90 CORRIDOR STUDY

West Three Forks to Bear Canyon

Environmental Scan Report

DRAFT

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MONTANA
Department of Transportation

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Appendices

Appendix A: Environmental Summary Report *(available from MDT upon request)*
Appendix B: Cultural Resource Sites

Acronyms

BGEPA	Bald and Golden Eagle Protection Act
BCC	Birds of Conservation Concern
CAA	Clean Air Act
CWA	Clean Water Act
CERCA	Comprehensive Environmental Cleanup and Responsibility Act (CECRA)
ESA	Endangered Species Act
ESR	Environmental Summary Report
EO	Executive Order
FPPA	Farmland Policy Protection Act
FEMA	Federal Emergency Management
FHWA	Federal Highway Administration
FAS	Fishing Access Sites
GWIC	Groundwater Information Center
HUC	Hydrologic Unit Code
IAH	Insufficiently Assessed or Historical
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
MAAQS	Montana Ambient Air Quality Standards
MBMG	Montana Bureau of Mines and Geology
MDEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFWP	Montana Fish, Wildlife & Parks
MTNHP	Montana National Heritage Program
MPDES	Montana Pollutant Discharge Elimination System
MSU	Montana State University
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHS	National Highway System
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NPL	National Priority List
NWI	National Wetland Inventory
PCP	Pentachlorophenol
PESC	Permanent Erosion and Sediment Control
PAHs	Polycyclic Aromatic Hydrocarbons
PSOC	Potential Species of Concern
SOC	Species of Concern
SCC	Species of Conservation Concern
SSS	Species of Special Status
SNR	State Not Ranked
SSFA	State Superfund Facilities Area
SSU	State Superfund Unit
SPA	Stream Protection Act
USFS	United States Forest Service
TMDLs	Total Maximum Daily Loads
USACE	United States Army Corps of Engineers
USBLM	United States Bureau of Land Management
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
NRCS	USDA Natural Resources Conservation Service

1.0 INTRODUCTION

The Montana Department of Transportation (MDT) is developing a corridor study of Interstate 90 (I-90) between West Three Forks and Bozeman, Montana. The purpose of the *I-90 Corridor Study* is to develop a comprehensive long-range plan for managing the Interstate corridor and identifying improvements that can be implemented to address existing and future needs. The study evaluates potential improvements based on identified transportation needs, public and agency input, environmental considerations, access management, and financial feasibility. It is a collaborative effort involving MDT, the Federal Highway Administration (FHWA), local jurisdictions, resource agencies, and the public to define corridor needs and identify viable, context-sensitive solutions.

This *Environmental Scan* provides a planning-level overview of environmental resources within the corridor and aims to document existing resources, potential impacts, and opportunities for avoidance or mitigation. The *Environmental Scan* is based on readily available, publicly accessible information and evaluates physical, biological, social, and cultural resources in the study area. The scan is not intended to serve as a detailed environmental investigation; rather, it identifies potential environmental constraints and considerations that may influence the development of corridor improvement options. If improvement options are advanced from this planning-level study into project development, detailed environmental analyses to comply with the National and Montana Environmental Policy Acts (NEPA and MEPA), as well as other applicable federal and state regulations, will be completed as part of the project development process. Information presented in this report is intended to support and inform future NEPA/MEPA compliance efforts.

1.1 Study Area

The study area includes I-90 extending from the West Three Forks Interchange in Broadwater County at reference point (RP) 274.6 and continues across Gallatin County to the Bear Canyon Road Interchange at RP 313.7. The corridor traverses through or adjacent to the communities of Three Forks, Logan, Manhattan, Belgrade, and Bozeman. This segment of I-90 serves as a vital local and regional transportation facility, accommodating daily commuter travel and providing access to jobs, schools, commercial areas, and essential services. In addition, the corridor functions as a critical national freight route that must operate reliably year-round to support regional and Interstate commerce.

The analysis area for this *Environmental Scan* includes a continuous 300-foot buffer extending from the Interstate centerline along the 40-mile corridor in both directions, as shown in **Figure 1.1**. In select locations, such as interchanges and other areas where infrastructure improvements may be identified, the buffer is expanded to better evaluate environmental conditions relevant to potential construction impacts, as defined below.

- Mainline Corridor: 300 feet from the Interstate centerline (both directions, total of approximately 600 feet along the corridor)
- Existing Interchanges: 300 feet from centerline of all existing Interstate ramps, plus a widened buffer to include adjacent major intersections and frontage roads where infrastructure improvements may be identified. The 11 interchanges, listed below, are labeled in **Figure 1.1**.

    1. West Three Forks
    2. Three Forks
    3. Logan
    4. Manhattan
    5. Belgrade – Amsterdam Road
    6. Belgrade – Jackrabbit Lane

7. Belgrade – Airport Boulevard
8. Bozeman – North 19th Avenue
9. Bozeman – North 7th Avenue
10. Bozeman – Main Street
11. Bozeman – Bear Canyon Road

- Existing Grade-Separated Crossings: Buffer along centerline of existing grade-separated crossings measured outward from Interstate centerline at a distance of 300 feet in each direction (with additional buffer for adjacent major intersections at L Street only).

  i. Madison Road
  ii. Manhattan Frontage Road
  iii. Manhattan South Road
  iv. Heeb Road
  v. Rouse Avenue
  vi. L Street

- Potential New Interchange Locations**:** Minimum 1,500-foot radius buffer area at locations identified for possible new interchanges based on favorable connecting roadway geometry or existing grade separation in the highest growth areas near Bozeman and Belgrade. Locations denoted with an asterisk also contain existing grade-separated crossings.

  a) Thorpe Road/Weaver Road*
  b) Richman Road
  c) Thorpe Road/Bolinger Road
  d) East Cameron Bridge Road/Harper Puckett Road
  e) East Valley Center Road/Nelson Road/Davis Lane*
  f) Fort Ellis Road*

In addition to the defined 300-foot buffer, a larger 0.5-mile buffer was used for analysis of some resources to capture reasonably foreseeable indirect environmental effects associated with the *I-90 Corridor Study*.

The study corridor and buffers intersect, in whole or in part, the following legally described areas in Broadwater and Gallatin counties.

- Township 2 North, Range 1 East, Sections 14, 15, 16, 21, 22, 23, 24, and 25
- Township 2 North, Range 2 East, Sections 27, 28, 29, 30, 34, 35, and 36
- Township 2 North, Range 3 East, Section 31
- Township 1 North, Range 3 East, Sections 4, 5, 6, 9, 10, 11, 13, 14, and 24
- Township 1 North, Range 4 East, Sections 18, 19, 20, 28, 29, 33, 34, and 35
- Township 1 South, Range 4 East, Sections 1, 2, 3, 11, and 12
- Township 1 South, Range 5 East, Sections 7, 16, 17, 18, 20, 21, 22, 23, 26, 27, 35, and 36
- Township 2 South, Range 5 East, Section 1
- Township 2 South, Range 6 East, Sections 5, 6, 8, 9, 10, 14, 15, 16, 17, and 23

