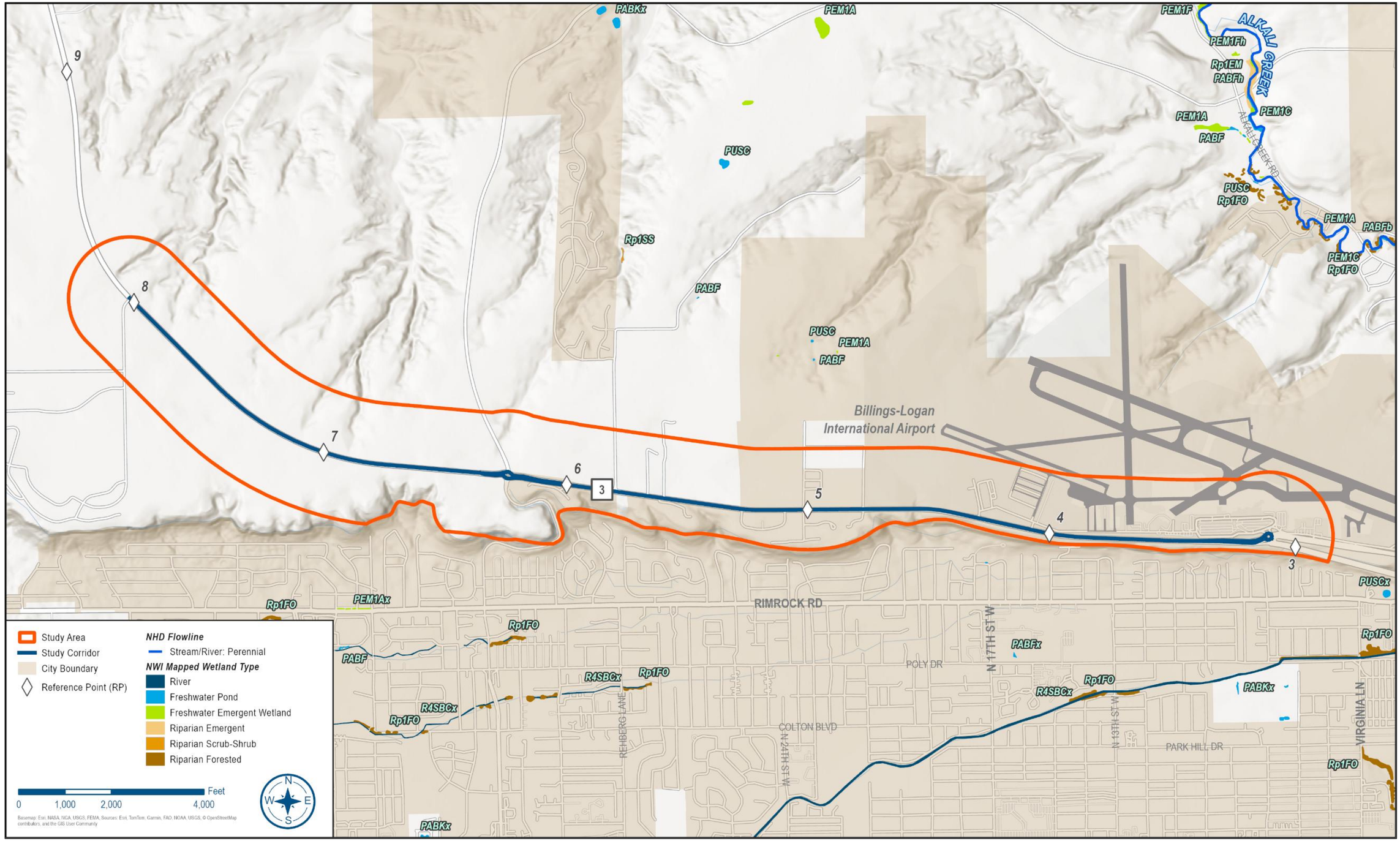


MONTANA 3 BILLINGS CORRIDOR STUDY

Exhibit 9 - Floodplains


PABKx
PEM1A
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PEM1Fh
ALKALI CREEK
Rp1EM
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PEM1C
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PABF
ALKALI CREEK RD
PUSC
PUSC
Rp1FO
PEM1A
PABFb
PEM1C
Rp1FO
Rp1SS
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PUSC
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Billings-Logan
International Airport
RIMROCK RD
POLY DR
COLTON BLVD
PARK HILL DR
N 17TH ST W
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REHBERG LANE
VIRGINIA LN
PUSCx
Rp1FO
PEM1Ax
Rp1FO
PABF
R4SBCx
Rp1FO
R4SBCx
Rp1FO
PABFx
Rp1FO
R4SBCx
PABKx
Rp1FO
PABKx
Study Area
Study Corridor
City Boundary
Reference Point (RP)
NHD Flowline
Stream/River: Perennial
NWI Mapped Wetland Type
River
Freshwater Pond
Freshwater Emergent Wetland
Riparian Emergent
Riparian Scrub-Shrub
Riparian Forested
Feet
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4,000
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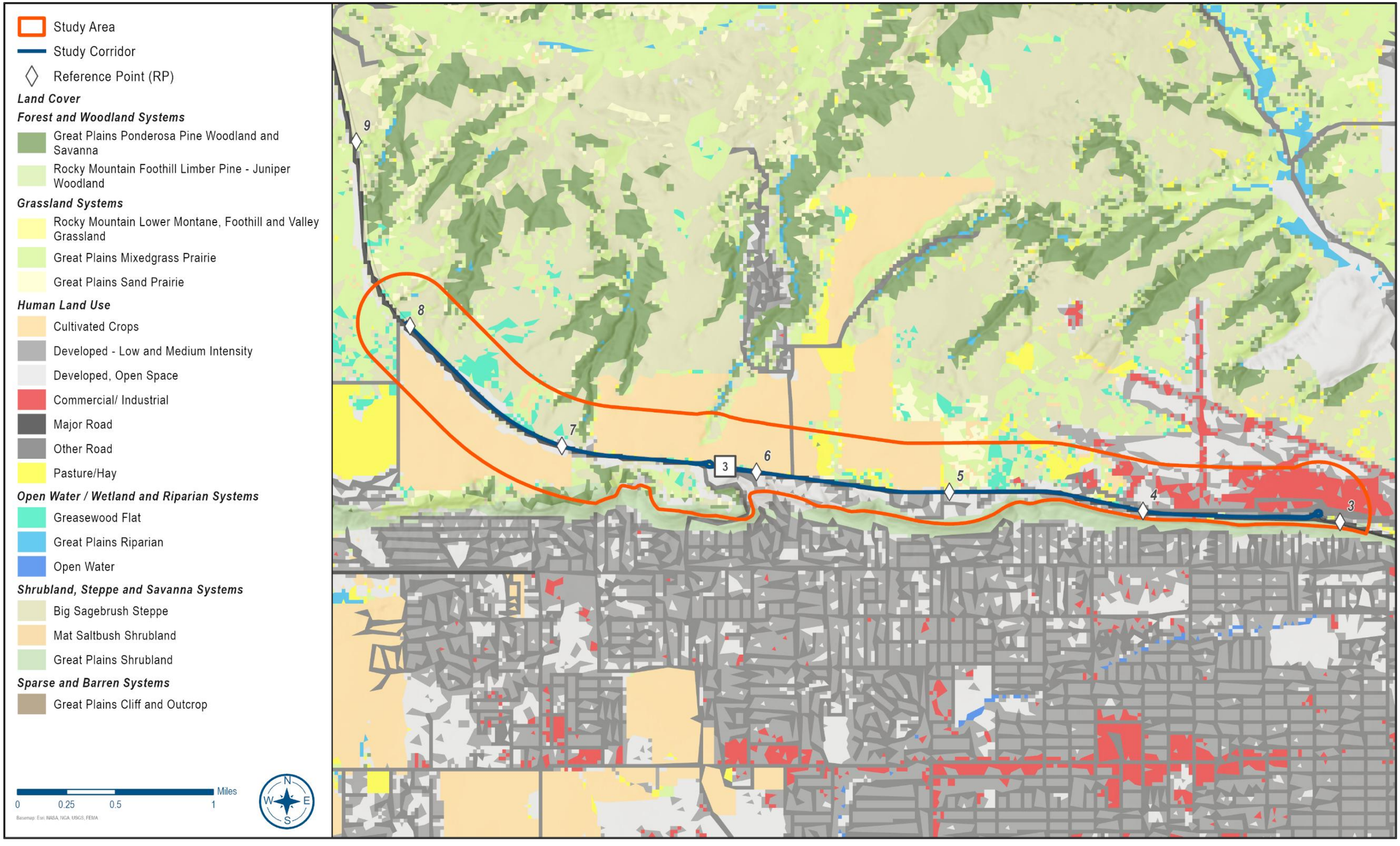