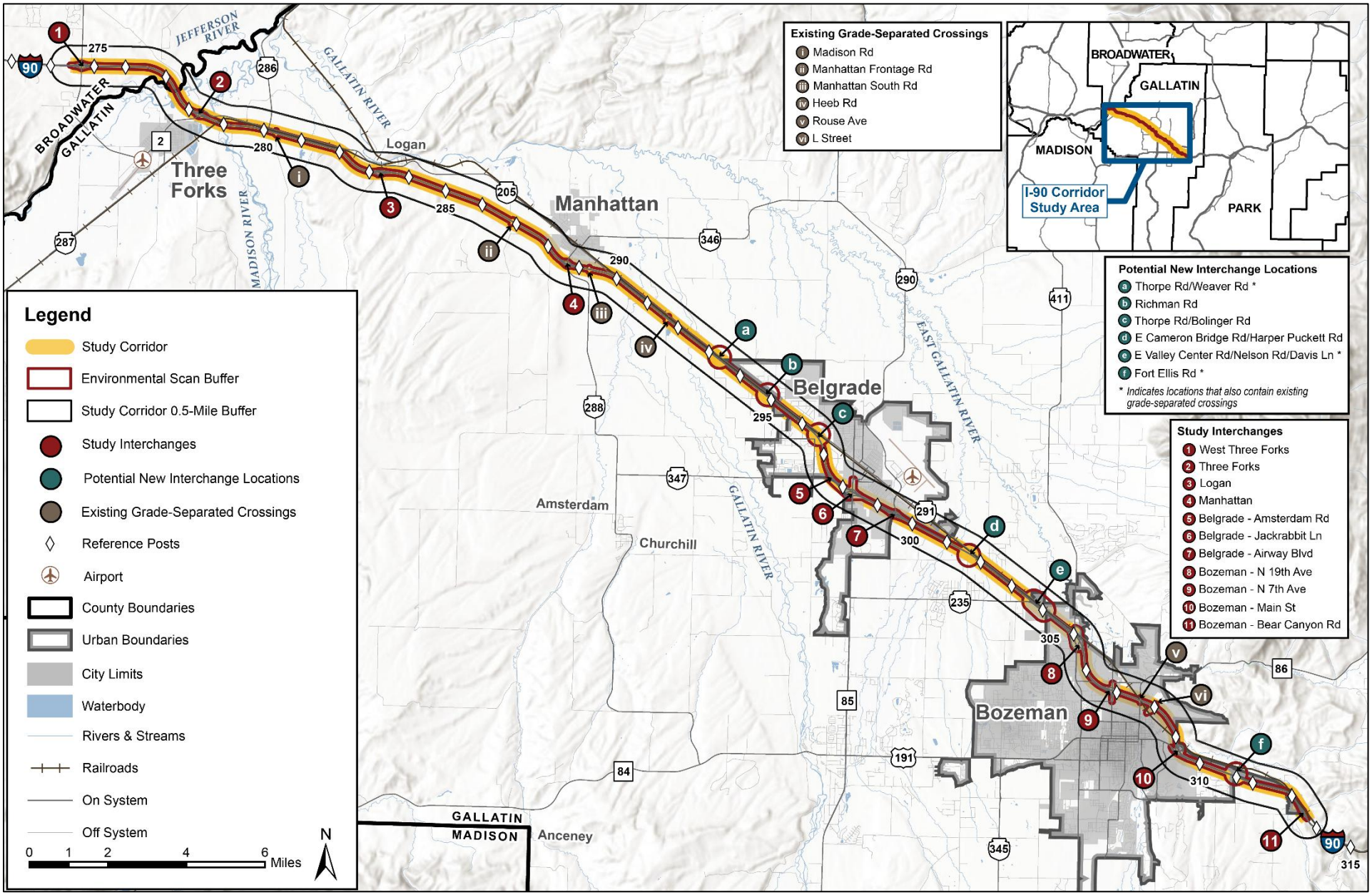

Figure 1.1: Study Area

1.2 Background

I-90 is a critical east-west corridor in Montana and a key component of the National Highway System (NHS). Within the Gallatin Valley, this segment provides essential local connectivity between communities while also supporting regional Interstate travel and freight movement. West of the study area, I-90 connects with Interstate 15 (I-15), linking central and western Montana to Canada, and continues west through Idaho to the Pacific Northwest. I-90 continues east to Billings before diverting southeast into Wyoming and South Dakota. At the diversion point, I-90 connects to Interstate 94 (I-94), which continues across eastern Montana and the northern plains. Together, these connections make the corridor a vital link for local travel as well as regional and national mobility.

The I-90 corridor traverses a varied physical and operational landscape, beginning near Three Forks where it crosses the river systems of Missouri River Headwaters State Park and provides access to recreation areas that generate tourism traffic and support nearby rural economies. This western segment also functions as a scenic route and a key regional connection between Yellowstone and Glacier National Parks. Moving east, the corridor transitions into the rapidly urbanizing areas of Belgrade and Bozeman, where it serves growing residential, commercial, and industrial development, with access to the Bozeman Yellowstone International Airport. Beyond Bozeman, I-90 enters more constrained terrain near Rocky Creek Canyon and Bozeman Pass, where topography and roadway geometry create additional operational challenges as the corridor continues toward Livingston and eastern Montana.

In recent years, the I-90 study area has experienced substantial population and economic growth, resulting in increased commuter, tourist, recreational, and commercial traffic along the corridor. Growth associated with Montana State University (MSU), an expanding technology sector, regional tourism, and increased activity at Bozeman Yellowstone International Airport has placed considerable strain on the existing infrastructure. Rising housing costs in Bozeman have pushed development outward to surrounding communities, lengthening commute distances and further concentrating traffic on I-90, particularly during peak periods. In response, numerous local and regional planning efforts have been undertaken to address changing transportation needs and evaluate long-term improvement strategies for the corridor.

1.3 Information Sources

Numerous planning and project development efforts have been completed within the I-90 study area over the past several decades, addressing transportation, land use, safety, and regional growth. These include county and municipal growth policies, long-range transportation plans, corridor studies, safety action plans, and project-level environmental and engineering documents.

Past studies document sustained population growth, expanding economic activity, and increasing travel demand within the corridor, as well as seasonal and event-based surges associated with tourism, winter recreation, and major university events that regularly produce conditions well above average traffic levels. Further information on recently completed plans and projects is contained in the *Existing & Projected Conditions Report* for this corridor study. The study draws upon pertinent information from prior efforts, along with publicly available data from federal, state, and local agencies, to characterize existing conditions and identify constraints and considerations that may influence future improvement strategies. Information presented in this *Environmental Scan* reflects the most recently available data as of April 2026 and is intended to support scalable and resilient solutions that may be advanced through future project development and environmental review processes.

2.0 PHYSICAL ENVIRONMENT

2.1 Land Ownership and Land Use

Land ownership in the study area is predominantly private, with limited public ownership by municipal and county governments in Broadwater and Gallatin counties and by state and federal agencies, as shown in **Figure 2.1**. Two state parks are located adjacent to the study corridor. Missouri Headwaters State Park, where the Jefferson, Madison and Gallatin rivers join to form the Missouri River, is located 1.6 miles north of I-90, near RP 280.0 off Trident Rd northeast of Three Forks. Madison Buffalo Jump State Park is located south of Logan and is accessed from I-90 via Exit 283, followed by a roughly seven-mile drive south on Buffalo Jump Road to the park entrance. Both Madison Buffalo Jump State Park and Missouri Headwaters State Park are owned and managed by Montana Fish, Wildlife & Parks (MFWP).

Conservation easements held by Gallatin Valley Land Trust and the Montana Land Reliance are located directly along the corridor, with one intersecting the 300-foot environmental scan buffer between RP 291 and 292.1. The Nature Conservancy, MFWP, and the United States Department of Agriculture (USDA) conservation easements also occur near or adjacent to the study corridor and are shown in **Figure 2.1**.

The valley floor along the I-90 study corridor has been shaped by long-standing agricultural use, transportation infrastructure, and more recent urban growth. Historically, the corridor developed to support agriculture, rail and highway transportation, as well as resource-based industries, which established an open valley landscape. Lands within and adjacent to incorporated communities including Three Forks, Belgrade, and Bozeman are primarily used for residential, commercial, institutional, and industrial purposes, while lands outside community boundaries remain largely devoted to crop production, grazing, utility corridors, and open space, with recreation use existing near Missouri Headwaters State Park, increasing toward the eastern end of the corridor near the Bridger Range foothills.