Exhibit 11 – Land Cover

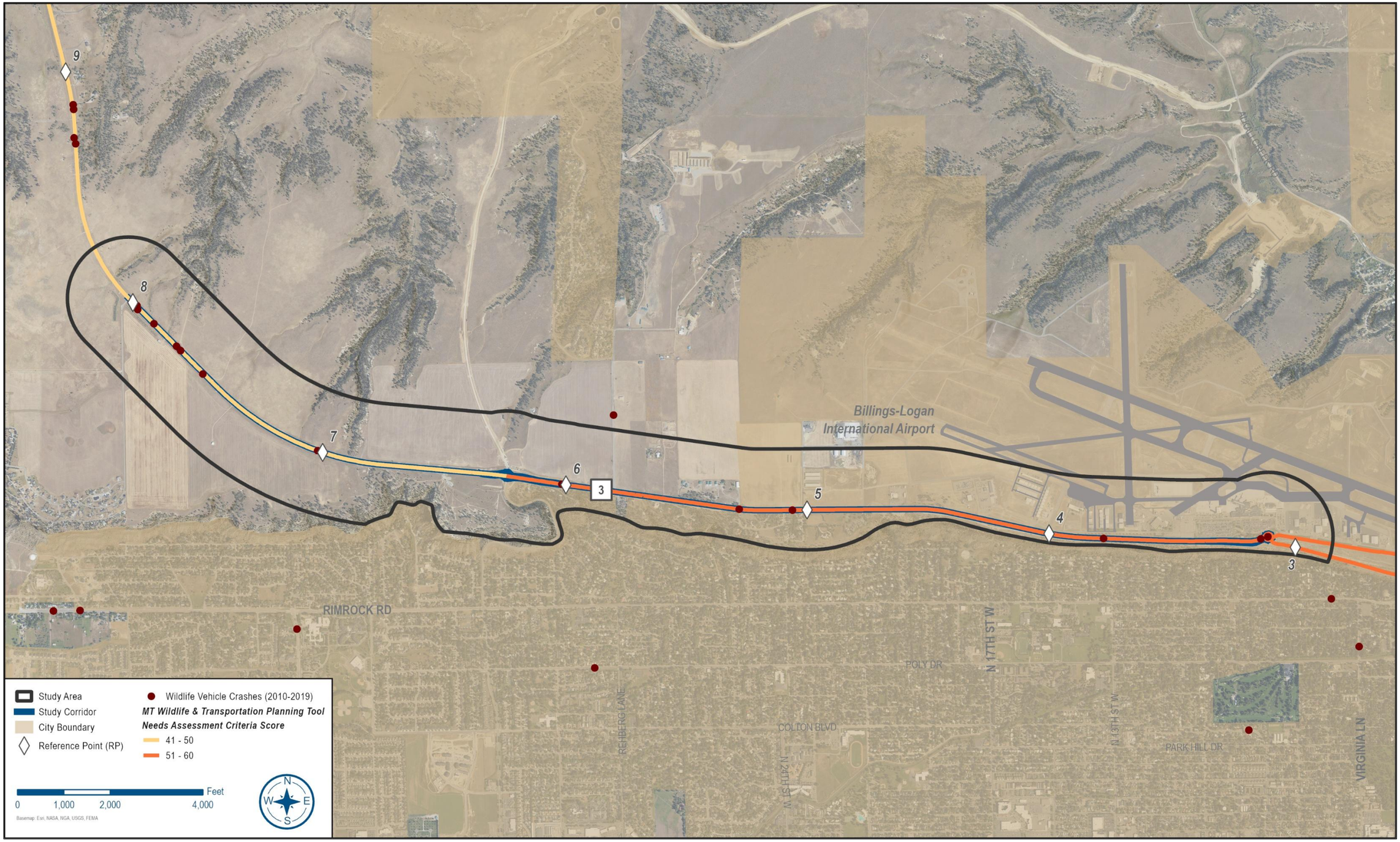

Exhibit 12 – Wildlife-Vehicle Collisions

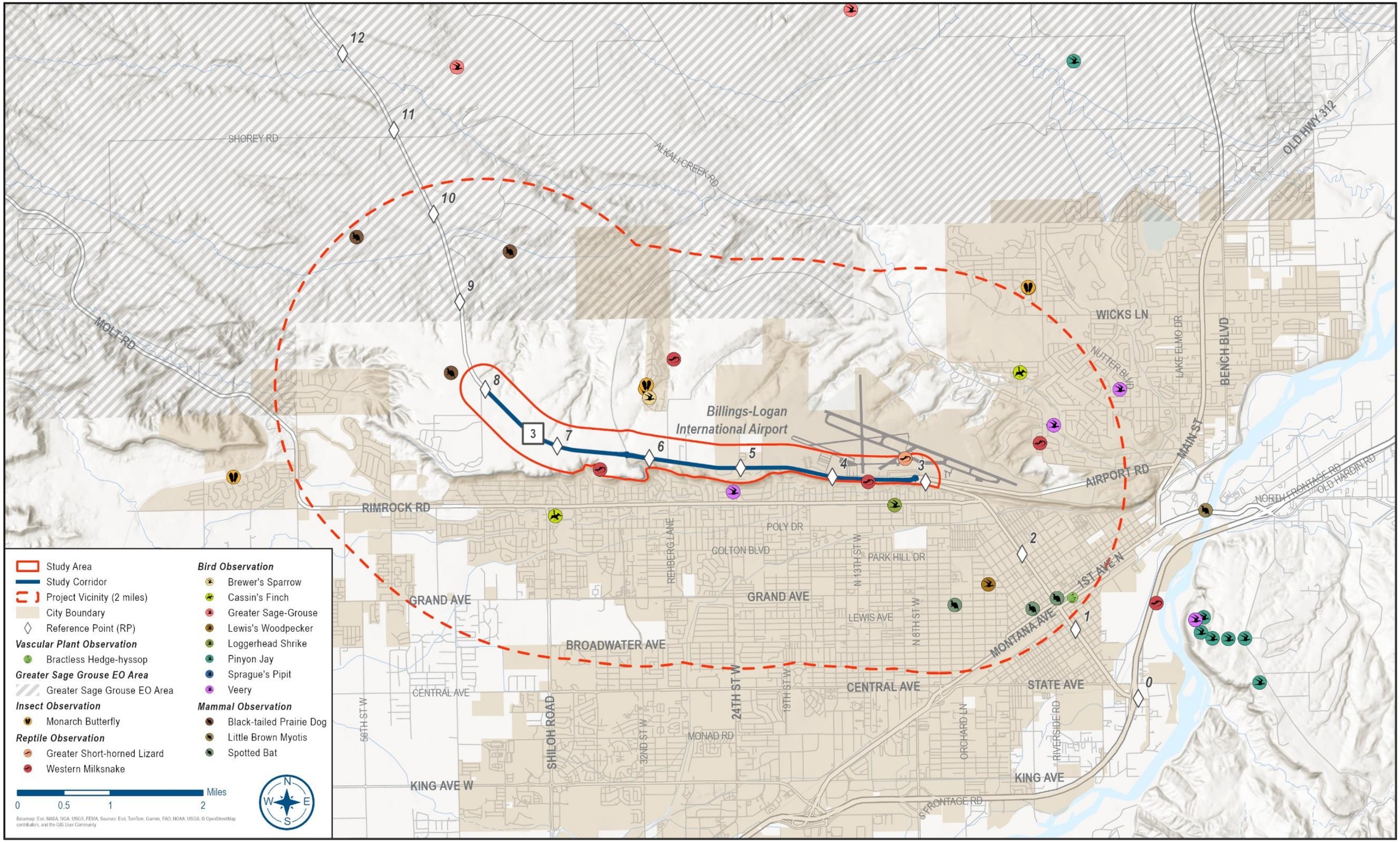

Exhibit 13 – Species of Concern

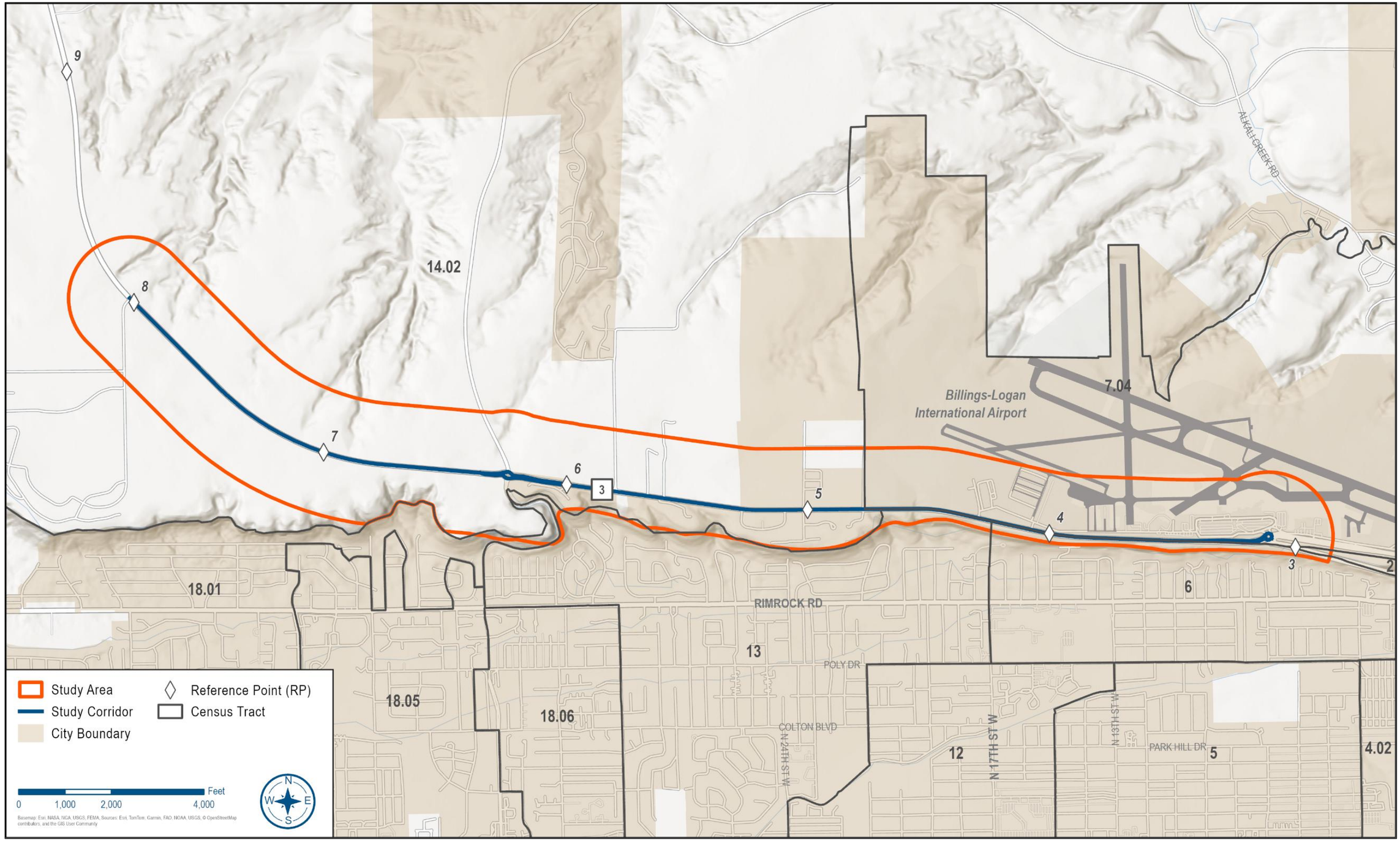

Exhibit 14 – Census Tracts

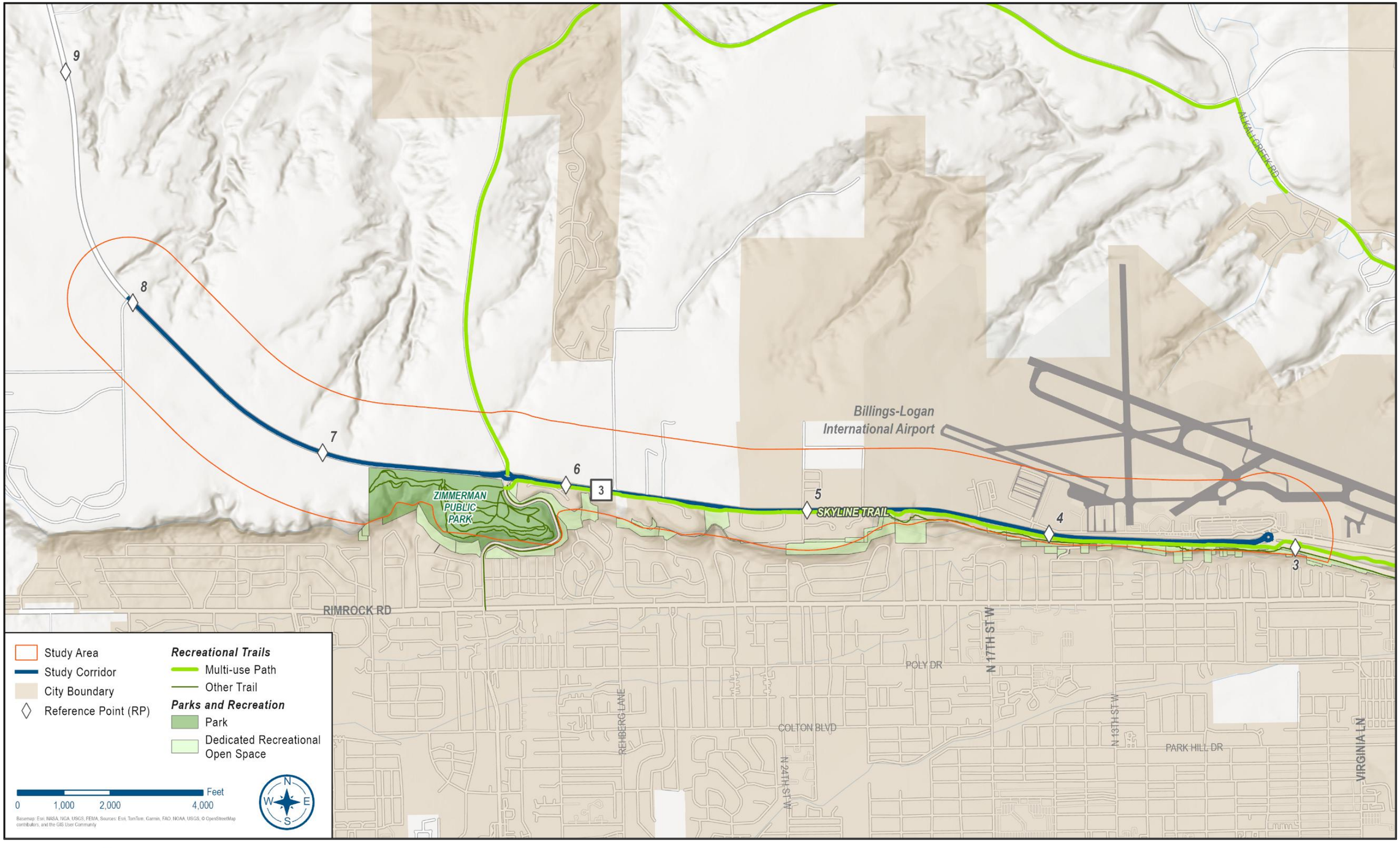

Exhibit 15 – Recreational Resources

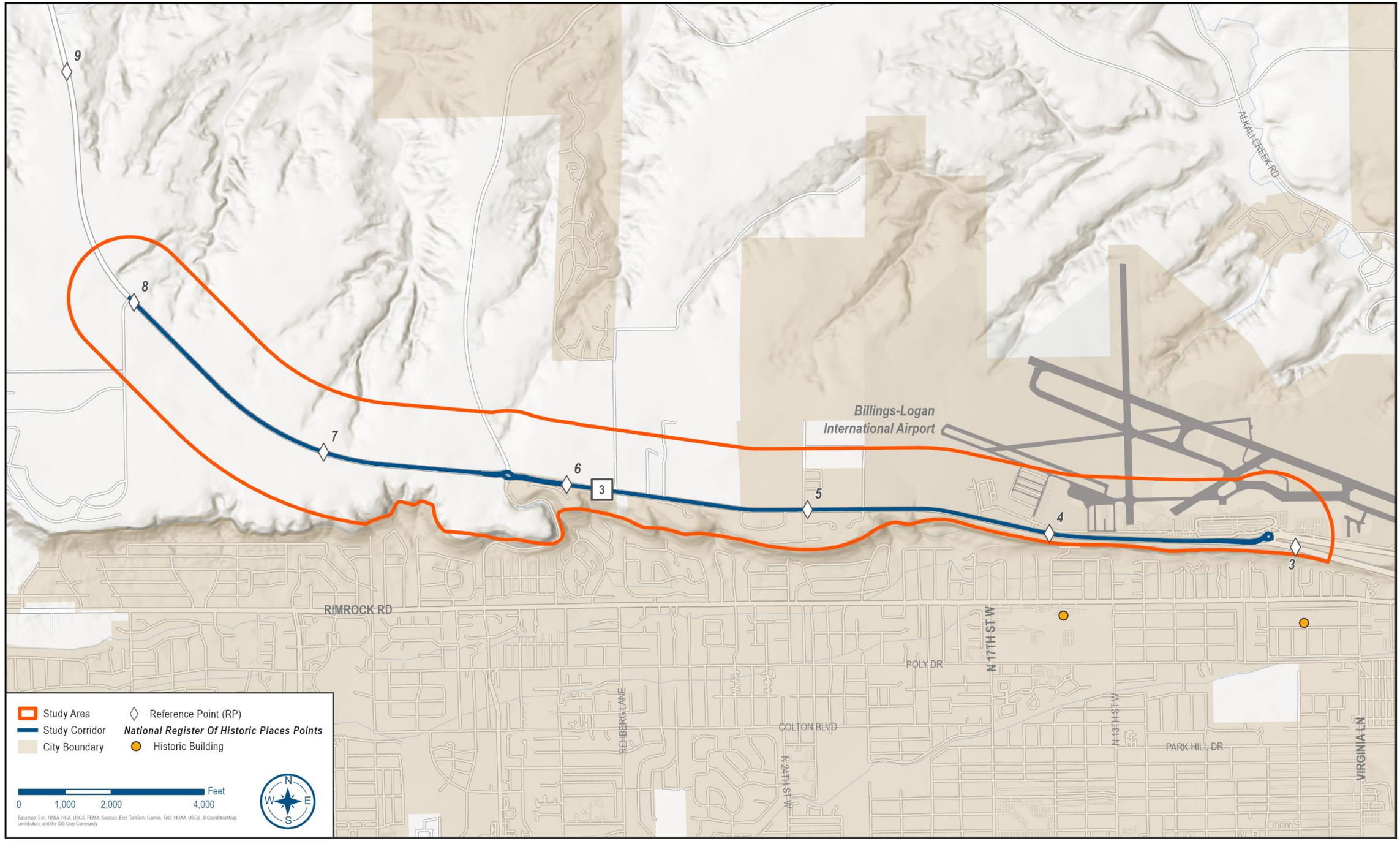

Exhibit 16 – National Register of Historic Places

ATTACHMENT 2: MTNHP ENVIRONMENTAL SUMMARY REPORT

Environmental Summary

MONTANA STATE LIBRARY
NATURAL HERITAGE PROGRAM mtnhp.org
1201 11th Ave ▫ P.O. Box 201800 ▫ Helena, MT 59620-1800 ▫ fax 406-444-0266 ▫ phone 406-444-3989

Latitude	Longitude
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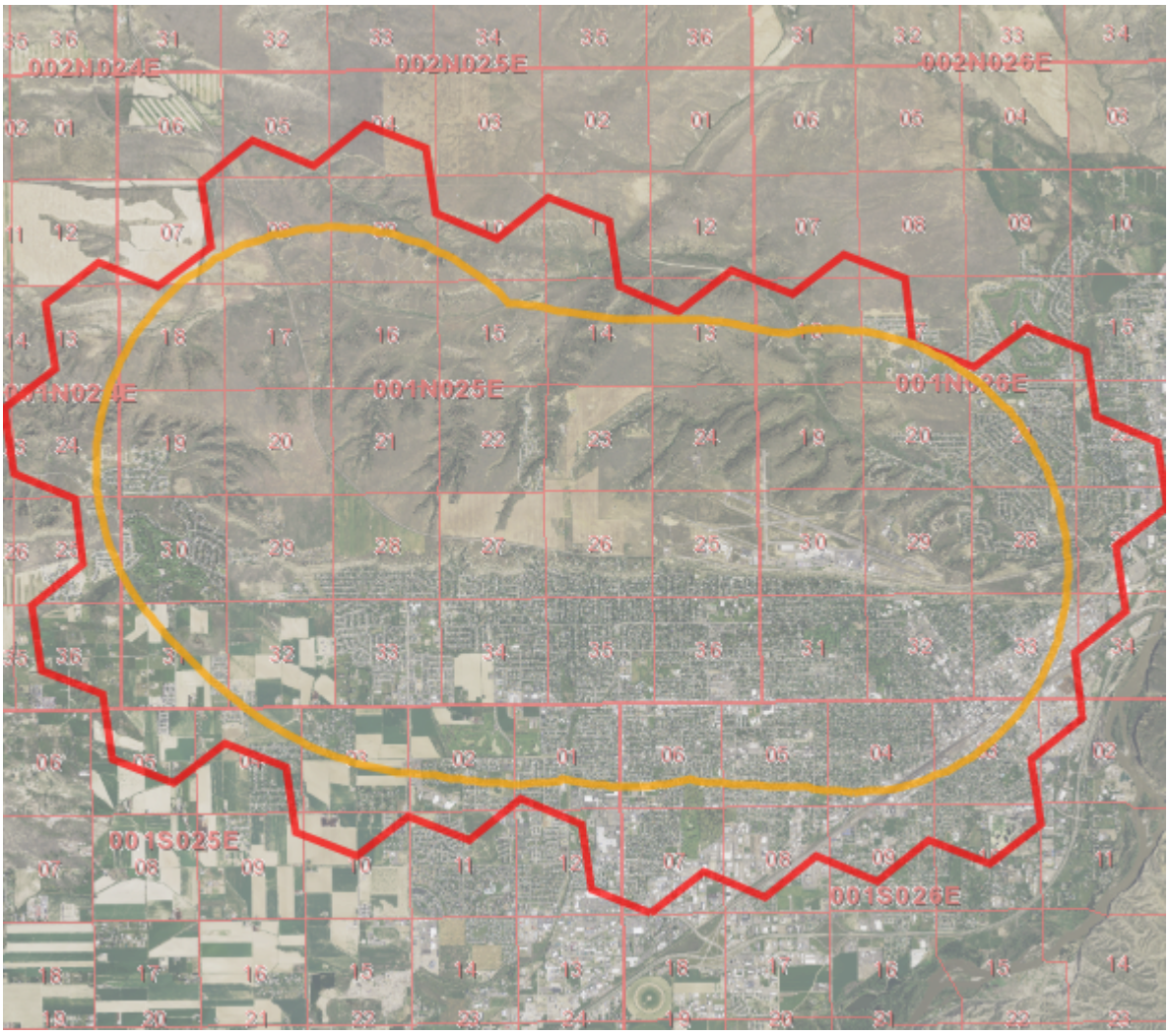
45.86253	-108.69719

Summarized by:
25mdt0012
(Custom Area of Interest)



Suggested Citation
Montana Natural Heritage Program. Environmental Summary Report.
for Latitude 45.75653 to 45.86253 and Longitude -108.46805 to -108.69719. Retrieved on 1/28/2025.

The Montana Natural Heritage Program is part of the Montana State Library's Natural Resource Information System. Since 1985, it has served as a neutral and non-regulatory provider of easily accessible information on Montana's species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. The program is part of the NatureServe network that is composed of over 60 member programs across North America that work to provide current and comprehensive distribution and status information on species and biological communities.

MONTANA STATE LIBRARY NATURAL HERITAGE PROGRAM
NATURESERVE

Table of Contents

Introduction to Environmental Summary Report

Environmental Summary Reports from the Montana Natural Heritage Program (MTNHP) provide information on species and biological communities to inform all stakeholders in environmental review, permitting, and planning processes. For information on environmental permits in Montana, please see permitting overviews by the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Index of Environmental Permits for Montana and our Suggested Contacts for Natural Resource Management Agencies. The report for your area of interest consists of introductory and related materials in this PDF and an Excel workbook with worksheets summarizing information managed in the MTNHP databases for: (1) species occurrences; (2) other observed species without species occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys that follow a protocol capable of detecting one or more species; (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. If your area of interest corresponds to a statewide polygon layer (e.g., watersheds, counties, or public land survey sections) information summaries in your report will exactly match those boundaries. However, if your report is for a custom area, users should be aware that summaries do not correspond to the exact boundaries of the polygon they have specified, but instead are a summary across a layer of hexagons intersected by the polygon they specified as shown on the report cover. Summarizing by these hexagons which are one square mile in area and approximately one kilometer in length on each side allows for consistent and rapid delivery of summaries based on a uniform grid that has been used for planning efforts across North America.

In presenting this information, MTNHP is working towards assisting the user with rapidly assessing the known or potential species and biological communities, land management categories, and biological reports associated with the report area. Users are reminded that this information is likely incomplete and may be inaccurate as surveys to document species are lacking in many areas of the state, species' range polygons often include regions of unsuitable habitat, methods of predicting the presence of species or communities are constantly improving, and information is constantly being added and updated in our databases. **Field verification by professional biologists of the absence or presence of species and biological communities in a report area will always be an important obligation of users of our data. Users are encouraged to only use this environmental summary report as a starting point for more in depth analyses and are encouraged to contact state, federal, and tribal resource management agencies for additional data or management guidelines relevant to your efforts. Please see the Appendix for introductory materials to each section of the report, additional information resources, and a list of relevant agency contacts.**

MONTANA STATE LIBRARY
NATURAL HERITAGE PROGRAM
A program of the **Montana State Library's Natural Resource Information System**

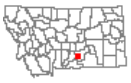
Legend

Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- Y Native / Year-round
- S Summer
- W Winter
- M Migratory
- N Non-native
- H Historical

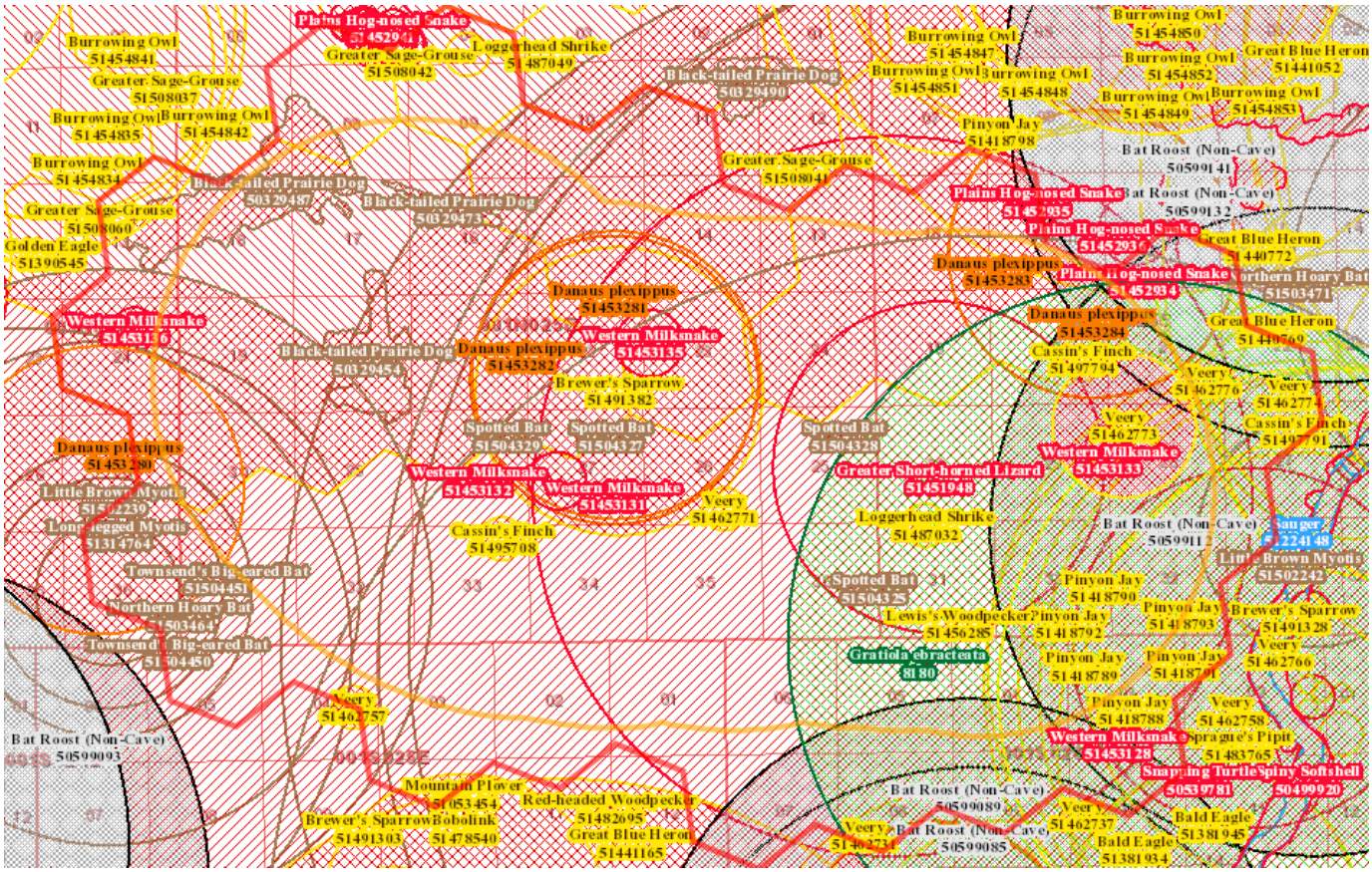
Num Obs
Count of obs with 'good precision' (<=1000m)
+ indicates additional 'poor precision' obs (1001m-10,000m)



Latitude	Longitude
45.75653	-108.46805
45.86253	-108.69719

Native Species

Summarized by: **25mdt0012** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC



Species Occurrences

	USFWS Sec7	# SO	# Obs	Predicted Model	Range
R - Western Milksnake *(Lampropeltis gentilis)* **SOC**		17	9 +		Y
B - Yellow-billed Cuckoo *(Coccyzus americanus)* **SOC**		1	1 +		S M
I - Danaus plexippus *(Monarch)* **SOC**		9	3		S

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum summer home range size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 18, 2024)

Predicted Models: O 83% Optimal (inductive), M 17% Moderate (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **PS: LT; MBTA** BLM: **THREATENED** FWP SWAP: **SGCN3, SGIN** PIF: **2**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to encompass the maximum foraging area size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Jun 27, 2024)

Predicted Models: O 57% Optimal (inductive), M 43% Moderate (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S2S3** USFWS: **P** USFS: **Sensitive - Migratory in Forests (BD, BRT, KOOT)**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age/stage. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass documented travel distances of some butterfly species as well as adjacent habitat likely to support other individuals and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 18, 2024)

Predicted Models: O 56% Optimal (inductive), M 28% Moderate (inductive), L 16% Low (inductive)

M - Spotted Bat *(Euderma maculatum)* SOC

4 2 + S M

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G4** State: **S4** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 10,000 meters in order to encompass the reported maximum foraging distance for the species in British Columbia. If the locational uncertainty associated with the observation is greater than 5,000 meters, the observation is not valid for creation of a species occurrence. (Last Updated: Dec 26, 2024)

Predicted Models: O 41% Optimal (inductive), M 24% Moderate (inductive), L 35% Low (inductive)

R - Plains Hog-nosed Snake *(Heterodon nasicus)* SOC

4 1 Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2, SGIN**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 500 meters in order to encompass the maximum summer home range size reported for the congeneric Eastern Hog-nosed Snake and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 18, 2024)

Predicted Models: O 33% Optimal (inductive), M 28% Moderate (inductive), L 30% Low (inductive)

B - Lewis's Woodpecker *(Melanerpes lewis)* SOC

1 2 S M

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **MBTA; BCC10; BCC17** USFS: **Species of Conservation Concern in Forests (HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the likely foraging area used by breeding adults around the nest tree and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 20, 2024)

Predicted Models: O 2% Optimal (inductive), M 13% Moderate (inductive), L 13% Low (inductive)

M - Long-legged Myotis *(Myotis volans)* SOC

1 1 Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G4G5** State: **S3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 2,000 meters in order to encompass the average distances traveled from capture locations to roosts in Washington, Oregon, and in the Black Hills of South Dakota and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 2,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jun 26, 2024)

Predicted Models: M 28% Moderate (inductive), L 72% Low (inductive)

M - Black-tailed Prairie Dog *(Cynomys ludovicianus)* SOC

3 26 + Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Areas with recent evidence of activity (i.e. burrow entrances) visible on recent National Agricultural Imagery Program (NAIP) aerial color photographic imagery that are within a distance of 200 meters of definitive observations buffered by the locational uncertainty of less than or equal to 1,000 meters. (Last Updated: Jul 03, 2019)

Predicted Models: M 22% Moderate (inductive), L 74% Low (inductive)

B - Pinyon Jay *(Gymnorhinus cyanocephalus)* SOC

7 11 + Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G3** State: **S3** USFWS: **MBTA; BCC10; BCC17** FWP SWAP: **SGCN3**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 4,500 meters in order to be conservative about encompassing the home ranges reported for flocks and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Sep 25, 2024)

Predicted Models: M 22% Moderate (inductive), L 37% Low (inductive)

R - Greater Short-horned Lizard *(Phrynosoma hernandesi)* SOC

1 + Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**

Delineation Criteria Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 300 meters in order to encompass habitats supporting other individuals and documented distances moved betweeen summer and winter habitats. Otherwise the point observation is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 18, 2024)

Predicted Models: M 20% Moderate (inductive), L 54% Low (inductive)

B - Great Blue Heron *(Ardea herodias)* SOC

3 32 + Y S M

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony. If the locational uncertainty associated with the observation is greater than 5,000 meters, the observation is not valid for creation of a species occurrence. (Last Updated: Nov 12, 2024)

Predicted Models: M 6% Moderate (inductive), L 59% Low (inductive)

B - Brewer's Sparrow *(Spizella breweri)* SOC

3 5 S M

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the maximum territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

Predicted Models: M 6% Moderate (inductive), L 26% Low (inductive)

M - Townsend's Big-eared Bat *(Corynorhinus townsendii)* SOC

2 1 + Y

View in Field Guide View Predicted Models View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3** USFS: **Sensitive - Known in Forests (LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 4,500 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Dec 26, 2024)

Predicted Models: M 4% Moderate (inductive), L 48% Low (inductive)

B - Bald Eagle *(Haliaeetus leucocephalus)* **SSS** 2 69 + Y

View in Field Guide | View Predicted Models | View Range Maps

Special Status Species - Native Species Global: **G5** State: **S4** USFWS: **BGEPA; MBTA** USFS: **Sensitive - Known in Forests (LOLO)** BLM: **SENSITIVE** PIF: **2**

Delineation Criteria Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting. Only nesting observations with a locational uncertainty of 1,000 meters or less will be used to delineate a nesting area. (Last Updated: Sep 09, 2024)

Predicted Models: M 4% Moderate (inductive), L 44% Low (inductive)

B - Veery *(Catharus fuscescens)* **SOC** 8 10 + S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 20, 2024)

Predicted Models: M 2% Moderate (inductive), L 91% Low (inductive)

M - Northern Hoary Bat *(Lasiurus cinereus)* **SOC** 2 1 S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3B** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles during the active season. Point observation location is buffered by a minimum distance of 3,500 meters in order to be conservative about encompassing the maximum reported foraging distance for the congeneric Lasiurus borealis and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

Predicted Models: M 2% Moderate (inductive), L 83% Low (inductive)

B - Cassin's Finch *(Haemorhous cassinii)* **SOC** 3 13 Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

Predicted Models: M 2% Moderate (inductive), L 67% Low (inductive)

B - Loggerhead Shrike *(Lanius ludovicianus)* **SOC** 2 3 S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 300 meters in order to encompass the maximum breeding territory size reported for the species in Alberta and Idaho and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

Predicted Models: M 2% Moderate (inductive), L 63% Low (inductive)

M - Long-eared Myotis *(Myotis evotis)* **SOC** 1 1 + Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, and definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a minimum distance of 1,000 meters in order to encompass the average distances traveled from capture locations to roosts and between roosts in western Montana, Alberta, and Oregon and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,000 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jun 26, 2024)

Predicted Models: M 2% Moderate (inductive), L 54% Low (inductive)

B - Sage Thrasher *(Oreoscoptes montanus)* **SOC** 1 1 S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 75 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

Predicted Models: M 2% Moderate (inductive), L 54% Low (inductive)

B - Greater Sage-Grouse *(Centrocercus urophasianus)* **SOC** 5 17 + Y

View in Field Guide | View Predicted Models | View Range Maps

USFS: **Sensitive - Known in Forests (BD)**

Species of Concern - Native Species Global: **G3G4** State: **S2** **Species of Conservation Concern in Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, juveniles, or adults on a lek. Point observations are mapped in the center of a one-square mile hexagon to protect the exact locations of leks. The outer edges of this hexagon are then buffered by a distance of 6,400 meters in order to encompass a body of research indicating that females typically nest within this distance of a lek and that lek numbers are negatively impacted by fossil fuel drilling activities within this distance of a lek. If the locational uncertainty associated with the observation is greater than 5,000 meters, the observation is not valid for creation of a species occurrence. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Jan 10, 2025)

Predicted Models: M 2% Moderate (inductive), L 30% Low (inductive)

M - Little Brown Myotis *(Myotis lucifugus)* **SOC** 2 1 Y

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S2S3** USFS: **Sensitive - Known in Forests (BD, BRT, KOOT)** FWP SWAP: **SGCN3**

Delineation Criteria Confirmed area of occupancy based on the documented presence (mistnet captures, definitively identified acoustic recordings, or definitively identified roosting individuals) of adults or juveniles. Point observation location is buffered by a distance of 1,600 meters in order to encompass the greater than 1,500 meters foraging distance reported for the species in New Brunswick, Canada and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. When cave locations are involved, point observations are mapped in the center of a one-square mile hexagon to protect the exact location of the cave entrance as per the Federal Cave Resource Protection Act and associated regulations (U.S. Code Title 16 Chapter 63, Code of Federal Regulations Title 43 Subtitle A Part 37). The outer edges of the hexagon are then buffered by a distance of 1,600 meters and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. All of the one-square mile hexagons intersecting this buffered area are presented as the Species Occurrence record. (Last Updated: Dec 26, 2024)

Predicted Models: L 67% Low (inductive)

B - Burrowing Owl *(Athene cunicularia)* SOC — 5 — S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Direct observation of a bird or birds at/on a prairie dog town is indirect but sufficient evidence of breeding (b). Point observation location is buffered by a minimum distance of 2,700 meters in order to encompass the maximum foraging distance reported for breeding adults and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 19, 2024)

Predicted Models: L 20% Low (inductive)

B - Red-headed Woodpecker *(Melanerpes erythrocephalus)* SOC — 1 — S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 165 meters in order to encompass the maximum breeding territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 24, 2024)