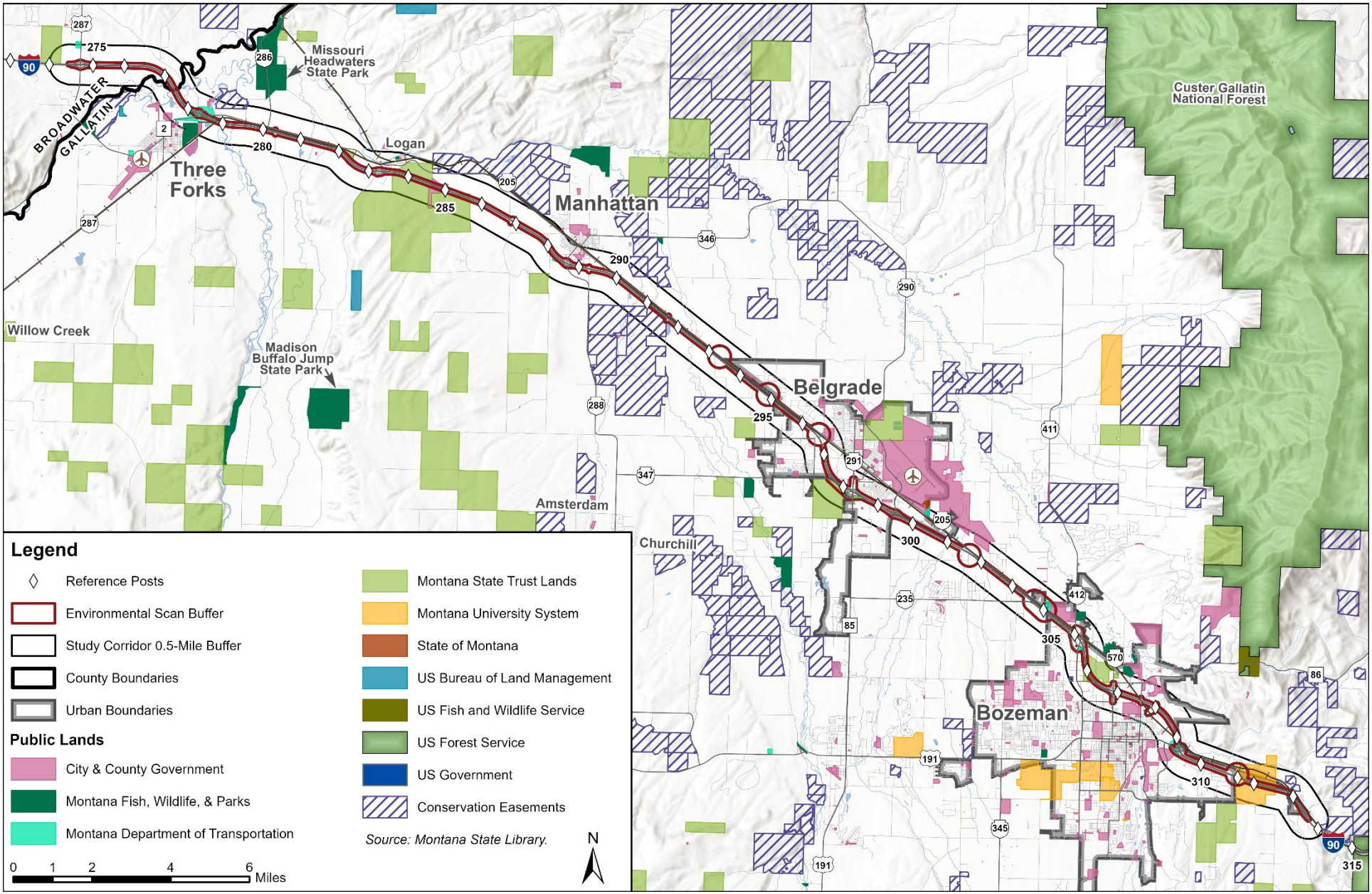

Figure 2.1: Land Ownership and Use

2.2 Soil Resources and Prime Farmland

Agriculture has historically influenced land use and settlement patterns along the I-90 corridor near Three Forks, Belgrade, and Bozeman. Early farming and ranching activities were supported by fertile valley soils and access to water from the Missouri and Gallatin river systems, with hay production, small grains, and livestock grazing common throughout the region. The Gallatin Valley near Belgrade and Bozeman developed as a productive agricultural area, while areas west of Three Forks continue to serve surrounding ranchlands. Although agricultural uses remain prevalent, portions of the corridor, particularly near Belgrade and Bozeman, have transitioned to urban and transportation-related development as the region has grown.

The *Farmland Policy Protection Act*[2] (FPPA) requires deliberate analysis of potential farmland impacts resulting from projects with federal involvement. The FPPA defines the term farmland only as prime farmland, unique farmland, and farmland of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. The FPPA does not apply to lands already in or committed to urban development but does stipulate that federal programs must be compatible with state, local and private efforts to protect farmland.

The USDA Natural Resources Conservation Service (NRCS) determines where prime farmland exists and maintains mapping resources and information to support the FPPA. 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, fiber, forage, and oilseed crops.

The study area has been mapped by the NRCS and includes soil data in the lower portion of Broadwater County (MT609), and Gallatin County (MT622) soil survey areas. **Figure 2.2** shows that within the 0.5-mile study area buffer, less than 3.9 percent of the lands are classified as prime farmland, 11.5 percent as prime farmland if irrigated,11 percent as farmland of statewide importance, 14.3 percent as farmland of local importance, with the remaining 59.4 percent not classified as farmland.[3] Within these mapped locations, undeveloped areas without buildings, roads, or utilities that are classified under one of the farmland designations and that may be impacted by future projects would be subject to provisions of the FPPA.

Federally funded projects are required to evaluate whether designated farmland would be irreversibly converted to nonagricultural use as a result of project implementation. If any improvement options identified in this planning study advance to become federally funded projects, coordination with NRCS will be required to determine applicable processing requirements. Projects that are planned and completed without federal funding or assistance are not subject to FPPA.

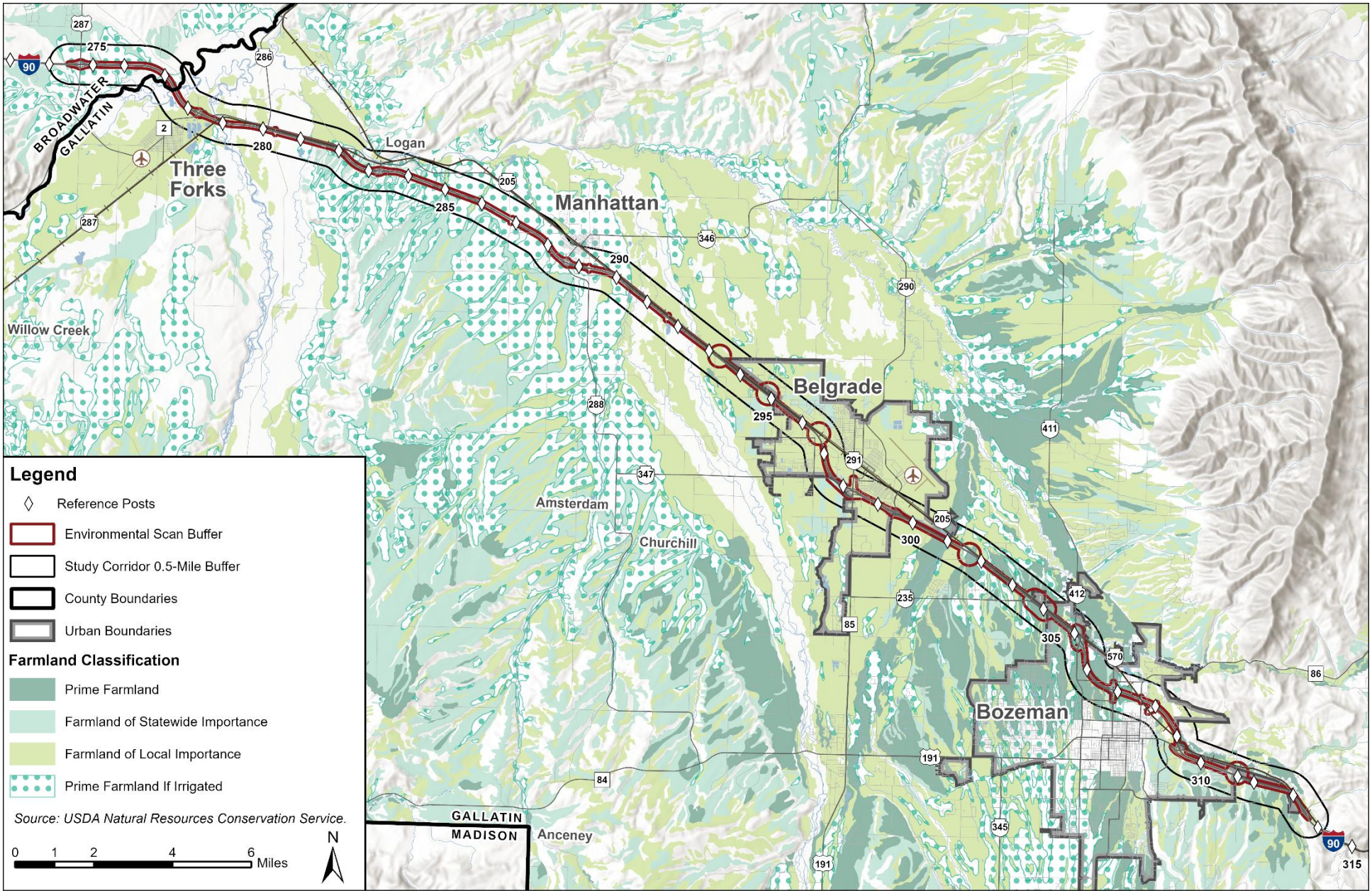

Figure 2.2: Farmland Classification

2.3 Geologic Conditions

The I-90 study corridor is situated within a series of broad intermontane valleys bordered by several prominent mountain ranges. The Tobacco Root Mountains define the southwestern portion of the study area west of Three Forks, while the Madison and Gallatin ranges form much of the southeastern boundary. The Bridger Range lies along the northeastern side of I-90. The corridor crosses portions of the Missouri, Gallatin, and Yellowstone River watersheds, whose long-term fluvial processes have played a key role in valley formation and sediment deposition over time.

Much of the valley floor along the corridor is underlain by alluvial and glacial deposits derived from prehistoric river systems and Pleistocene glaciation, including sediments associated with Glacial Lake Gallatin and regional glacial outwash. These depositional processes, together with long-term erosion and ongoing tectonic extension, have produced complex sequences of unconsolidated to semi-consolidated sediments overlying bedrock within the intermontane valleys. Continued crustal extension in the area is evidenced by mountain uplift, valley subsidence, and ongoing seismic activity.

The study corridor from Three Forks east to Bozeman traverses alternating areas of Quaternary alluvium, Tertiary sedimentary and volcanic rocks and older Paleozoic and Precambrian bedrock exposed along valley margins and adjacent uplands. The valley floor is predominantly underlain by unconsolidated alluvial deposits of silt, sand, gravel, and cobbles associated with the Gallatin and Missouri river systems and their tributaries, with localized glacially influenced sediments derived from Pleistocene outwash and glacial lake environments. Upland areas flanking the corridor are mapped primarily as Tertiary sedimentary rocks consisting of semi-consolidated sandstone, siltstone, claystone, and conglomerate deposited in intermontane basin settings during regional crustal extension, with localized Tertiary volcanic rocks reflecting associated volcanic activity. Older bedrock units exposed along the margins of the Gallatin, Bridger, Madison, and Tobacco Root ranges include Paleozoic sedimentary formations composed predominantly of limestone, dolomite, shale, and sandstone, as well as Precambrian Belt Supergroup rocks consisting of quartzite, argillite, gneiss, schist, and related metasedimentary units. Frequent transitions between surficial deposits and bedrock reflect the combined influences of tectonic uplift, erosion, and sedimentation along the corridor. **Figure 2.3** illustrates information from the *Geologic Map of the Bozeman 30'x60' Quadrangle Southwestern Montana*[4] produced by the Montana Bureau of Mines and Geology (MBMG).

According to the *Seismic-Hazard Map for the State of Montana,*[5] the I-90 corridor is located within a moderate to high seismic risk zone associated with the Intermountain Seismic Belt, which extends through the southwestern and western portions of the state, generally west of the Livingston-Great Falls-Cut Bank line, and includes the Three Forks area, Gallatin Valley, Madison Valley, and Paradise Valley. The Intermountain Seismic Belt includes the source areas of Montana's most significant historical earthquakes, including the 1959 Hebgen Lake earthquake (magnitude 7.2) and the 1925 Clarkston Valley earthquake (magnitude 6.8).[6] Due to this elevated seismicity, transportation infrastructure, bridges, and other lifeline corridors in the region are typically designed using enhanced seismic criteria consistent with National Earthquake Hazards Reduction Program standards and applicable State of Montana guidance.

Overall, the study corridor exhibits highly variable geologic and soil conditions resulting from the interaction of alluvial and glacial deposits, semi-consolidated Tertiary materials, and more competent bedrock units within an actively extending and seismically influenced region of the Intermountain Seismic Belt. The presence of unconsolidated valley-fill sediments, glacially derived fine-grained materials, and frequent transitions between surficial deposits and bedrock contributes to potential geotechnical challenges, including differential settlement, slope instability, erosion, and liquefaction susceptibility. Given these conditions and the region's elevated seismic risk, site-specific geotechnical investigations would be required to support the planning and design of improvements in accordance with MDT standards and applicable seismic design guidance.

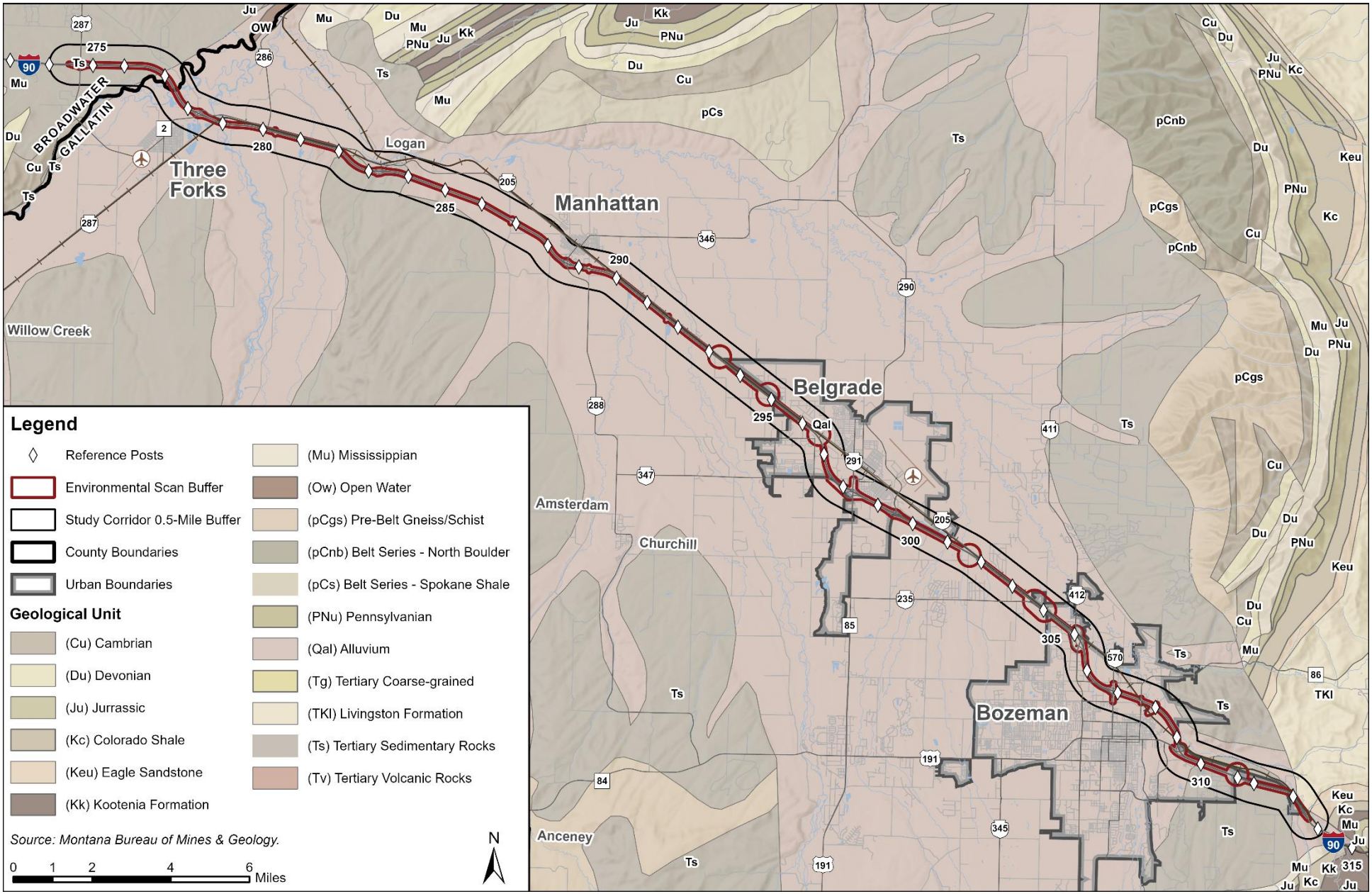

Figure 2.3: Geological Features

2.4 Surface Waters

The study area lies within the Upper Missouri Headwaters Watershed (Hydrologic Unit Code [HUC] 100200) as delineated by the United States Geological Survey (USGS). More specifically, the project corridor traverses portions of the Jefferson (HUC 10020005), Madison (HUC 10020007), and Gallatin (HUC 10020008) subwatersheds, which converge near Three Forks to form the Missouri River. The Upper Missouri Headwaters subregion, as defined by the USGS Watershed Boundary Dataset, encompasses approximately 14,100 square miles (about 9.0 million acres). Within the project area, I-90 traverses portions of the Jefferson, Madison, and Gallatin river subwatersheds which collectively drain over 8.7 million acres.

I-90 generally follows the broad intermountain valleys of the Jefferson, Madison, and Gallatin rivers, extending eastward from Three Forks through the Gallatin Valley to Bozeman. Within the 0.5-mile study area buffer, the corridor crosses several major perennial rivers, including the Jefferson River, Madison River, Gallatin River, and East Gallatin River, as well as numerous smaller tributaries such as Hyalite Creek, Bozeman Creek, Rocky Creek, and other intermittent and perennial drainages. These waterbodies include a mix of perennial and intermittent flow regimes typical of snowmelt-driven hydrology in southwest Montana.

The named streams mapped in the USGS National Hydrography Dataset (NHD) that intersect the study corridor are listed in **Table 2.1**. Information about fish-bearing streams is provided in **Section 3.2.3**. In addition to named streams, wetlands (see **Section 2.7**), irrigation facilities (see **Section 2.4.3**), and other aquatic resources (see **Figure 2.4**) are present throughout the corridor, particularly in agricultural areas of the Gallatin Valley.

Table 2.1: Named Stream and River Crossings

Name	Approximate Location (RP)	Existing Crossing Structure	Stream Type
Jefferson River	RP 277.4	Bridge	Perennial
Madison River	RP 278.8	Bridge	Perennial
Darlington Ditch 1	RP 279.6	Bridge	Intermittent (Irrigation Ditch)
Rey Creek	RP 280.8	Bridge	Intermittent
Camp Creek	RP 290.8	Bridge	Intermittent
Gallatin River	RP 292.4	Bridge	Perennial
Story Creek	RP 297.8	Culvert	Intermittent
Hyalite Creek	RP 301.1	Culvert	Perennial
Aajker Creek	RP 301.4	Culvert	Intermittent
McDonald Creek	RP 301.3	Culvert	Intermittent
Baxter Creek	RP 302.2	Culvert	Intermittent
Bozeman Creek	RP 307.8	Culvert	Perennial
East Gallatin River	RP 308.3	Bridge	Perennial
Bear Creek	RP 312.8	Culvert	Intermittent
Rocky Creek	RP 314.3	Culvert	Intermittent

Source: NHD. Montana Named Streams. 2026. https://www.usgs.gov/national-hydrography/national-hydrography-dataset.

Road construction and reconstruction activities such as bridge or culvert installation or replacement, placement of fill, or bank stabilization have the potential to impact 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 should be avoided and minimized to the maximum extent practicable. Impacts to streams and wetlands may trigger compensatory mitigation requirements.

2.4.1 Water Quality

The *Clean Water Act*[7] (CWA) is the primary federal law governing water quality protection in the United States. The Montana Department of Environmental Quality (MDEQ) is responsible for implementing CWA programs for all waters in Montana outside of Reservation lands.