Predicted Models: L 20% Low (inductive)

B - Bobolink *(Dolichonyx oryzivorus)* SOC — 1 — 1 — S M

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** FWP SWAP: **SGCN3** PIF: **3**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 150 meters in order to conservatively encompass male territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 20, 2024)

Predicted Models: L 4% Low (inductive)

V - Gratiola ebracteata *(Bractless Hedge-hyssop)* SOC — 1 — + — Not Assessed — Y

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S2** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**

Delineation Criteria Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation. (Last Updated: Apr 26, 2018)

B - Mountain Plover *(Anarhynchus montanus)* SOC — 1 — Not Assessed — S M

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G3** State: **S2B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. When the observation is within a prairie dog town, the outer boundary of town (currently based on the grid-based delineation of 100m x 100m cells with evidence of prairie dog activity visible in aerial imagery) is used as the delineation of the breeding area. When the observation is not within a prairie dog town, the point observation location is buffered by a minimum distance of 550 meters in order to encompass the maximum brood rearing range size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. When prairie dog town boundaries or locational uncertainties associated with point observations overlap they will be merged into a common tracking unit associated with all of the observations contained within the tracking unit. (Last Updated: Dec 26, 2024)

B - Sprague's Pipit *(Anthus spragueii)* SOC — 7 — 1 — Not Assessed — S M

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G3G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 115 meters in order to encompass the maximum breeding territory sizes reported for the species in Montana and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Dec 26, 2024)

O - Bat Roost (Non-Cave) *(Bat Roost (Non-Cave))* IAH — 5 — Not Assessed

View in Field Guide

Important Animal Habitat - Native Species Global: **GNR** State: **SNR**

Delineation Criteria Confirmed area of occupancy based on the documented presence of adults or juveniles of any bat species at non-cave natural roost sites (e.g. rock outcrops, trees), below ground human created roost sites (e.g. mines), and above ground human created roost sites (e.g., bridges, buildings). Point observation locations are buffered by a distance of 4,500 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for Townsend's Big-eared Bat (a resident Montana bat Species of Concern) and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 5,000 meters. (Last Updated: Oct 22, 2019)

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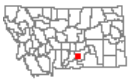
Legend

Model Icons	Habitat Icons	Range Icons
N Suitable (native range)	C Common	Y Native / Year-round
O Optimal Suitability	O Occasional	S Summer
M Moderate Suitability		W Winter
L Low Suitability		M Migratory
I Suitable (introduced range)		N Non-native
		H Historical

Num Obs
Count of obs with 'good precision' (<=1000m)
+ indicates additional 'poor precision' obs (1001m-10,000m)



Latitude	Longitude
45.75653	-108.46805
45.86253	-108.69719

Native Species

Summarized by: **25mdt0012** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Observed Species

	USFWS Sec7	# Obs	Predicted Model	Range
B - Broad-tailed Hummingbird *(Selasphorus platycercus)* **PSOC**		3		S M
B - Eastern Screech-Owl *(Megascops asio)* **PSOC**		56 +		Y
B - Ovenbird *(Seiurus aurocapilla)* **PSOC**		8 +		S M
M - Western Spotted Skunk *(Spilogale gracilis)* **PSOC**		1		Y
B - Plumbeous Vireo *(Vireo plumbeus)* **PSOC**		7		S M
B - Chimney Swift *(Chaetura pelagica)* **PSOC**		77		S M
B - Dickcissel *(Spiza americana)* **PSOC**		1		S M
B - Hooded Merganser *(Lophodytes cucullatus)* **PSOC**		11		Y M
M - North American Porcupine *(Erethizon dorsatum)* **PSOC**		1		Y
B - American White Pelican *(Pelecanus erythrorhynchos)* **SOC**		12		S M
B - Evening Grosbeak *(Coccothraustes vespertinus)* **SOC**		12 +		Y WM
B - Rufous Hummingbird *(Selasphorus rufus)* **PSOC**		11		S M

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA; BCC10** FWP SWAP: **SGIN**
Predicted Models: O 46% Optimal (inductive), M 20% Moderate (inductive), L 13% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** USFWS: **MBTA** PIF: **3**
Predicted Models: O 28% Optimal (inductive), M 33% Moderate (inductive), L 7% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**
Predicted Models: O 20% Optimal (inductive), M 19% Moderate (inductive), L 30% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **SU** FWP SWAP: **SGIN**
Predicted Models: O 13% Optimal (inductive), M 87% Moderate (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S3S4B** USFWS: **MBTA** PIF: **3**
Predicted Models: O 9% Optimal (inductive), M 48% Moderate (inductive), L 39% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G4G5** State: **S3S4B** USFWS: **MBTA; BCC11** FWP SWAP: **SGIN** PIF: **3**
Predicted Models: O 6% Optimal (inductive), M 17% Moderate (inductive), L 20% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: O 4% Optimal (inductive), M 52% Moderate (inductive), L 26% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Predicted Models: O 4% Optimal (inductive), M 26% Moderate (inductive), L 7% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** FWP SWAP: **SGIN**
Predicted Models: M 65% Moderate (inductive), L 35% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predicted Models: M 61% Moderate (inductive), L 35% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA; BCC10** FWP SWAP: **SGCN3**
Predicted Models: M 48% Moderate (inductive), L 24% Low (inductive)

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G4** State: **S4B** USFWS: **MBTA; BCC10** PIF: **3**
Predicted Models: M 39% Moderate (inductive), L 33% Low (inductive)

B - White-faced Ibis *(Plegadis chihi)* SOC — 2

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Predicted Models: M 20% Moderate (inductive), L 33% Low (inductive)

B - Green-tailed Towhee *(Pipilo chlorurus)* SOC — 1

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**

Predicted Models: M 13% Moderate (inductive), L 35% Low (inductive)

B - Common Poorwill *(Phalaenoptilus nuttallii)* PSOC — 7

View in Field Guide | View Predicted Models | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**

Predicted Models: M 4% Moderate (inductive), L 91% Low (inductive)

B - Black-necked Stilt *(Himantopus mexicanus)* SOC — 2

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**

Predicted Models: M 4% Moderate (inductive), L 11% Low (inductive)

B - Golden Eagle *(Aquila chrysaetos)* SOC — 4 +

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **BGEPA; MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3**

Predicted Models: M 2% Moderate (inductive), L 30% Low (inductive)

B - Sharp-tailed Grouse *(Tympanuchus phasianellus)* SOC — 3 +

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **SX,S4** FWP SWAP: **SGCN1** PIF: **2**

Predicted Models: L 100% Low (inductive)

B - Long-billed Curlew *(Numenius americanus)* SOC — 2

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Predicted Models: L 94% Low (inductive)

B - Black-and-white Warbler *(Mniotilta varia)* PSOC — 1 +

View in Field Guide | View Predicted Models | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**

Predicted Models: L 57% Low (inductive)

M - Silver-haired Bat *(Lasionycteris noctivagans)* PSOC — 2

View in Field Guide | View Predicted Models | View Range Maps

Potential Species of Concern - Native Species Global: **G3G4** State: **S3**

Predicted Models: L 56% Low (inductive)

A - Great Plains Toad *(Anaxyrus cognatus)* SOC — 8 +

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

Predicted Models: L 28% Low (inductive)

A - Northern Leopard Frog *(Lithobates pipiens)* SOC — 1 +

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3S4** USFS: **Sensitive - Suspected in Forests (KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN1**

Predicted Models: L 28% Low (inductive)

B - Clark's Nutcracker *(Nucifraga columbiana)* SOC — 1

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** USFS: **Species of Conservation Concern in Forests (FLAT)** FWP SWAP: **SGCN3** PIF: **3**

Predicted Models: L 6% Low (inductive)

B - Chestnut-collared Longspur *(Calcarius ornatus)* SOC — 3

View in Field Guide | View Predicted Models | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**

Predicted Models: L 4% Low (inductive)

B - American Goshawk *(Accipiter atricapillus)* SOC — 14 — Not Assessed

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **2**

B - Brown Creeper *(Certhia americana)* SOC — 35 — Not Assessed

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **1**

F - Burbot *(Lota lota)* PSOC — + — Not Assessed

View in Field Guide | View Range Maps

Potential Species of Concern - Native Species Global: **G5** State: **S4**

F - Sauger *(Sander canadensis)* SOC — + — Not Assessed

View in Field Guide | View Range Maps

Species of Concern - Native Species Global: **G5** State: **S2** BLM: **SENSITIVE** FWP SWAP: **SGCN2**

B - Ferruginous Hawk *(Buteo regalis)* **SOC** | 8 + | Not Assessed | S | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Franklin's Gull *(Leucophaeus pipixcan)* **SOC** | 8 | Not Assessed | S | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Thick-billed Longspur *(Rhynchophanes mccownii)* **SOC** | 1 | Not Assessed | S | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Gray-crowned Rosy-Finch *(Leucosticte tephrocotis)* **SOC** | 1 | Not Assessed | W | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2** USFWS: **MBTA** FWP SWAP: **SGCN2, SGIN**

B - Northern Hawk Owl *(Surnia ulula)* **SOC** | + | Not Assessed | W | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3, SGIN**

B - Caspian Tern *(Hydroprogne caspia)* **SOC** | 10 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S2B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**

B - Clark's Grebe *(Aechmophorus clarkii)* **SOC** | 5 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11** FWP SWAP: **SGCN3** PIF: **3**

B - Common Loon *(Gavia immer)* **SOC** | 11 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** USFS: **Sensitive - Known in Forests (LOLO)** FWP SWAP: **SGCN3** PIF: **1**

B - Common Tern *(Sterna hirundo)* **SOC** | 2 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Forster's Tern *(Sterna forsteri)* **SOC** | 2 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Horned Grebe *(Podiceps auritus)* **SOC** | 7 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

B - Tennessee Warbler *(Leiothlypis peregrina)* **PSOC** | 5 + | Not Assessed | M

View in Field Guide | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4B** USFWS: **MBTA**

B - Trumpeter Swan *(Cygnus buccinator)* **SOC** | 1 | Not Assessed | M

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

M - Grizzly Bear *(Ursus arctos)* **SOC** | + | Not Assessed | H

View in Field Guide | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** USFWS: **LT** BLM: **THREATENED** FWP SWAP: **SGCN2-3**

M - Canada Lynx *(Lynx canadensis)* **SOC** | + | Not Assessed

View in Field Guide
Species of Concern - Native Species Global: **G5** State: **S3** USFWS: **LT; CH** BLM: **THREATENED** FWP SWAP: **SGCN3**

B - Great Gray Owl *(Strix nebulosa)* **SOC** | + | Not Assessed

View in Field Guide
Species of Concern - Native Species Global: **G5** State: **S3S4** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** PIF: **3**

B - Least Tern *(Sternula antillarum)* **SOC** | 1 | Not Assessed

View in Field Guide
Species of Concern - Native Species Global: **G4** State: **S2B** USFWS: **DM; MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN1, SGIN** PIF: **1**

F - Arctic Grayling *(Thymallus arcticus)* **SOC** | + | Not Assessed

View in Field Guide
Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S1** USFS: **Sensitive - Known in Forests (BD)**
BLM: **SENSITIVE** FWP SWAP: **SGCN1**

F - Brook Stickleback *(Culaea inconstans)* **PSOC** | + | Not Assessed | N

View in Field Guide | View Range Maps
Potential Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G5** State: **S4**

V - Asclepias incarnata *(Swamp Milkweed)* **SOC** | 1 | Not Assessed

View in Field Guide
Species of Concern - Native Species Global: **G5** State: **S1?** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**

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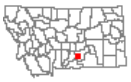
Legend

Model Icons	Habitat Icons	Range Icons	Num Obs
N Suitable (native range)	C Common	Y Native / Year-round	Count of obs with 'good precision' (<=1000m)
O Optimal Suitability	O Occasional	S Summer	+ indicates additional 'poor precision' obs (1001m-10,000m)
M Moderate Suitability		W Winter	
L Low Suitability		M Migratory	
I Suitable (introduced range)		N Non-native	
		H Historical	



Latitude	Longitude
45.75653	-108.46805
45.86253	-108.69719

Native Species

Summarized by: **25mdt0012** *(Custom Area of Interest)*
Filtered by:
Native Species reports are filtered for Species with MT Status = Species of Concern, Special Status, Important Animal Habitat, Potential SOC

Other Potential Species

	USFWS Sec7	Predicted Model	Range
B - Black-billed Cuckoo *(Coccyzus erythropthalmus)* SOC			S M
R - Snapping Turtle *(Chelydra serpentina)* SOC			Y
M - Merriam's Shrew *(Sorex merriami)* SOC			Y
I - Bombus suckleyi *(Suckley's Cuckoo Bumble Bee)* SOC			Y
M - Pallid Bat *(Antrozous pallidus)* SOC			S M
I - Oreohelix strigosa berryi *(Berry's Mountainsnail)* SOC			Y
M - Eastern Red Bat *(Lasiurus borealis)* SOC			S M
V - Potentilla plattensis *(Platte Cinquefoil)* SOC			Y
V - Physaria brassicoides *(Double Bladderpod)* SOC			Y
B - Short-eared Owl *(Asio flammeus)* PSOC			Y
B - Cassin's Kingbird *(Tyrannus vociferans)* PSOC			S M
M - Prairie Shrew *(Sorex hayden)* PSOC			Y

B - Black-billed Cuckoo *(Coccyzus erythropthalmus)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** PIF: **2**
Predicted Models: O 15% Optimal (inductive), M 43% Moderate (inductive), L 17% Low (inductive)

R - Snapping Turtle *(Chelydra serpentina)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native/Non-native Species - (depends on location or taxa) Global: **G4G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**
Predicted Models: O 9% Optimal (inductive), M 20% Moderate (inductive), L 57% Low (inductive)

M - Merriam's Shrew *(Sorex merriami)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predicted Models: O 2% Optimal (inductive), M 89% Moderate (inductive), L 9% Low (inductive)

I - Bombus suckleyi *(Suckley's Cuckoo Bumble Bee)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G2G3** State: **S1** USFWS: **P**
Predicted Models: M 63% Moderate (inductive), L 35% Low (inductive)

M - Pallid Bat *(Antrozous pallidus)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predicted Models: M 41% Moderate (inductive), L 37% Low (inductive)

I - Oreohelix strigosa berryi *(Berry's Mountainsnail)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5T2** State: **S1S2**
Predicted Models: M 33% Moderate (inductive), L 30% Low (inductive)

M - Eastern Red Bat *(Lasiurus borealis)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G3G4** State: **S3B** BLM: **SENSITIVE**
Predicted Models: M 22% Moderate (inductive), L 52% Low (inductive)

V - Potentilla plattensis *(Platte Cinquefoil)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G4** State: **S3** Plant Threat Score: **No Known Threats** CCVI: **Highly Vulnerable**
Predicted Models: M 22% Moderate (inductive), L 39% Low (inductive)

V - Physaria brassicoides *(Double Bladderpod)* SOC

View in Field Guide | View Predicted Models | View Range Maps
Species of Concern - Native Species Global: **G5** State: **S3** Plant Threat Score: **No Known Threats**
Predicted Models: M 15% Moderate (inductive), L 39% Low (inductive)

B - Short-eared Owl *(Asio flammeus)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA; BCC11; BCC17** PIF: **3**
Predicted Models: M 11% Moderate (inductive), L 28% Low (inductive)

B - Cassin's Kingbird *(Tyrannus vociferans)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: M 7% Moderate (inductive), L 69% Low (inductive)

M - Prairie Shrew *(Sorex hayden)* PSOC

View in Field Guide | View Predicted Models | View Range Maps
Potential Species of Concern - Native Species Global: **G5** State: **S3S4**
Predicted Models: M 7% Moderate (inductive), L 67% Low (inductive)

M - Dwarf Shrew *(Sorex nanus)* **SOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S2S3** FWP SWAP: **SGCN2-3**
Predicted Models: M 7% Moderate (inductive), L 54% Low (inductive)

V - Eupatorium maculatum *(Spotted Joepye-weed)* **SOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G5** State: **S1S2** Plant Threat Score: **No Known Threats** CCVI: **Moderately Vulnerable**
Predicted Models: M 4% Moderate (inductive), L 65% Low (inductive)

M - Fringed Myotis *(Myotis thysanodes)* **SOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Species of Concern - Native Species Global: **G4** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predicted Models: M 2% Moderate (inductive), L 24% Low (inductive)

B - Barrow's Goldeneye *(Bucephala islandica)* **PSOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Predicted Models: L 61% Low (inductive)

B - Eastern Bluebird *(Sialia sialis)* **PSOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S4B** USFWS: **MBTA**
Predicted Models: L 54% Low (inductive)

V - Cypripedium parviflorum *(Small Yellow Lady's-slipper)* **PSOC**

View in Field Guide **View Predicted Models** **View Range Maps**
Potential Species of Concern - Native Species Global: **G5** State: **S3S4** USFS: **Sensitive - Known in Forests (LOLO)** **Species of Conservation Concern in Forests (CG, HLC)**
Predicted Models: L 46% Low (inductive)

B - Red Knot *(Calidris canutus)* **SSS** Not Assessed

View in Field Guide
Special Status Species - Native Species Global: **G4** State: **SNA** USFWS: **LT; MBTA** BLM: **THREATENED**

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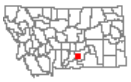

Latitude	Longitude
45.75653	-108.46805
45.86253	-108.69719

Structured Surveys

Summarized by: **25mdt0012** *(Custom Area of Interest)*

The Montana Natural Heritage Program (MTNHP) records information on the locations where more than 80 different types of well-defined repeatable survey protocols capable of detecting an animal species or suite of animal species have been conducted by state, federal, tribal, university, or private consulting biologists. Examples of structured survey protocols tracked by MTNHP include: visual encounter and dip net surveys for pond breeding amphibians, point counts for birds, call playback surveys for selected bird species, visual surveys of migrating raptors, kick net stream reach surveys for macroinvertebrates, visual encounter cover object surveys for terrestrial mollusks, bat acoustic or mist net surveys, pitfall and/or snap trap surveys for small terrestrial mammals, track or camera trap surveys for large mammals, and trap surveys for turtles. Whenever possible, photographs of survey locations are stored in MTNHP databases.