Pursuant to the *Montana Water Quality Act*,[8] MDEQ prepares a report every two years that assesses the condition of surface waters across the state. This report identifies waterbodies that are not fully supporting their designated beneficial uses, such as drinking water supply, recreation, and aquatic life. Under the CWA, waterbodies that fail to meet state water quality standards are subject to the development of Total Maximum Daily Loads (TMDLs), which establish allowable pollutant loads and allocate reductions among contributing sources.

In the study area, the Jefferson, Madison, and Gallatin rivers and their tributaries are part of the Missouri River Headwaters system. These waters are generally classified by MDEQ as high-quality waters (Class B-1), supporting a range of beneficial uses including drinking water after conventional treatment, recreation, and cold-water fisheries.

According to the MDEQ's draft *Montana 2022-2024 Water Quality Integrated Report,*[9] several waterbodies within and near the study area are listed as impaired, as shown in **Figure 2.4**. Identified impairments in these systems commonly include sedimentation, nutrients, temperature, and alterations to flow regimes, which can negatively affect aquatic life and other beneficial uses.

The distribution of multiple impairment category listings within the same river systems reflects the *Water Quality Integrated Report's* assessment-unit-based framework, in which individual stream segments are independently evaluated and assigned TMDL status. Within the study area corridor, multiple assessment units (AUs) for both the Jefferson and Madison rivers are identified with differing TMDL statuses. For the Jefferson River near Three Forks, AUs MT41G001_011 and MT41G001_012 are classified as Category 4A, reflecting completed TMDLs for metals including arsenic, copper, lead, and zinc under the Jefferson River Metals TMDL Project Area; however, nearby segments and tributaries remain listed as Category 5 for impairments such as temperature and sediment requiring TMDLs. Along the Madison River through the Four Corners to Three Forks area, AUs MT41F002_010 and MT41F002_020 include both Category 4A segments with completed temperature TMDLs and adjacent Category 5 segments where temperature and other impairments remain unresolved.

The Gallatin River is designated at Category 4C, indicating threats or impairments from flow regime modification caused by crop production, which does not require a TMDL. The East Gallatin River and its associated tributaries are designated as Category 4A waters, impaired by a variety of pollutants including nitrogen, phosphorus, chlorophyll, Escherichia coli, sedimentation, altered steam-side vegetation, and flow regime modifications. The 4A classification acknowledges that all TMDLs required to rectify identified threats and impairments have been completed and approved.

Although not all streams within the corridor are formally listed as impaired, they are hydrologically connected and influenced by similar watershed processes, including agricultural runoff, urban development, stormwater inputs, and channel modification. As a result, water quality conditions in smaller tributaries can contribute cumulatively to downstream impairments.

Ongoing monitoring and watershed-based management efforts by MDEQ and local partners aim to maintain and improve water quality throughout the Gallatin Valley. These efforts include pollutant source identification, implementation of best management practices, and adaptive management strategies to address both point and nonpoint sources of pollution.

Stormwater Management

In Montana, stormwater management is regulated by MDEQ in areas under state jurisdiction. A Montana Pollutant Discharge Elimination System (MPDES) General Permit is required for stormwater discharges associated with construction activities that disturb one acre or more of total land area. The applicability of MPDES permitting requirements for improvements along the I-90 corridor would be evaluated for any projects advanced from the corridor study.

Within the study area, stormwater permitting and CWA Section 401 Water Quality Certifications are administered by MDEQ, with the United States Environmental Protection Agency (USEPA) providing federal program oversight rather than direct project-level permitting.

Municipal Separate Storm Sewer System (MS4) permits are required for incorporated communities with populations of 10,000 or greater. Within the study corridor, the City of Bozeman and City of Belgrade are designated MS4 communities and are subject to MS4 stormwater requirements, while remaining portions of the corridor fall outside currently designated MS4 boundaries.

MDT's *Permanent Erosion and Sediment Control (PESC) Design Guidelines*[10] indicate that incorporation of PESC measures should be considered with projects disturbing one acre or more, or projects having the potential to adversely affect water quality. Incorporation of PESC measures would typically be limited to projects with scopes related to rehabilitation or reconstruction and locations in proximity to sensitive resources such as impaired waterways or high-quality aquatic habitat and spawning areas. PESC measures can also provide solutions for areas with a history of erosion or sedimentation problems. The applicability of PESC measures would need to be reviewed for any projects advanced from the corridor study.

2.4.2 Wild and Scenic Rivers

The *Wild and Scenic Rivers Act*,[11] enacted by Congress in 1968, provides for the protection of rivers and their immediate environments that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

The Jefferson, Madison, and Gallatin rivers themselves are not designated as wild and scenic rivers, but they do form the headwaters of the Missouri River and are regionally significant for their scenic, recreational, ecological, and cultural values. Congress designated 149 miles of the Upper Missouri, from Fort Benton, Montana, to the James Kipp Recreation Area in central Montana, as a component of the National Wild and Scenic River System in 1976. However, no designated wild and scenic river segments currently occur directly within the I-90 study corridor.

2.4.3 Irrigation Features

Agriculture activity within the study area is concentrated in the valleys of the Gallatin, Madison, and Jefferson rivers. Production is concentrated within the Gallatin Valley, where favorable topography, fertile soils, and access to surface water have long supported irrigated farming. Irrigation has been a central component of agriculture in the valley since early settlement, with extensive diversion systems developed to utilize flows from the Gallatin River, East Gallatin River, and tributaries such as Hyalite, Bozeman, and Bear creeks.

Irrigation infrastructure consists primarily of gravity-fed diversion systems supported by a network of ditches, canals, and laterals, many of which were constructed in the late 19th and early 20th centuries and remain in operation today. These systems are managed by a combination of private

ditch companies, irrigation districts, and individual water rights holders under Montana's prior appropriation doctrine, with oversight from the Montana Department of Natural Resources and Conservation (DNRC). In recent decades, more efficient sprinkler systems, including center pivot and wheel-line systems, have become increasingly common, often supplemented by small reservoirs and on-farm storage to address seasonal variability in water supply.

Since 2017, total farmland acreage in Gallatin County has declined, continuing a trend of agricultural land conversion driven by rapid population growth in the Bozeman area. While irrigated acreage remains critical to agricultural productivity, increasing residential and commercial development has contributed to fragmentation of historically contiguous agricultural lands.

In 2022, 556,708 acres of farmland were reported in Gallatin County. Of that land, 132,507 acres (24 percent) were used for crop production, and 71,644 acres of that cropland (54 percent) were irrigated.[12] Compared to more heavily irrigated counties in western Montana, Gallatin County maintains a mixed agricultural system, with irrigated hay and small grain production alongside substantial non-irrigated pasture and rangeland. Irrigation is particularly important for forage production, which depends on reliable water supply throughout the growing season.

Water quality and availability within the Gallatin watershed remain important considerations. State assessments have identified segments of the Gallatin River and its tributaries as impaired by sediment, nutrients, and elevated temperatures, which can influence irrigation practices and require coordination among producers, conservation districts, and regulatory agencies.

Figure 2.4 shows there are 232 irrigation wells within the 0.5-mile study corridor buffer and 43 wells located within the 300-foot environmental scan buffer. Mapping from DNRC and the USGS indicates these irrigation wells are widespread throughout the study area and frequently intersect transportation corridors and developed areas.

Additional irrigation facilities data was obtained from the Gallatin County GIS Department, MSU, and Gallatin Conservation District. **Figure 2.4** reflects conditions as of 2016. Gallatin County and its partners are actively collaborating to improve the accuracy and completeness of this data through ongoing reviews, field verification, and dataset refinement. Although these datasets provide useful regional context, known inaccuracies and inconsistencies remain regarding canal locations, alignments, and attribution. Coordination with irrigation districts, ditch companies, and affected landowners will be necessary where infrastructure improvements or land use changes may affect irrigation systems, in order to avoid or minimize impacts to agricultural operations and downstream water users.

Eighteen irrigation facilities are located within the 300-foot environmental scan buffer. Of these, nine have been identified by name and are listed below for reference, while the remaining nine are unnamed or unconfirmed. An additional eight facilities are mapped within the 0.5-mile study corridor buffer and are shown in **Figure 2.4**.

- Warm Springs Canal located east of Logan to Manhattan (RP 285.8-291.5)
- Baker Ditch located outside of Manhattan (RP 291-292.5)
- Lower Creamery Ditch located between Manhattan and Belgrade (RP 292.3)
- Upper Creamery Ditch located between Manhattan and Belgrade (292.5-293.3)
- Allsop Ditch located on the east side of Belgrade (RP 294)
- DN Hoffman Canal located in Belgrade (RP 295)
- Mammoth Ditch located in Belgrade (RP 298.3)

- Spain Ferris Fork Ditch on the western border of Belgrade (RP 299.5)
- Story Ditch in Bozeman (RP 308.5)

2.5 Groundwater

Groundwater is water that occurs beneath the Earth's surface within soil pore spaces and fractures in rock formations. In Montana, groundwater is a critical resource that supplies drinking water for individual residences and public water systems and supports agricultural uses, including irrigation and livestock operations. These uses make groundwater an essential resource for growth, agriculture, and environmental health.

Groundwater is a vital resource within the Gallatin Valley and surrounding areas. Shallow groundwater occurs in unconsolidated Quaternary alluvial and basin-fill deposits along the Gallatin, Madison, and Jefferson river corridors, as well as in floodplains and low-lying valley areas. These shallow aquifers are important local sources of water and are commonly hydraulically connected to surface waters. The shallow nature of groundwater can be limited in extent and more vulnerable to contamination from surface activities. Intermediate and deeper valley-fill aquifers composed of sand and gravel are the most widely utilized groundwater sources in the Gallatin Valley and form the primary groundwater flow systems beneath the valley floor. Older Tertiary sedimentary units and underlying bedrock may also yield groundwater where sufficient fracture permeability exists. Groundwater from these aquifer systems supplies domestic, municipal, agricultural, and commercial wells throughout the corridor.

As of April 2026, records maintained by the Groundwater Information Center (GWIC) at the MBMG indicate that approximately 20,581 wells are on record in Gallatin County. Well depths are broadly distributed, with about 59 percent less than 100 feet deep, 24 percent between 100 and 200 feet, and nine percent between 200 and 300 feet; with the remaining nine percent exceeding 300 feet in depth. The deepest recorded well is approximately 1,783 feet. Domestic supply is the primary use, accounting for over 75 percent of the county's wells, followed by irrigation (11 percent), stockwater (seven percent), and monitoring (six percent). There are 604 public water supplies located in Gallatin County.

In Broadwater County, approximately 4,185 wells are on record. Depths are similar but slightly more variable, with about 36 percent less than 100 feet deep, 31 percent between 100 and 200 feet, 18 percent between 200 and 300 feet; and 14 percent exceeding 300 feet in depth. The deepest recorded well is approximately 2,030 feet. Domestic use is also most common, accounting for approximately 77 percent of wells, followed by stockwater (13 percent), monitoring (five percent), and irrigation (five percent), with other uses comprising a minor portion of the total. In Broadwater County, there are 48 sources of public water supplies.

Mapping the GWIC data reveals that the 0.5-mile study corridor has a high density of groundwater infrastructure, particularly concentrated around Bozeman and Belgrade. Based on interactive mapping data shown in **Figure 2.4**, 597 wells are directly located within 300-foot environmental scan buffer, and 2,752 wells are located within the 0.5-mile study corridor buffer. Of those, 85 mapped public water supply wells occur within the 0.5-mile study corridor buffer, with 20 of those lying within the 300-foot environmental scan buffer. These wells primarily serve local businesses, subdivisions, or rural communities. Public water supply wells have a setback requirement of 100 feet 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.

Four injection wells are distributed throughout the 0.5-mile study corridor buffer, clustered between Belgrade and eastern Bozeman. None of the injection wells are located directly in the 300-foot environmental scan buffer. These wells are typically shallow Class V systems used for stormwater infiltration or subsurface disposal that introduce fluids directly into the subsurface. Their presence near impaired stream segments and within urbanizing areas suggests potential pathways for surface-derived contaminants to enter shallow groundwater systems. This risk may be more

pronounced in localized zones of elevated groundwater, which are most likely to occur near rivers, tributaries, irrigation infrastructure, and low-lying floodplain areas, or where perched groundwater forms above discontinuous fine-grained layers.

Within Gallatin County, water and sewer services are provided by both municipal utility systems and independent water and sewer districts. The Town of Three Forks, Town of Manhattan, City of Belgrade, and City of Bozeman each operate municipal water and wastewater systems that serve residents and businesses within their respective jurisdictional limits. In addition, smaller rural water and sewer districts and homeowner-based systems serve select developments and unincorporated areas adjacent to the corridor. These municipal systems and districts are units of local government in Montana with authority to provide potable water supply and wastewater collection and treatment, with service types varying by provider and location. **Figure 2.4** shows the water and sewer districts located in Gallatin County with three water sewer districts, and one sewer district intersecting the 0.5-mile study corridor buffer, as listed below.

- 4 Dot Meadows Sewer District no. 374 is in Belgrade (RP 293-294)
- River Rock Water and Sewer District no. 377 is located in Belgrade (RP 297)
- Riverside Water and Sewer District no. 310 is in Bozeman (RP 304-305)
- Mount Ellis Meadows Water and Sewer District is in Bozeman (RP 310-311)

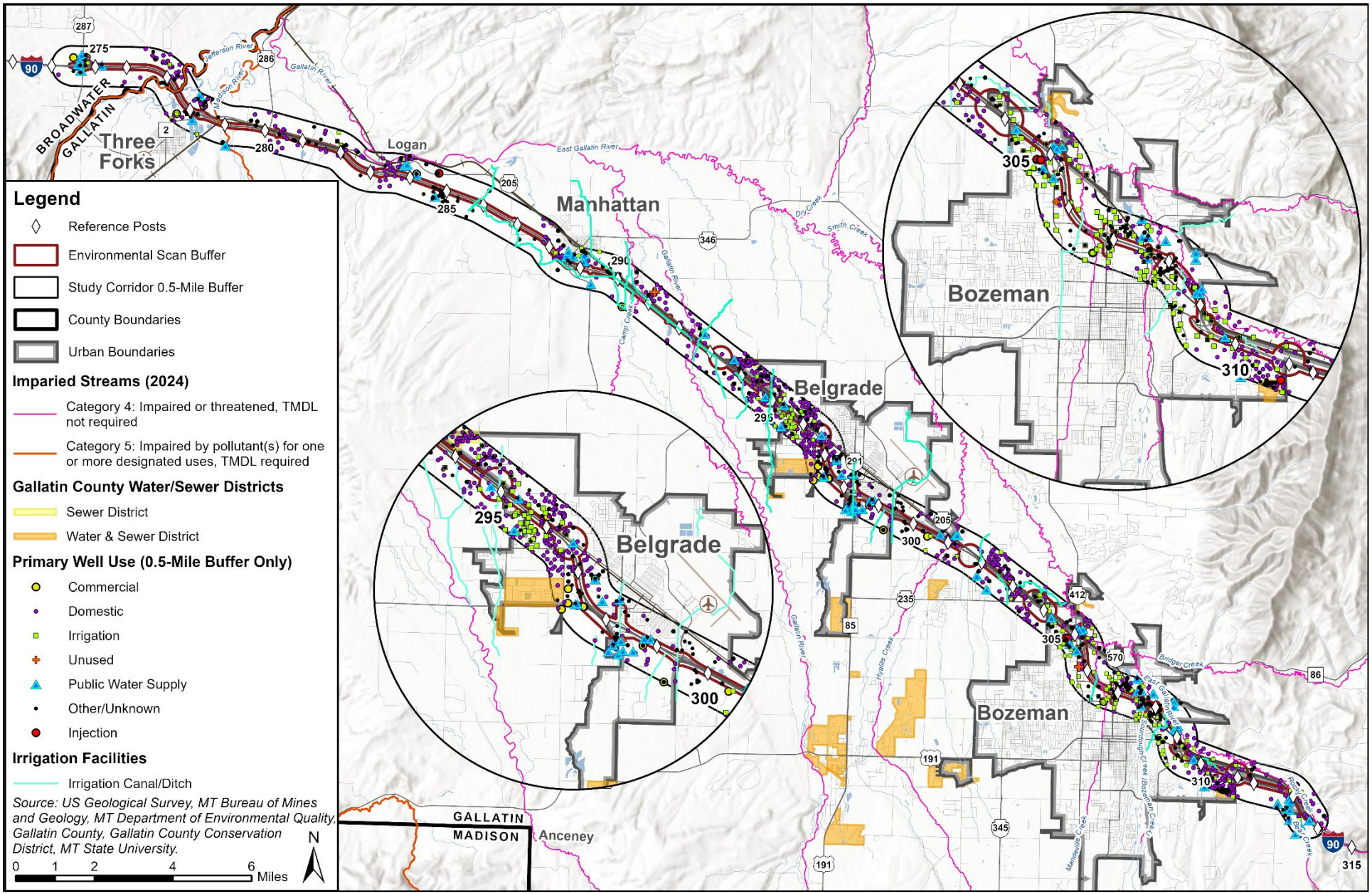

Figure 2.4: Water Resources

2.6 Floodplains and Floodways

The I-90 study corridor traverses areas influenced by major river systems and seasonal high-flow conditions. In the western portion of the corridor, Three Forks is located at the confluence of the Jefferson, Madison, and Gallatin rivers at the Missouri River headwaters. This hydrologic setting has historically made the area susceptible to elevated river stages during spring snowmelt and high-precipitation events, with portions of the community and areas near I-90 subject to periodic overbank flooding. Low-lying areas within Missouri Headwaters State Park, adjacent to the corridor, also experience seasonal inundation consistent with the natural floodplain dynamics of the river confluence.