MTNHP does not typically manage information on structured surveys for plants; surveys for invasive species may be a future exception.

Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

B-Chimney Swift *(Chimney Swift Survey)*	**Survey Count**: 15	**Obs Count**: 6	**Recent Survey**: 2022
B-Raptor nest *(Raptor Nest Survey)*	**Survey Count**: 18	**Obs Count**: 16	**Recent Survey**: 2020
B-Sage Grouse Lek *(Greater Sage Grouse Lek Survey)*	**Survey Count**: 48	**Obs Count**: 17	**Recent Survey**: 2001
E-Eastern Heath Snail *(Eastern Heath Snail Survey)*	**Survey Count**: 4	**Obs Count**:	**Recent Survey**: 2012
E-Japanese Beetle Trapping *(Japanese Beetle Trapping Surveys)*	**Survey Count**: 8	**Obs Count**: 5	**Recent Survey**: 2018
E-Noxious Weed, Road-based *(Noxious Weed Road-based Visual Surveys)*	**Survey Count**: 49	**Obs Count**: 30	**Recent Survey**: 2005
E-Visual Aquatic Invasives *(Visual Encounter Surveys for Aquatic Invasives on Shorelines or Underwater)*	**Survey Count**: 1	**Obs Count**: 1	**Recent Survey**: 2021
F-Fish Electrofishing *(Fish Electrofishing Surveys)*	**Survey Count**: 1	**Obs Count**:	**Recent Survey**: 2020
F-Fish Other Survey *(Fish Other Survey (FWP Survey Type))*	**Survey Count**: 2	**Obs Count**: 4	**Recent Survey**: 2003
F-Fish Trapping/Netting *(Fish Trapping or Netting Surveys)*	**Survey Count**: 5	**Obs Count**: 19	**Recent Survey**: 2006
I-Light Traps *(Light Trapping for Nocturnal Insects)*	**Survey Count**: 7	**Obs Count**: 29	**Recent Survey**: 2023
I-Odonates/Butterfly VES *(Visual Encounter Survey for Damselfly/Dragonfly/Butterfly)*	**Survey Count**: 3	**Obs Count**: 3	**Recent Survey**: 1910
M-Bat Acoustic *(Bat Acoustic Survey)*	**Survey Count**: 1	**Obs Count**: 8	**Recent Survey**: 2016
M-Bat Roost (Active Season) *(Bat Roost (Active Season) Survey)*	**Survey Count**: 3	**Obs Count**: 4	**Recent Survey**: 2010
M-Prairie Dog Ground *(Prairie Dog Town Ground Survey)*	**Survey Count**: 11	**Obs Count**: 11	**Recent Survey**: 2010
R-Turtle Trapping *(Turtle Trapping Surveys)*	**Survey Count**: 2	**Obs Count**:	**Recent Survey**: 2018

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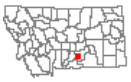
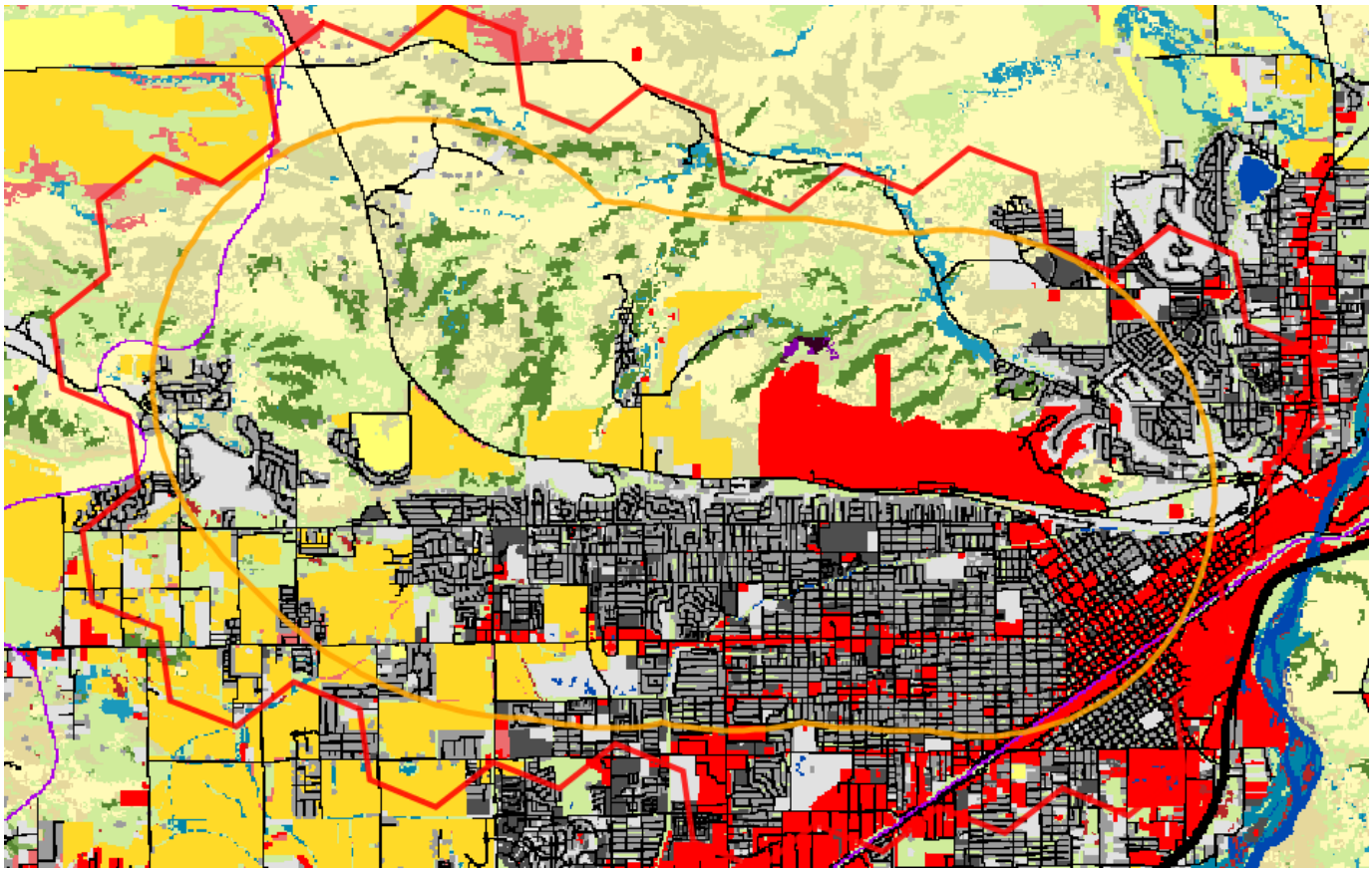


Latitude	Longitude
45.75653	-108.46805
45.86253	-108.69719

Land Cover

Summarized by: **25mdt0012** *(Custom Area of Interest)*



No Image

16% (*5,654 Acres*)

Human Land Use
Developed
Other Roads

County, city and or rural roads generally open to motor vehicles.

16% (*5,421 Acres*)

Shrubland, Steppe and Savanna Systems
Sagebrush Steppe
Big Sagebrush Steppe

This widespread ecological system occurs throughout much of central Montana, and north and east onto the western fringe of the Great Plains. In central Montana, where this system occurs on both glaciated and non-glaciated landscapes, it differs slightly, with more summer rain than winter precipitation and more precipitation annually. Throughout its distribution, soils are typically deep and non-saline, often with a microphytic crust. This shrub-steppe is dominated by perennial grasses and forbs with greater than 25% cover. Overall shrub cover is less than 10 percent. In Montana and Wyoming, stands are more mesic, with more biomass of grass, and have less shrub diversity than stands farther to the west, and 50 to 90% of the occurrences are dominated by Wyoming big sagebrush with western wheatgrass (*Pascopyrum smithii*). Japanese brome (*Bromus japonicus*) and cheatgrass (*Bromus tectorum*) are indicators of disturbance, but cheatgrassis typically not as abundant as in the Intermountain West, possibly due to a colder climate. The natural fire regime of this ecological system maintains a patchy distribution of shrubs, preserving the steppe character. Shrubs may increase following heavy grazing and/or with fire suppression. In central and eastern Montana, complexes of prairie dog towns are common in this ecological system.

14% (*4,789 Acres*)

Human Land Use
Developed
Low Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.

10% (*3,394 Acres*)

Grassland Systems
Lowland/Prairie Grassland
Great Plains Mixedgrass Prairie

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris)* and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread *(Hesperostipa curtiseta)* dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis/ Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass *(Pascopyrum smithii)* or into pure crested wheatgrass (*Agropyron cristatum)* stands.

No Image

9% (*3,140 Acres*)

Human Land Use
Developed
Commercial / Industrial

Businesses, industrial parks, hospitals, airports; utilities in commercial/industrial areas.

9% (*3,036 Acres*)

Grassland Systems
Lowland/Prairie Grassland
Great Plains Sand Prairie

The sand prairies constitute a very unique system within the western Great Plains. The unifying and controlling feature for this system is that coarse-textured soils predominate and the dominant grasses are well-adapted to this condition. In the northwestern portion of the system's range, stand size corresponds to the area of exposed caprock sandstone, and small patches predominate, but larger patches are found embedded in the encompassing Great Plains Mixed Grass Prairie, and usually occupy higher positions in local landscapes where former caprock formations have eroded into more subdued and planar topography. In most of eastern Montana, substrates supporting this system have weathered in place from sandstone caprock. Soils can be relatively thin or deep due to varying amounts of downslope movement of weathered sands. Needle and thread (*Hesperostipa comata*) is the dominant grass species. Other frequent species include little bluestem (*Schizachyrium scoparium*), often occurring with threadleaf sedge (*Carex filifolia*) and dominating both sandy sites and actively eroding sites. Prairie sandreed (*Calamovilfa longifolia*), sand bluestem (*Andropogon hallii*) and big bluestem (*Andropogon gerardii*) are sporadically distributed and found generally on the coarsest-textured sands. Other graminoids include bluebunch wheatgrass (*Pseudoroegneria spicata*), sun sedge (*Carex inops ssp. heliophila*), and purple threeawn (*Aristida purpurea*). Characteristic forbs differ by occurrence, but species of scurf pea (*Psoralidium* species) and Indian breadroot (*Pediomelum*) species are common. Communities of silver sage (*Artemisia cana* ssp. *cana*) or skunkbush sumac (*Rhus trilobata*) can occur within this system. Wind erosion, fire and grazing constitute the other major dynamic processes that can influence this system.

9% (*2,968 Acres*)

Human Land Use
Agriculture
Cultivated Crops

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.

7% (*2,383 Acres*)

Human Land Use
Developed
Developed, Open Space

Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Impervious surfaces account for less than 20% of total cover. This category often includes highway and railway rights of way and graveled rural roads.

5% (*1,587 Acres*)

Forest and Woodland Systems
Conifer-dominated forest and woodland (xeric-mesic)
Great Plains Ponderosa Pine Woodland and Savanna

These ponderosa pine (*Pinus ponderosa*) occurrences differ from the Rocky Mountain Ponderosa Pine Woodland and Savanna systems in that they are typically found within the matrix of the Great Plains grassland systems. They are often surrounded by mixed-grass prairie, in places where available soil moisture is higher or soils are more coarse and rocky. Elevation ranges from 1,189 meters (3,900 feet) in southeastern Montana to 1,646 m (5,400 feet) in north-central Montana. Occurrences are usually on east- and north-facing aspects. These woodlands can be physiognomically variable, ranging from very sparse patches of trees on drier sites, to nearly closed-canopy forest stands on north slopes or in draws where available soil moisture is higher.

3% (*1,024 Acres*)

Human Land Use
Developed
High Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-80% of the total cover. These areas most commonly include single-family housing units in urban areas. Paved roadways, parking lots, and other large impervious surfaces may be classified into this category.