In the eastern portion of the corridor, the communities of Manhattan, Belgrade, and Bozeman are situated along the Gallatin River and its tributaries, where flooding has historically occurred during periods of rapid snowmelt or intense rainfall. While large-scale flood events are infrequent, localized flooding and high streamflows have been documented within these communities, reflecting ongoing flood risk. These conditions highlight the importance of considering floodplain constraints and coordination with local floodplain administrators during future project development activities along the I-90 corridor.

Executive Order (EO) 11988, *Floodplain Management*,[13] 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. The EO defines floodplains as the flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. The floodplain includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe includes the area covered by the flood.

Compliance with this directive requires an evaluation of a proposed project 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 represents a flood event that has a one percent chance of being equaled or exceeded in any given year.

Floodplains and floodways within the study area are shown in **Figure 2.5**. Federal Emergency Management Agency (FEMA) flood hazard mapping indicates that the I-90 corridor intersects mapped floodplain areas at multiple locations, including those associated with the Missouri River Headwaters east of the Broadwater and Gallatin County line, the Gallatin River between Manhattan and Belgrade, and the East Gallatin River within the Bozeman area.

Near Three Forks, Zone AE (regulatory floodway, RP 277 to 279.5) and A (one percent annual chance flood hazard, RP 277 to 281.25) occur adjacent to and intermittently cross the I-90 alignment, reflecting regulatory floodway constraints and elevated flood risk. East of Manhattan, Zone AE of the Gallatin River floodplain intersects the corridor between RP 290.5 and 292.5. Belgrade remains free of flood hazards, while Bozeman has light infiltration of Zone AE between RP 305.0 and 313.0, and a crossing of Zone X (0.2 percent annual flood hazard) at RP 308.0. The remainder of the corridor lies within Zone X (area of minimal flood risk). Zone D (undetermined flood risk) occurs predominantly outside the extents of the study corridor, with a small intersection near the 0.5-mile buffer in Three Forks (RP 279). Overall, flood hazards along I-90 are limited and most of the roadway is located outside the one-percent annual chance floodplain.

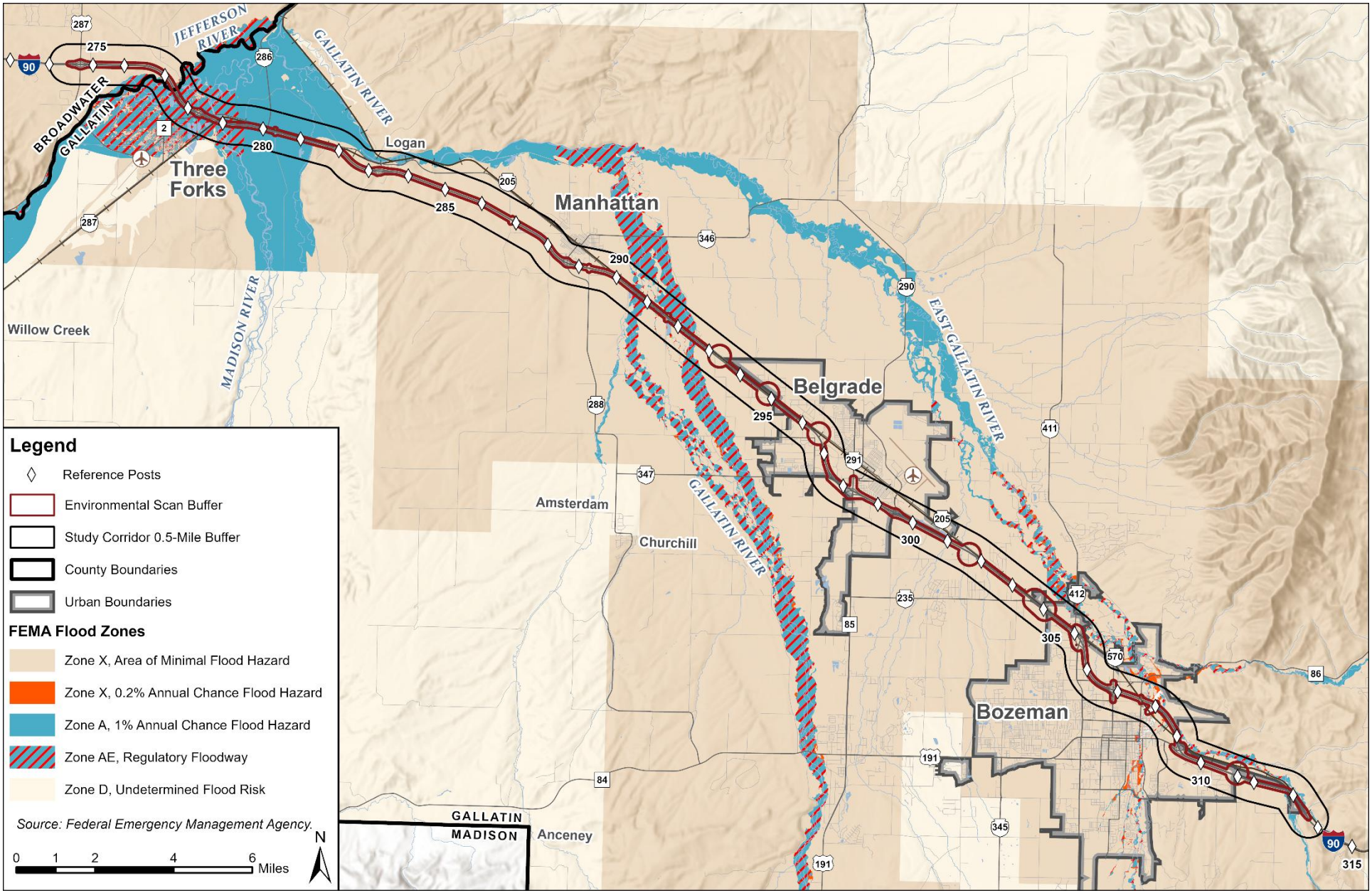

Figure 2.5: Floodplain Boundaries

Gallatin County Floodplain Hazard Management Regulations (Ordinance 2023-004)[14] and *Broadwater County Floodplain Hazard Management Regulations*[15] regulate development activities within flood hazard areas as mapped by DNRC and FEMA through Flood Insurance Rate Maps. These regulations are administered in accordance with the *Montana Floodplain and Floodway Management Act*[16] (and the National Flood Insurance Program. Coordination with the Gallatin County and Broadwater County floodplain administrator(s) would be required if any improvement options advanced from this study cross or encroach upon a regulated hazard area, including the 100-year floodplain. Any future MDT projects would also be required to comply with applicable MDT design standards and state and federal floodplain permitting requirements.

2.7 Wetlands

Wetlands are lands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The repeated or prolonged presence of water at or near the soil surface is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands can typically be identified by the existence of three environmental parameters: a dominance of hydrophytic vegetation, hydric soils, and prolonged periods of inundation or saturation resulting in sufficient hydrology to support wetland development. Examples of wetlands include marshes, bogs, the shallow portions and shorelines of lakes, ponds, reservoirs, seasonal wet meadows, and the floodplains and shorelines of streams.

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 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.*[17] 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) to be present to qualify as a wetland.

NWI mapping for the study area is presented in **Figure 2.6**. The figure shows the wetlands found along the I-90 corridor, including riverine, freshwater forested/shrub wetlands, freshwater emergent wetlands, as well as emergent riparian and forested/shrub riparian areas along the various streams and drainages in the area. Field-based wetland delineations would be required if improvement options are forwarded from the corridor study that could potentially affect wetlands. Preliminary wetland areas are identified in the map around Three Forks (RP 277-280), east of Manhattan (RP 290-293), and intermittently through the Bozeman area (RP 305-314). Future projects in the study area would need to incorporate project design features to avoid and minimize adverse impacts on surface waters and wetlands to the maximum extent practicable.

Unavoidable impacts to wetlands, streams, and irrigation features may require compensatory mitigation in accordance with applicable United States Army Corps of Engineers (USACE) requirements. Various state and federal water quality permits may be required to implement construction projects on I-90 including a MPDES General Permit for Storm Water Discharges Associated with Construction Activity; CWA Section 404 permit; Section 401 Water Quality Certification and 318 Authorization; and/or Stream Protection Act (SPA 124) permit.