Additional Limited Land Cover

1% (*223 Acres*) Great Plains Riparian

1% (*192 Acres*) Introduced Upland Vegetation - Annual and Biennial Forbland

<1% (*160 Acres*) Great Plains Badlands

<1% (*142 Acres*) Pasture/Hay

<1% (*129 Acres*) Railroad

<1% (*125 Acres*) Major Roads

<1% (*46 Acres*) Great Plains Wooded Draw and Ravine
<1% (*33 Acres*) Open Water
<1% (*31 Acres*) Introduced Riparian and Wetland Vegetation
<1% (*15 Acres*) Burned Sagebrush
<1% (*15 Acres*) Great Plains Floodplain
<1% (*15 Acres*) Recently burned forest
<1% (*7 Acres*) Rocky Mountain Foothill Limber Pine - Juniper Woodland
<1% (*4 Acres*) Greasewood Flat
<1% (*2 Acres*) Emergent Marsh
<1% (*2 Acres*) Recently burned shrubland
<1% (*1 Acres*) Great Plains Cliff and Outcrop

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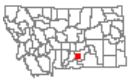

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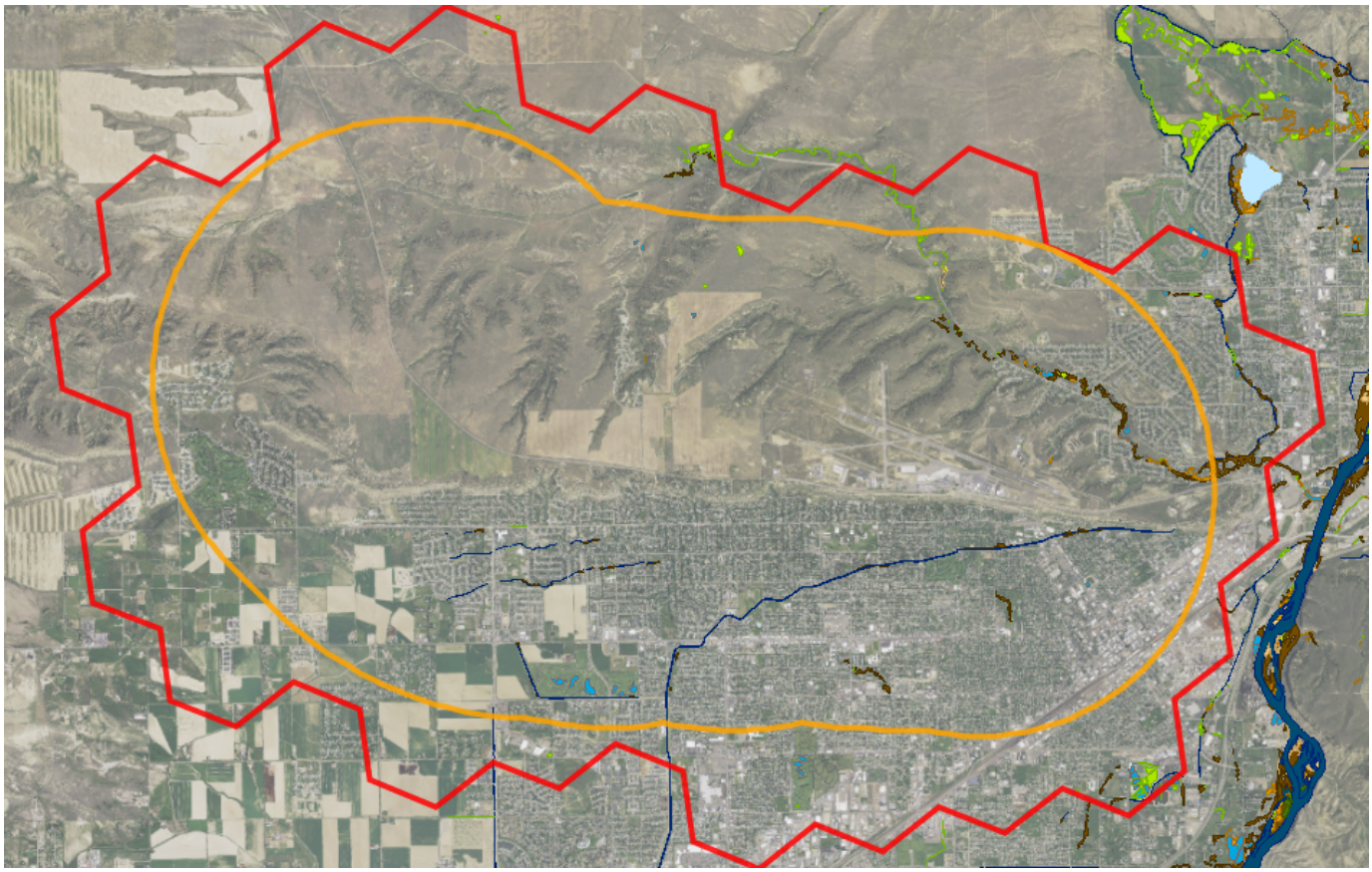
Wetland and Riparian

Summarized by: **25mdt0012** *(Custom Area of Interest)*



Wetland and Riparian Mapping

P - Palustrine

AB - Aquatic Bed

P - Palustrine, AB - Aquatic Bed
Wetlands with vegetation growing on or below the water surface for most of the growing season.

F - Semipermanently Flooded	22 Acres	
(no modifier)	**2 Acres**	**PABF**
b - Beaver	**1 Acres**	**PABFb**
h - Diked/Impounded	**9 Acres**	**PABFh**
x - Excavated	**10 Acres**	**PABFx**
K - Artificially Flooded	20 Acres	
x - Excavated	**20 Acres**	**PABKx**

US - Unconsolidated Shore

P - Palustrine, US - Unconsolidated Shore
Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.

A - Temporarily Flooded	7 Acres	
x - Excavated	**7 Acres**	**PUSAx**
C - Seasonally Flooded	5 Acres	
(no modifier)	**1 Acres**	**PUSC**
h - Diked/Impounded	**1 Acres**	**PUSCh**
x - Excavated	**3 Acres**	**PUSCx**

EM - Emergent

P - Palustrine, EM - Emergent
Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

A - Temporarily Flooded	12 Acres	
(no modifier)	**9 Acres**	**PEMA**
x - Excavated	**3 Acres**	**PEMAx**
C - Seasonally Flooded	22 Acres	
(no modifier)	**6 Acres**	**PEMC**
h - Diked/Impounded	**4 Acres**	**PEMCh**
x - Excavated	**12 Acres**	**PEMCx**
F - Semipermanently Flooded	5 Acres	
(no modifier)	**4 Acres**	**PEMF**
h - Diked/Impounded	**1 Acres**	**PEMFh**

SS - Scrub-Shrub

P - Palustrine, SS - Scrub-Shrub
Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

A - Temporarily Flooded	1 Acres

(no modifier) **1 Acres** **PSSA**

F - Semipermanently Flooded 1 Acres

h - Diked/Impounded **1 Acres** **PSSFh**

R - Riverine (Rivers)

2 - Lower Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 34 Acres

x - Excavated **34 Acres** **R2UBFx**

R - Riverine (Rivers), 2 - Lower Perennial, UB - Unconsolidated Bottom
Stream channels where the substrate is at least 25% mud, silt or other fine particles.

4 - Intermittent

SB - Stream Bed

C - Seasonally Flooded 10 Acres

x - Excavated **10 Acres** **R4SBCx**

R - Riverine (Rivers), 4 - Intermittent, SB - Stream Bed
Active channel that contains periodic water flow.

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub
(no modifier) **10 Acres** **Rp1SS**

Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub
This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested
(no modifier) **100 Acres** **Rp1FO**

Rp - Riparian, 1 - Lotic, FO - Forested
This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

EM - Emergent
(no modifier) **4 Acres** **Rp1EM**

Rp - Riparian, 1 - Lotic, EM - Emergent
Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.

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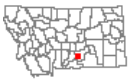

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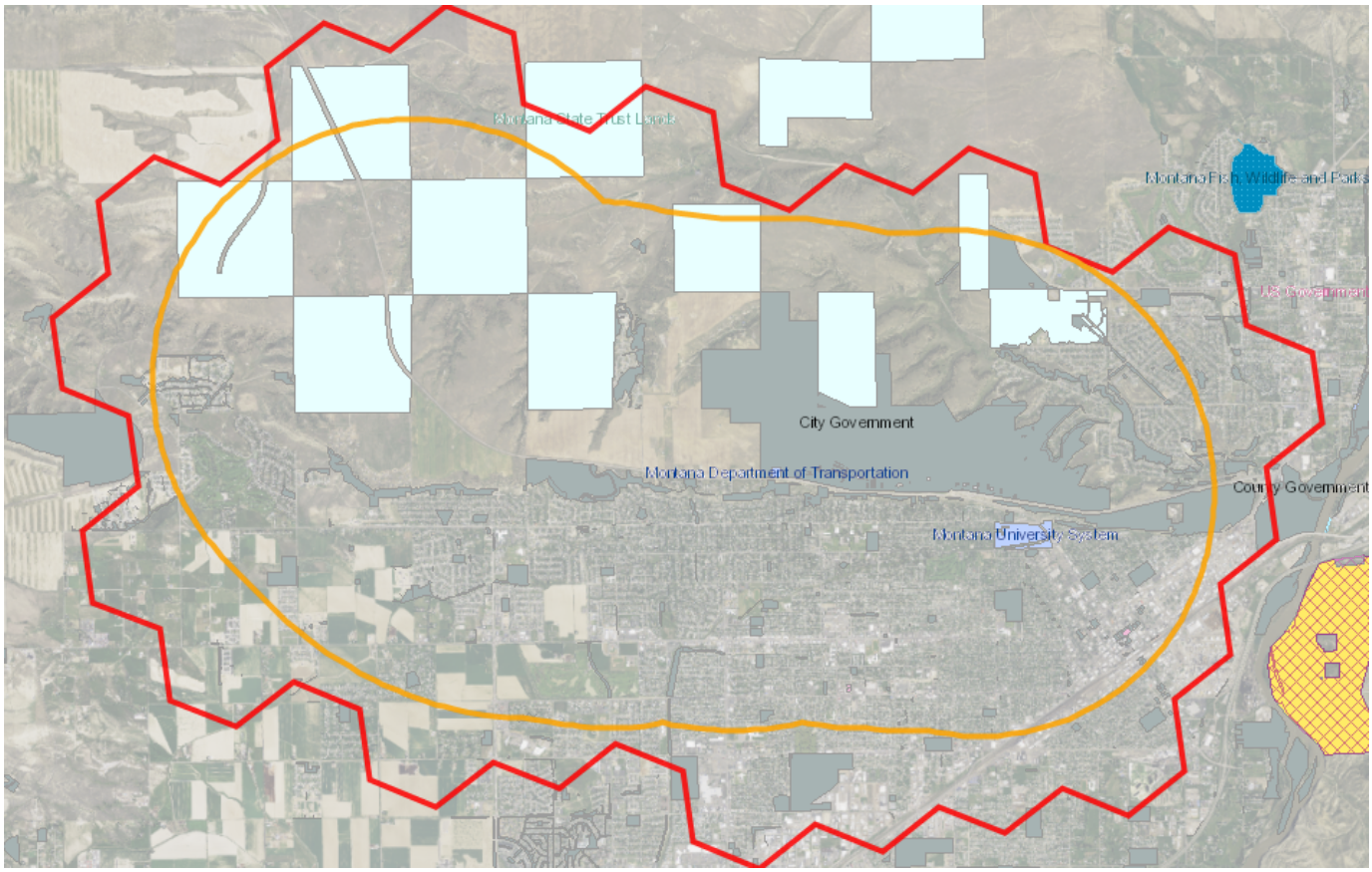
Land Management

Summarized by: **25mdt0012** *(Custom Area of Interest)*



Land Management Summary

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	**7,842 Acres (23%)**			
Federal	3 Acres (<1%)			
US Government	3 Acres (<1%)			
US Government Owned	3 Acres (<1%)			
State	4,503 Acres (13%)			
Montana State Trust Lands	4,439 Acres (13%)			
MT State Trust Owned	4,439 Acres (13%)			
Montana University System	60 Acres (<1%)			
MUS Owned	60 Acres (<1%)			
Montana Department of Transportation	4 Acres (<1%)			
MTDOT Owned	4 Acres (<1%)			
Local	3,336 Acres (10%)			
Local Government	3,336 Acres (10%)			
Local Government Owned	3,336 Acres (10%)			
Private Lands or Unknown Ownership	**26,691 Acres (77%)**			

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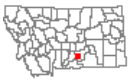

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Biological Reports

Summarized by: **25mdt0012** *(Custom Area of Interest)*

Within the report area you have requested, citations for all reports and publications associated with plant or animal observations in Montana Natural Heritage Program (MTNHP) databases are listed and, where possible, links to the documents are included.

The MTNHP plans to include reports associated with terrestrial and aquatic communities in the future as allowed for by staff resources. If you know of reports or publications associated with species or biological communities within the report area that are not shown in this report, please let us know: mtnhp@mt.gov

- Faunawest Wildlife Consultants. 1998. Status of the black-tailed and white-tailed prairie dog in Montana. Prepared for Montana Department of Fish, WIldlife & Parks.
- Hitchcock, O.B. 1939. ***Some factors affecting the development of the eggs of the Mormon cricket (Anabrus simplex Hald)***. M.Sc. Thesis. Bozeman, MT: Montana State University. 27 p.
- Regele, Deb. 2020. ***Email with tabular data detailing nesting records for osprey on the Yellowstone River***. 30 November 2020.
- Tobalske, Claudine and Linda Vance. 2017.***Predicting the distribution of Russian Olive stands in eastern Montana valley bottoms using NAIP imagery***. Report to the US EPA. Montana Natural Heritage Program. Helena, MT. 40pp.
- West EcoSystems Technology, Inc. 2017. ***Bat activity studies for the Mud Springs Wind Energy Project Carbon County, Montana. Final Report June 21 - November 3, 2016***. for EverPower Wind Holdings. Pittsburgh, PA. 25pp + appendices

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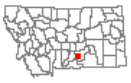
Legend

Model Icons
- N Suitable (native range)
- O Optimal Suitability
- M Moderate Suitability
- L Low Suitability
- I Suitable (introduced range)

Habitat Icons
- C Common
- O Occasional

Range Icons
- N Non-native

Num Obs
Count of obs with 'good precision' (<=1000m)
+ indicates additional 'poor precision' obs (1001m-10,000m)



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Invasive and Pest Species

Summarized by: **25mdt0012** *(Custom Area of Interest)*

	# Obs	Predicted Model	Range
Aquatic Invasive Species			
A - American Bullfrog *(Lithobates catesbeianus)* **AIS**			N
View in Field Guide · View Predicted Models · View Range Maps			
Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**			
Predicted Models: O 28% Optimal (inductive), M 33% Moderate (inductive), L 39% Low (inductive)			
V - Myriophyllum spicatum *(Eurasian Water-milfoil)* **N2A/AIS**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: O 2% Optimal (inductive), L 20% Low (inductive)			
V - Nymphaea odorata *(American Water-lily)* **AIS**			N
View in Field Guide · View Predicted Models · View Range Maps			
Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**			
Predicted Models: I 22% Suitable (introduced range) (deductive)			
F - Common Carp *(Cyprinus carpio)* **AIS**	1 +		N
View in Field Guide · View Predicted Models · View Range Maps			
Aquatic Invasive Species - Non-native Species — Global: **G5** State: **SNA**			
Predicted Models: I 2% Suitable (introduced range) (deductive)			
Noxious Weeds: Priority 1A			
V - Isatis tinctoria *(Dyer's Woad)* **N1A**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1A - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: O 57% Optimal (inductive), M 13% Moderate (inductive), L 28% Low (inductive)			
V - Centaurea solstitialis *(Yellow Starthistle)* **N1A**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1A - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: O 26% Optimal (inductive), M 44% Moderate (inductive), L 17% Low (inductive)			
V - Phragmites australis ssp. australis *(European Common Reed)* **N1A**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1A - Non-native Species — Global: **G5T5** State: **SNA**			
Predicted Models: M 2% Moderate (inductive), L 41% Low (inductive)			
V - Taeniatherum caput-medusae *(Medusahead)* **N1A**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1A - Non-native Species — Global: **G4G5** State: **SNA**			
Predicted Models: L 94% Low (inductive)			
Noxious Weeds: Priority 1B			
V - Lythrum salicaria *(Purple Loosestrife)* **N1B**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species — Global: **G5** State: **SNA**			
Predicted Models: O 61% Optimal (inductive), M 6% Moderate (inductive), L 20% Low (inductive)			
V - Polygonum cuspidatum *(Japanese Knotweed)* **N1B**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species — Global: **GNRTNR** State: **SNA**			
Predicted Models: O 50% Optimal (inductive), M 13% Moderate (inductive), L 15% Low (inductive)			
V - Echium vulgare *(Blueweed)* **N1B**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: M 2% Moderate (inductive), L 91% Low (inductive)			
V - Chondrilla juncea *(Rush Skeletonweed)* **N1B**			H
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: M 2% Moderate (inductive), L 13% Low (inductive)			
V - Cytisus scoparius *(Scotch Broom)* **N1B**			N
View in Field Guide · View Predicted Models · View Range Maps			
Noxious Weed: Priority 1B - Non-native Species — Global: **GNR** State: **SNA**			
Predicted Models: L 56% Low (inductive)			
Noxious Weeds: Priority 2A			

V - Rhamnus cathartica *(Common Buckthorn)* **N2A** 5

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 63% Optimal (inductive), M 11% Moderate (inductive), L 9% Low (inductive)

V - Ventenata dubia *(Ventenata)* **N2A**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 4% Optimal (inductive), M 85% Moderate (inductive), L 11% Low (inductive)

V - Hieracium praealtum *(Kingdevil Hawkweed)* **N2A**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 2% Optimal (inductive), M 33% Moderate (inductive), L 50% Low (inductive)

V - Myriophyllum spicatum *(Eurasian Water-milfoil)* **N2A/AIS**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Aquatic Invasive Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 2% Optimal (inductive), L 20% Low (inductive)

V - Hieracium piloselloides *(Tall Hawkweed)* **N2A**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 57% Moderate (inductive), L 15% Low (inductive)

V - Ranunculus acris *(Tall Buttercup)* **N2A**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **G5** State: **SNA**

Predicted Models: M 4% Moderate (inductive), L 46% Low (inductive)

V - Lepidium latifolium *(Perennial Pepperweed)* **N2A**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2A - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 94% Low (inductive)

Noxious Weeds: Priority 2B

V - Tamarix ramosissima *(Salt Cedar)* **N2B**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 11% Optimal (inductive), M 17% Moderate (inductive), L 70% Low (inductive)

V - Linaria dalmatica *(Dalmatian Toadflax)* **N2B** 3

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**

Predicted Models: O 4% Optimal (inductive), M 89% Moderate (inductive), L 7% Low (inductive)

V - Centaurea diffusa *(Diffuse Knapweed)* **N2B**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 2% Optimal (inductive), M 74% Moderate (inductive), L 24% Low (inductive)

V - Tanacetum vulgare *(Common Tansy)* **N2B** 1

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 2% Optimal (inductive), M 54% Moderate (inductive), L 30% Low (inductive)

V - Lepidium draba *(Whitetop)* **N2B** 1

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 78% Moderate (inductive), L 22% Low (inductive)

V - Berteroa incana *(Hoary False-alyssum)* **N2B**

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 37% Moderate (inductive), L 61% Low (inductive)

V - Centaurea stoebe *(Spotted Knapweed)* **N2B** 14

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 35% Moderate (inductive), L 65% Low (inductive)

V - Cynoglossum officinale *(Common Hound's-tongue)* **N2B** 3

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 33% Moderate (inductive), L 67% Low (inductive)

V - Convolvulus arvensis *(Field Bindweed)* **N2B** 22

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 30% Moderate (inductive), L 67% Low (inductive)

V - Acroptilon repens *(Russian Knapweed)* N2B — 2

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 22% Moderate (inductive), L 70% Low (inductive)

V - Cirsium arvense *(Canada Thistle)* N2B — 11

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **G5** State: **SNA**

Predicted Models: M 11% Moderate (inductive), L 89% Low (inductive)

V - Euphorbia virgata *(Leafy Spurge)* N2B — 6

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 6% Moderate (inductive), L 94% Low (inductive)

V - Potentilla recta *(Sulphur Cinquefoil)* N2B — 2

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 6% Moderate (inductive), L 87% Low (inductive)

V - Leucanthemum vulgare *(Oxeye Daisy)* N2B — 1

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 57% Low (inductive)

V - Linaria vulgaris *(Yellow Toadflax)* N2B

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 39% Low (inductive)

V - Hypericum perforatum *(Common St. John's-wort)* N2B

View in Field Guide | View Predicted Models | View Range Maps

Noxious Weed: Priority 2B - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: L 35% Low (inductive)

Regulated Weeds: Priority 3

V - Bromus tectorum *(Cheatgrass)* R3 — 5

View in Field Guide | View Predicted Models | View Range Maps

Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 2% Optimal (inductive), M 28% Moderate (inductive), L 70% Low (inductive)

V - Elaeagnus angustifolia *(Russian Olive)* R3 — 6

View in Field Guide | View Predicted Models | View Range Maps

Regulated Weed: Priority 3 - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 30% Moderate (inductive), L 52% Low (inductive)

Forest Pests

I - Leucoma salicis *(Satin Moth)* PESTF — 1 Not Assessed

View in Field Guide

Forest Pest - Native Species Global: **GNR** State: **SNR**

Agricultural Pests

I - Halyomorpha halys *(Brown Marmorated Stink Bug)* PESTA — 1 Not Assessed

View in Field Guide

Agricultural Pest - Non-native Species Global: **GNR** State: **SNA**

I - Popillia japonica *(Japanese Beetle)* PESTA — 7 Not Assessed

View in Field Guide

Agricultural Pest - Non-native Species Global: **GNR** State: **SNA**

Biocontrol Species

I - Oberea erythrocephala *(Red-headed Leafy Spurge Stem Borer)* BIOCNTRL

View in Field Guide | View Predicted Models | View Range Maps

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: O 15% Optimal (inductive), M 57% Moderate (inductive), L 28% Low (inductive)

I - Mecinus janthiniformis *(Dalmatian Toadflax Stem-boring Weevil)* BIOCNTRL

View in Field Guide | View Predicted Models | View Range Maps

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 87% Moderate (inductive), L 13% Low (inductive)

I - Aphthona lacertosa *(Brown-legged Leafy Spurge Flea Beetle)* BIOCNTRL

View in Field Guide | View Predicted Models | View Range Maps

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 35% Moderate (inductive), L 37% Low (inductive)

I - Aphthona nigriscutis *(Black Dot Leafy Spurge Flea Beetle)* BIOCNTRL

View in Field Guide | View Predicted Models | View Range Maps

Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Predicted Models: M 4% Moderate (inductive), L 24% Low (inductive)

I - Cyphocleonus achates *(Knapweed Root Weevil)* **BIOCNTRL**

View in Field Guide **View Predicted Models** **View Range Maps**
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**
Predicted Models: L 41% Low (inductive)

I - Hyles euphorbiae *(Leafy Spurge Hawkmoth)* **BIOCNTRL** 3 Not Assessed N

View in Field Guide **View Range Maps**
Biocontrol Species - Non-native Species Global: **G5** State: **SNA**

I - Larinus minutus *(Lesser Knapweed Flower Weevil)* **BIOCNTRL** 1 Not Assessed

View in Field Guide
Biocontrol Species - Non-native Species Global: **GNR** State: **SNA**

Introduction to Montana Natural Heritage Program

PO Box 201800 • 1201 11th Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • phone 406.444.3989 • mtnhp.org

Introduction

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute as well as through ongoing interaction with, and feedback from, principal data source agencies such as Montana Fish, Wildlife, and Parks, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana University System, the US Forest Service, and the US Bureau of Land Management. Since the first staff was hired in 1985, the Program has logged a long record of success, and developed into a highly respected, service-oriented program. MTNHP is widely recognized as one of the most advanced and effective of over 60 natural heritage programs that are distributed across North America.

Vision

Our vision is that public agencies, the private sector, the education sector, and the general public will trust and rely upon MTNHP as the source for information and expertise on Montana's species and habitats, especially those of conservation concern. We strive to provide easy access to our information to allow users to save time and money, speed environmental reviews, and make informed decisions.

Core Values

- We endeavor to be a single statewide source of accurate and up-to-date information on Montana's plants, animals, and aquatic and terrestrial biological communities.
- We actively listen to our data users and work responsively to meet their information and training needs.
- We strive to provide neutral, trusted, timely, and equitable service to all of our information users.
- We make every effort to be transparent to our data users in setting work priorities and providing data products.

Confidentiality

All information requests made to the Montana Natural Heritage Program are considered library records and are protected from disclosure by the Montana Library Records Confidentiality Act (MCA 22-1-11).

Information Managed

Information managed at the Montana Natural Heritage Program is botanical, zoological, and ecological information that describes the distribution (e.g., observations, structured surveys, range polygons, predicted habitat suitability models), conservation status (e.g., global and state conservation status ranks, including threats), and other supporting information (e.g., accounts and references) on the biology and ecology of species and biological communities.

Data Use Terms and Conditions

- Montana Natural Heritage Program (MTNHP) products and services are based on biological data and the objective interpretation of those data by professional scientists. MTNHP does not advocate any particular philosophy of natural resource protection, management, development, or public policy.
- MTNHP has no natural resource management or regulatory authority. Products, statements, and services from MTNHP are intended to inform parties as to the state of scientific knowledge about certain natural resources, and to further develop that knowledge. The information is not intended as natural resource management guidelines or prescriptions or a determination of environmental impacts. MTNHP recommends consultation with appropriate state, federal, and tribal resource management agencies and authorities in the area where your project is located.
- Information on the status and spatial distribution of biological resources produced by MTNHP are intended to inform parties of the state-wide status, known occurrence, or the likelihood of the presence of those resources. **These products are not intended to substitute for field-collected data, nor are they intended to be the sole basis for natural resource management decisions.**
- MTNHP does not portray its data as exhaustive or comprehensive inventories of rare species or biological communities. **Field verification of the absence or presence of sensitive species and biological communities will always be an important obligation of users of our data.**
- MTNHP responds equally to all requests for products and services, regardless of the purpose or identity of the requester.
- Because MTNHP constantly updates and revises its databases with new data and information, products will become outdated over time. Interested parties are encouraged to obtain the most current information possible from MTNHP, rather than using older products. We add, review, update, and delete records on a daily basis. Consequently, we strongly advise that you update your MTNHP data sets at a minimum of every four months for most applications of our information.
- MTNHP data require a certain degree of biological expertise for proper analysis, interpretation, and application. Our staff is available to advise you on questions regarding the interpretation or appropriate use of the data that we provide. See Contact Information for MTNHP Staff
- The information provided to you by MTNHP may include sensitive data that if publicly released might jeopardize the welfare of threatened, endangered, or sensitive species or biological communities. This information is intended for distribution or use only within your department, agency, or business. Subcontractors may have access to the data during the course of any given project, but should not be given a copy for their use on subsequent, unrelated work.
- MTNHP data are made freely available. Duplication of hard-copy or digital MTNHP products with the intent to sell is prohibited without written consent by MTNHP. Should you be asked by individuals outside your organization for the type of data that we provide, please refer them to MTNHP.
- MTNHP and appropriate staff members should be appropriately acknowledged as an information source in any third-party product involving MTNHP data, reports, papers, publications, or in maps that incorporate MTNHP graphic elements.
- Sources of our data include museum specimens, published and unpublished scientific literature, field surveys by state and federal agencies and private contractors, and reports from knowledgeable individuals. MTNHP actively solicits and encourages additions, corrections and updates, new observations or collections, and comments on any of the data we provide.
- MTNHP staff and contractors do not enter or cross privately-owned lands without express permission from the landowner. However, the program cannot guarantee that information provided to us by others was obtained under adherence to this policy.

Suggested Contacts for Natural Resource Management Agencies

As required by Montana statute (MCA 90-15), the Montana Natural Heritage Program works with state, federal, tribal, nongovernmental organizations, and private partners to ensure that the latest animal and plant distribution and status information is incorporated into our databases so that it can be used to inform a variety of permitting and planning processes and management decisions. We encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located and review the permitting overviews by the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation and the Index of Environmental Permits for Montana for guidelines relevant to your efforts. In particular, we encourage you to contact the Montana Department of Fish, Wildlife, and Parks for the latest data and management information regarding hunted and high-profile management species and to use the U.S. Fish and Wildlife Service's Information Planning and Consultation (IPAC) website regarding U.S. Endangered Species Act listed Threatened, Endangered, or Candidate species.

For your convenience, we have compiled a list of relevant agency contacts and links below:

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Kristina Smucker KSmucker@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	Brian Wakeling brian.wakeling@mt.gov (406) 444-3940
Managed Terrestrial Game Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Fisheries Data and Nongame Animal Data	Adam Messer – MFWP GIS Coordinator amesser@mt.gov (406) 444-0095
Wildlife and Fisheries Scientific Collector's Permits	https://fwp.mt.gov/buyandapply/commercialwildlifeandscientificpermits/scientific Kristina Smucker for Wildlife ksmucker@mt.gov (406) 444-5209 Dave Schmetterling for Fisheries dschmetterling@mt.gov (406) 542-5514
Fish and Wildlife Recommendations for Subdivision Development	Stevie Burton stevie.burton@mt.gov (406) 594-7354 See https://fwp.mt.gov/conservation/living-with-wildlife/subdivision-recommendations
Regional Contacts  	Region 1 (Kalispell) (406) 752-5501 fwprg12@mt.gov Region 2 (Missoula) (406) 542-5500 fwprg22@mt.gov Region 3 (Bozeman) (406) 577-7900 fwprg3@mt.gov Region 4 (Great Falls) (406) 454-5840 fwprg42@mt.gov Region 5 (Billings) (406) 247-2940 fwprg52@mt.gov Region 6 (Glasgow) (406) 228-3700 fwprg62@mt.gov Region 7 (Miles City) (406) 234-0900 fwprg72@mt.gov

Montana Department of Agriculture
General Contact Information: https://agr.mt.gov/About/Office-Locations/Office-Locations-and-Field-Offices
Noxious Weeds: https://agr.mt.gov/Noxious-Weeds

Montana Department of Environmental Quality
Permitting and Operator Assistance for all Environmental Permits: https://deq.mt.gov/Permitting
Opencut Mining Web Mapping Application for review of opencut mining applications
https://gis.mtdeq.us/portal/apps/webappviewer/index.html?id=7b60084bc4c444a19c9a7a0867e7635a

Montana Department of Natural Resources and Conservation
Overview of, and contacts for, licenses and permits for state lands, water, and forested lands:
https://dnrc.mt.gov/Permits-Services

Stream Permitting (310 permits) and an overview of various water and stream related permits (e.g., Stream Protection Act 124, Federal Clean Water Act 404, Federal Rivers and Harbors Act Section 10, Short-term Water Quality Standard for Turbidity 318 Authorization, etc.).
https://dnrc.mt.gov/Licenses-and-Permits/Stream-Permitting

Wildfire Resources: https://dnrc.mt.gov/Forestry/Wildfire

Bureau of Land Management

Montana Field Office Contacts:

Billings	(406) 896-5013
Butte	(406) 533-7600
Dillon	(406) 683-8000
Glasgow	(406) 228-3750
Havre	(406) 262-2820
Lewistown	(406) 538-1900
Malta	(406) 654-5100
Miles City	(406) 233-2800
Missoula	(406) 329-3914

United States Army Corps of Engineers
Montana Regulatory Office for federal permits related to construction in water and wetlands
https://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/ (406) 441-1375

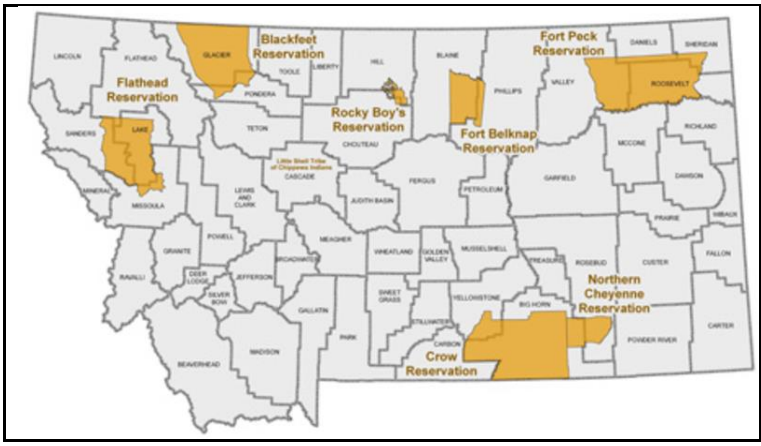
United States Environmental Protection Agency
Environmental information, notices, permitting, and contacts https://www.epa.gov/mt
Gateway to state resource locators https://www.envcap.org/srl/index.php

United States Fish and Wildlife Service
Information Planning and Conservation (IPAC) website: https://ipac.ecosphere.fws.gov
Montana Ecological Services Field Office: https://www.fws.gov/office/montana-ecological-services (406) 449-5225

United States Forest Service

Regional Office – Missoula, Montana Contacts			
Wildlife Program Leader	Tammy Fletcher	tammy.fletcher2@usda.gov	(406) 329-3086
Aquatic Ecologist	Justin Jimenez	justin.jimenez@usda.gov	(435) 370-6830
TES Program	Lydia Allen	lydia.allen@usda.gov	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	scott.jackson@usda.gov	(406) 329-3664
Regional Botanist	Amanda Hendrix	amanda.hendrix@usda.gov	(651) 447-3016
Regional Vegetation Ecologist	Mary Manning	marry.manning@usda.gov	(406) 329-3304
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

Tribal Nations



[Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation]

[Assiniboine & Sioux Tribes – Fort Peck Reservation]

[Blackfeet Tribe - Blackfeet Reservation]

[Chippewa Creek Tribe - Rocky Boy's Reservation]

[Crow Tribe – Crow Reservation]

[Little Shell Chippewa Tribe]

[Northern Cheyenne Tribe – Northern Cheyenne Reservation]

[Salish & Kootenai Tribes - Flathead Reservation]

Natural Heritage Programs and Conservation Data Centers in Surrounding States and Provinces

[Alberta Conservation Information Management System]
[British Columbia Conservation Data Centre]
[Idaho Natural Heritage Program]
[North Dakota Natural Heritage Program]
[Saskatchewan Conservation Data Centre]
[South Dakota Natural Heritage Program]
[Wyoming Natural Diversity Database]

Invasive Species Management Contacts and Information

Aquatic Invasive Species

[Montana Fish, Wildlife, and Parks Aquatic Invasive Species staff]
[Montana Department of Natural Resources and Conservation's Aquatic Invasive Species Grant Program]
[Montana Invasive Species Council (MISC)]
[Western Montana Conservation Commission]

Noxious Weeds

[Montana Weed Control Association Contacts Webpage]
[Montana Biological Weed Control Coordination Project]
[Montana Department of Agriculture - Noxious Weeds]
[Montana Weed Control Association]
[Montana Fish, Wildlife, and Parks - Noxious Weeds]
[Montana State University Integrated Pest Management Extension]
[Integrated Noxious Weed Management after Wildfires]
[Fire Management and Invasive Plants]

Introduction to Native Species

Within the report area you have requested, separate summaries are provided for: (1) Species Occurrences (SO) for plant and animal Species of Concern, Special Status Species (SSS), Important Animal Habitat (IAH) and some Potential Plant Species of Concern; (2) other observed non Species of Concern or Species of Concern without suitable documentation to create Species Occurrence polygons; and (3) other non-documented species that are potentially present based on their range, predicted suitable habitat model output, or presence of associated habitats. Each of these summaries provides the following information when present for a species: (1) the number of Species Occurrences and associated delineation criteria for construction of these polygons that have long been used for considerations of documented Species of Concern in environmental reviews; (2) the number of observations of each species; (3) the geographic range polygons for each species that the report area overlaps; (4) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (5) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the Montana Field Guide; and (6) a variety of conservation status ranks and links to species accounts in the Montana Field Guide. Details on each of these information categories are included under relevant section headers below or are defined on our Species Status Codes page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document native and introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are restricted by budgets, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species and biological communities will always be an important obligation of users of our data.**

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos: https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx

Observations

The MTNHP manages information on several million animal and plant observations that have been reported by professional biologists and private citizens from across Montana. The majority of these observations are submitted in digital format from standardized databases associated with research or monitoring efforts and spreadsheets of incidental observations submitted by professional biologists and amateur naturalists. At a minimum, accepted observation records must contain a credible species identification (i.e. appropriate geographic range, date, and habitat and, if species are difficult to identify, a photograph and/or notes on key identifying features), a date or date range, observer name, locational information (ideally with latitude and longitude in decimal degrees), notes on numbers observed, and species behavior or habitat use (e.g., is the observation likely associated with reproduction). Bird records are also required to have information associated with date-appropriate breeding or overwintering status of the species observed. MTNHP reviews observation records to ensure that they are mapped correctly, occur within date ranges when the species is known to be present or detectable, occur within the known seasonal geographic range of the species, and occur in appropriate habitats. MTNHP also assigns each record a locational uncertainty value in meters to indicate the spatial precision associated with the record's mapped coordinates. Only records with locational uncertainty values of 10,000 meters or less are included in environmental summary reports and number summaries are only provided for records with locational uncertainty values of 1,000 meters or less.

Species Occurrences

The MTNHP evaluates plant and animal observation records for species of higher conservation concern to determine whether they are worthy of inclusion in the Species Occurrence (SO) layer for use in environmental reviews; observations not worthy of inclusion in this layer include long distance dispersal events, migrants observed away from key migratory stopover habitats, and winter observations. An SO is a polygon depicting what is known about a species occupancy from direct observation with a defined level of locational uncertainty and any inference that can be made about adjacent habitat use from the latest peer-reviewed science. If an observation can be associated with a map feature that can be tracked (e.g., a wetland boundary for a wetland associated plant) then this polygon feature is used to represent the SO. Areas that can be inferred as probable occupied habitat based on direct observation of a species location and what is known about the foraging area or home range size of the species may be incorporated into the SO. Species Occurrences generally belong to one of the following categories:

Plant Species Occurrences

A documented location of a specimen collection or observed plant population. In some instances, adjacent, spatially separated clusters are considered subpopulations and are grouped as one occurrence (e.g., the subpopulations occur in ecologically similar habitats, and their spatial proximity likely allows them to interbreed). Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Plant SO's are only created for Species of Concern and Potential Species of Concern.

Animal Species Occurrences

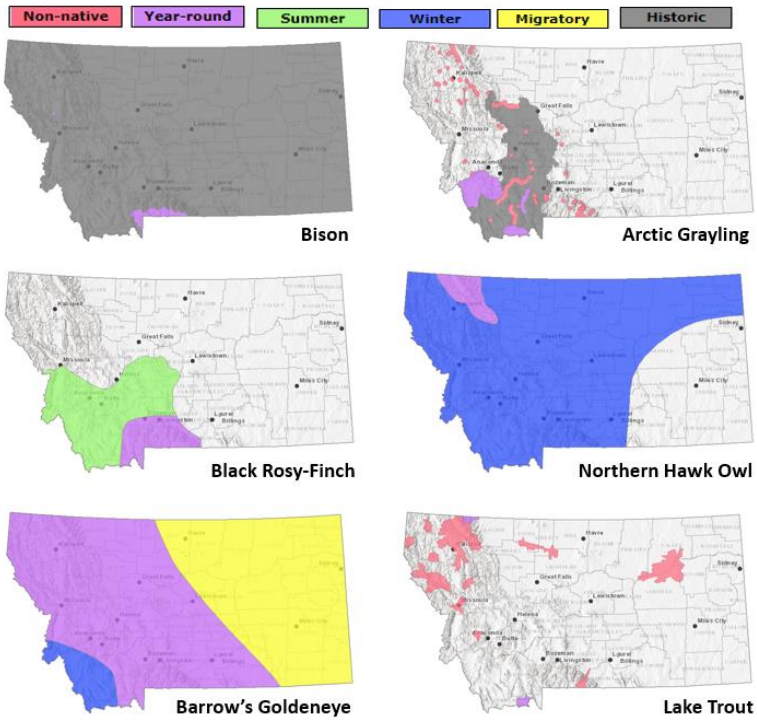
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream segments to encompass occupied streams and immediate adjacent riparian habitats; (3) polygonal features encompassing known or likely breeding populations (e.g., a wetland for some amphibians or a forested portion of a mountain range for some wide-ranging carnivores); or (4) combinations of the above. Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Species Occurrence polygons may encompass some unsuitable habitat in some instances in order to avoid heavy data processing associated with clipping out habitats that are readily assessed as unsuitable by the data user (e.g., a point buffer of a terrestrial species may overlap into a portion of a lake that is obviously inappropriate habitat for the species). Animal SO's are only created for Species of Concern and Special Status Species (e.g., Bald Eagle).

Other Occurrence Polygons

These include significant biological features not included in the above categories, such as Important Animal Habitats like bird rookeries and bat roosts, and peatlands or other wetland and riparian communities that support diverse plant and animal communities.

Geographic Range Polygons

Geographic range polygons are still under development for most plant and invertebrate species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced populations have been defined for most vertebrate animal species for which there are enough observations, surveys, and knowledge of appropriate seasonal habitat use to define them (see examples to left). These native or introduced range polygons bound the extent of known or likely occupied habitats for non-migratory and relative sedentary species and the regular extent of known or likely occupied habitats for migratory and long-distance dispersing species; polygons may include unsuitable intervening habitats. For most species, a single polygon can represent the year-round or seasonal range, but breeding ranges of some colonial nesting water birds and some introduced species are represented more patchily when supported by data. Some ranges are mapped more broadly than actual distributions in order to be visible on statewide maps (e.g., fish).



Predicted Suitable Habitat Models

Predicted habitat suitability models have been created for plant and animal Species of Concern and are undergoing development for non-Species of Concern. For species for which models have been completed, the environmental summary report includes simple rule-based associations with streams for aquatic species and seasonal habitats for game species as well as mathematically complex Maximum Entropy models (Phillips et al. 2006, Ecological Modeling 190:231-259) constructed from a variety of statewide biotic and abiotic layers and presence only data for individual species for most terrestrial species. For the Maximum Entropy models, we reclassified 90 x 90-meter continuous model output into suitability classes (unsuitable, low, moderate, and optimal) then aggregated that into the one square mile hexagons used in the environmental summary report; this is the finest spatial scale we suggest using this information in management decisions and survey planning. Full model write ups for individual species that discuss model goals, inputs, outputs, and evaluation in much greater detail are posted on the MTNHP's Predicted Suitable Habitat Models webpage. Evaluations of predictive accuracy and specific limitations are included with the metadata for models of individual species. **Model outputs should not be used in place of on-the-ground surveys for species. Instead model outputs should be used in conjunction with habitat evaluations to determine the need for on-the-ground surveys for species.** We suggest that the percentage of predicted optimal and moderate suitable habitat within the report area be used in conjunction with geographic range polygons and the percentage of commonly associated habitats to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning.

Associated Habitats

Within the boundary of the intersected hexagons, we provide the approximate percentage of commonly or occasionally associated habitat for vertebrate animal species that regularly breed, overwinter, or migrate through the state; a detailed list of commonly and occasionally associated habitats is provided in individual species accounts in the Montana Field Guide We assigned common or occasional use of each of the ecological

systems mapped in Montana by: (1) using personal knowledge and reviewing literature that summarizes the breeding, overwintering, or migratory habitat requirements of each species; (2) evaluating structural characteristics and distribution of each ecological system relative to the species' range and habitat requirements; (3) examining the observation records for each species in the state-wide point observation database associated with each ecological system; and (4) calculating the percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system to get a measure of numbers of observations versus availability of habitat. Species that breed in Montana were only evaluated for breeding habitat use, species that only overwinter in Montana were only evaluated for overwintering habitat use, and species that only migrate through Montana were only evaluated for migratory habitat use. In general, species were listed as associated with an ecological system if structural characteristics of used habitat documented in the literature were present in the ecological system or large numbers of point observations were associated with the ecological system. However, species were not listed as associated with an ecological system if there was no support in the literature for use of structural characteristics in an ecological system, even if point observations were associated with that system. Common versus occasional association with an ecological system was assigned based on the degree to which the structural characteristics of an ecological system matched the preferred structural habitat characteristics for each species as represented in the scientific literature. The percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system was also used to guide assignment of common versus occasional association.

We suggest that the percentage of commonly associated habitat within the report area be used in conjunction with geographic range polygons and the percentage of predicted optimal and moderate suitable habitat from predictive models to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning. Users of this information should be aware that land cover mapping accuracy is particularly problematic when the systems occur as small patches or where the land cover types have been altered over the past decade. Thus, particular caution should be used when using the associations in assessments of smaller areas (e.g., evaluations of public land survey sections).

Introduction to Land Cover

Land Use/Land Cover is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100,000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download from the Montana State Library's GIS Data List More information on the land cover layer is available at: https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Introduction to Wetland and Riparian

Within the report area you have requested, wetland and riparian mapping is summarized by acres of each classification present. Summaries are only provided for modern MTNHP wetland and riparian mapping and not for outdated (NWI Legacy) or incomplete (NWI Scalable) mapping efforts; described here. MTNHP has made all three of these datasets and associated metadata available for separate download on the Montana Wetland and Riparian Framework web page.

Wetland and Riparian mapping is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deep water habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

See detailed overviews, with examples, of both wetland and riparian classification systems and associated codes as a storymap and companion guide

Literature Cited

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.

U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Introduction to Land Management

Within the report area you have requested, land management information is summarized by acres of federal, state, and local government lands, tribal reservation boundaries, private conservation lands, and federal, state, local, and private conservation easements. Acreage for "Owned", "Tribal", or "Easement" categories represents non-overlapping areas that may be totaled. However, "Other Boundaries" represents managed areas such as National Forest boundaries containing private inholdings and other mixed ownership which may cause boundaries to overlap (e.g. a wilderness area within a forest). Therefore, acreages may not total in a straight-forward manner.

Because information on land stewardship is critical to effective land management, the Montana Natural Heritage Program (MTNHP) began compiling ownership and management data in 1997. The goal of the Montana Land Management Database is to manage a single, statewide digital data set that incorporates information from both public and private entities. The database assembles information on public lands, private conservation lands, and conservation easements held by state and federal agencies and land trusts and is updated on a regular basis. Since 2011, the Information Management group in the Montana State Library's Digital Library Division has led the Montana Land Management Database in partnership with the MTNHP.

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide Montana Cadastral Parcel layer Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the landowner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5363 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library's GIS Data List at the following links:

Public Lands
Conservation Easements
Private Conservation Lands
Managed Areas

Map features in the Montana Land Management Database or summaries provided in this report are not intended as a legal depiction of public or private surface land ownership boundaries and should not be used in place of a survey conducted by a licensed land surveyor. Similarly, map features do not imply public access to any lands. The Montana Natural Heritage Program makes no representations or warranties whatsoever with respect to the accuracy or completeness of this data and assumes no responsibility for the suitability of the data for a particular purpose. The Montana Natural Heritage Program will not be liable for any damages incurred as a result of errors displayed here. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes.

Introduction to Invasive and Pest Species

Within the report area you have requested, separate summaries are provided for: Aquatic Invasive Species, Noxious Weeds, Agricultural Pests, Forest Pests, and Biocontrol species that have been documented or potentially occur there based on the predicted suitability of habitat. Definitions for each of these invasive and pest species categories can be found on our Species Status Codes page.

Each of these summaries provides the following information when present for a species: (1) the number of observations of each species; (2) the geographic range polygons for each species, if developed, that the report area overlaps; (3) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (4) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the Montana Field Guide; and (5) links to species accounts in the Montana Field Guide. Details on each of these information categories are included under relevant section headers under the Introduction to Native Species above or are defined on our Species Status Codes page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what invasive and pest species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are limited, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species will always be an important obligation of users of our data.**

If you are aware of observation or survey datasets for invasive or pest species that the MTNHP is missing, please report them to the Program Coordinator bmaxell@mt.gov Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov If you have animal or plant observations that you would like to contribute, you can also submit them via Excel spreadsheets, geodatabases, iNaturalist, or a Survey123 form. Various methods of data submission are reviewed in this playlist of videos:
https://www.youtube.com/playlist?list=PLRaydtZpHu2qOHPoSPq9cnM9uXGmEXACx

Additional Information Resources

- Effects of Recreation on Rocky Mountain Wildlife
- Laws, Treaties, Regulations, and Agreements on Animals and Plants
- MTNHP Staff Contact Information
- Montana Field Guide
- MTNHP Species of Concern Report - Animals and Plants
- MTNHP Species Status Codes - Explanation
- MTNHP Predicted Suitable Habitat Models (for select Animals and Plants)
- MTNHP Request Information page
- Montana Cadastral
- Montana Code Annotated
- Montana Fisheries Information System
- Montana Fish, Wildlife, and Parks Subdivision Recommendations
- Montana Forestry Best Management Practices
- Montana GIS Data Layers
- Montana GIS Data Bundler
- Montana Greater Sage-Grouse Project Submittal Site
- Montana Guide to Streamside Management Zone Law and Rules
- Montana Ground Water Information Center
- Montana Index of Environmental Permits, 21st Edition (2018)
- Montana Environmental Policy Act (MEPA)
- Montana Environmental Policy Act Analysis Resource List
- Montana Native Plant Conservation Strategy
- Montana Spatial Data Infrastructure Layers
- Montana State Historic Preservation Office Review and Compliance
- Montana Stream Permitting: a guide for conservation district supervisors and others
- Montana Water Information System
- Montana Web Map Services
- National Environmental Policy Act
- Penalties for Misuse of Fish and Wildlife Location Data (MCA 87-6-222)
- U.S. Fish and Wildlife Service Information for Planning and Consultation (Section 7 Consultation)
- Uses of Information from the Montana Natural Heritage Program
- Web Soil Survey Tool
- Xerces Society for Invertebrate Conservation Resources