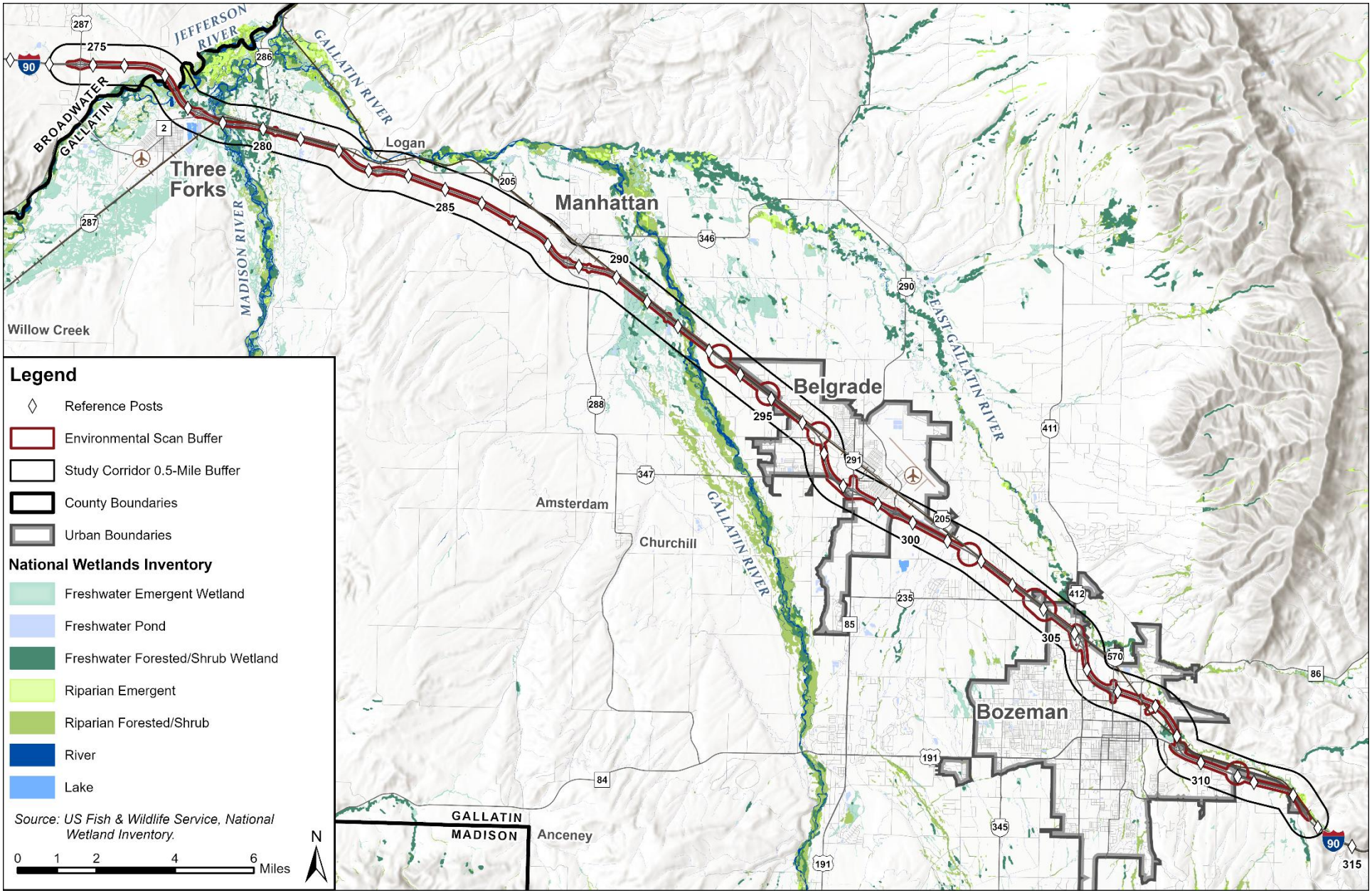

Figure 2.6: Wetlands

2.8 Hazardous Substances

MDEQ works to clean up contaminated sites throughout the State of Montana. MDEQ also regulates underground storage tanks on properties owned by private businesses and public entities, ensuring that the tanks are installed, managed, and monitored in a manner that prevents releases into the environment. Information about the existence of hazardous sites in the study area was obtained from the Montana Natural Resource Information System database and from MDEQ's online interactive website and databases. **Figure 2.7** depicts sites identified in the study area.

National Priority List (Superfund) Sites

The National Priority List (NPL) is the list of hazardous waste sites throughout the US 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. There is one NPL superfund site in the study area, located in Bozeman near RP 308 along the northern and southern sides of I-90. The Idaho Pole Company (MTD006232276) was placed on the NPL list in June 1986 due to contamination from historic wood-treating operations. From 1945 to 1997, the facility used creosote and pentachlorophenol (PCP), releasing hazardous substances such as PCP and polycyclic aromatic hydrocarbons (PAHs) that contaminated soil, ditch sediments, and groundwater.

State Superfund Units & Site Designation

The State Superfund Unit (SSU) administers cleanup under the *Comprehensive Environmental Cleanup and Responsibility Act* (CECRA) to investigate and remediate hazardous substance releases at sites not addressed by the federal superfund program, while also designating broader State Superfund Facilities Areas (SSFAs) to group multiple related CERCA sites or areas of contamination for coordinated investigation and management. Historical waste disposal activities at SSFAs and CERCA sites have caused contamination of air, surface water, groundwater, sediments, and/or soils with hazardous or deleterious substances. One SSFA is found within the study area.

- The **Bozeman Solvent Site** facility boundary (Facility Code: 31305), crosses the study corridor and is classified by MDEQ as a SSFA which encompasses a broad north-south zone west of downtown Bozeman (RP 305-307), generally between North 27th Avenue to the west and North 7th Avenue to the east, extending from north of the I-90 corridor south toward Main Street. The mapped Bozeman Solvent Site facility boundary is approximated based on the DNRC Controlled Groundwater Area boundary and is not based on actual survey boundaries. Coordination with MDEQ's SSU would be needed to confirm exact areas during future project development for any improvements advanced from this study.

Under CECRA, sites are ranked based on potential risks to human health and the environment. The following five CECRA sites below are all located within the 0.5-mile study corridor buffer, with the first three occurring within the 300-foot environmental scan buffer.

- The **Pine Tree Timber** site (Facility Code: 31466) is located in Belgrade near RP 298. The site is an inactive, approximately four-acre post and pole/wood treating facility located at 550 West Madison Avenue, which historically operated using wood treatment processes. The site is a high-priority CECRA facility and is currently undergoing investigation and/or remediation.
- The **Lattice Materials** site (Facility Code: 31647) is located in Bozeman near RP 307.5. The site is an inactive former Montana Power Company substation and operations/storage yard less than one acre in size that operated from 1958 to 1978 and is now occupied by an unrelated business. The site is a medium-priority CECRA facility and is likely in an assessment or investigation phase, with no confirmed active remediation.

- The **Development Technology** site (Facility Code: 31418) is located in Bozeman near RP 307.6 at 1410 North Rouse Avenue. The site is an inactive, approximately 1/4-acre former electroplating facility that ceased operations in 1976. The site is a medium-priority CECRA facility and is likely in an assessment or investigation phase, with no confirmed active remediation.
- The **Mercer Post Plant** site (Facility Code: 31711) is located in Bozeman near RP 307.6, outside of the 300-foot environmental scan buffer. The site is an inactive, approximately one-acre, former wood treating facility at 2001 North Rouse that operated from at least 1971 to 1974 and used PCP in a small-scale operation. The site is a low-priority CECRA facility and is likely in a monitoring or limited action phase, with no active remediation.
- The **Montana Rail Link Asbestos** site (Facility Code: 31597) is located near RP 308.3, outside of the 300-foot environmental scan buffer. The site is an inactive, approximately one-acre, former asbestos ore loading area in the 500 block of Front Street in Bozeman that operated from the 1930s to 1950s. The site has completed cleanup actions and has been delisted from the CECRA priority list; it is not undergoing active remediation.

Hazardous Waste Generators

Along the 0.5-mile study corridor buffer, 54 active hazardous waste generators are present, with nine occurring within the 300-foot environmental scan buffer, as listed below.

- The **Gallatin County Logan Landfill** is located on Logan Landfill Road in Manhattan (approximately RP 283.2). It is classified as a very small quantity generator and operates as a solid waste landfill.
- The **Lube Alley** is located at 651 West Oak Street in Bozeman (RP 295). It is classified as a small quantity generator and operates in automotive repair and maintenance.
- The **Albertsons #0009** is located at 6999 Jackrabbit Lane in Bozeman (approximately RP 307). It is classified as a very small quantity generator and operates as a supermarket.
- The **D P Doors & Millwork Inc** is located at 16981 Frontage Road Building #3 in Belgrade (approximately RP 295). It is classified as a very small quantity generator and operates as a building materials supplier.
- The **UPS Gallatin Valley** is located at 4625 Royal Wolf Way in Bozeman (approximately RP 303.5). It is classified as a very small quantity generator and operates as a courier and logistics facility.
- The **Farr Automotive Specialists Inc** is located at 707 North 5th Avenue in Bozeman (approximately RP 306.9). It is classified as a very small quantity generator and operates in automotive repair services.
- The **Walmart Supercenter #2084** is located at 1500 North 7th Avenue in Bozeman (approximately RP 306.9). It is classified as a very small quantity generator and operates as a retail supercenter.
- The **Simms Fishing Products** is located at 101 Evergreen Drive in Bozeman (approximately RP 307.2). It is classified as a very small quantity generator and operates as a manufacturing facility.
- The **Empire Building Materials** is located at 801 L Street in Bozeman (approximately RP 306.8). It is classified as a very small quantity generator and operates as a building materials supplier.

Opencut Mine Sites

MDEQ opencut permits are required for the mining and processing of materials (e.g., sand, gravel, soil, bentonite, clay, scoria, and peat) in areas of state jurisdiction as specified in the *Opencut Mining Act*. There are eight open cut mining sites that occur in the 0.5-mile study corridor buffer and one site that occurs within the 300-foot environmental scan buffer.

- The **Pierce Construction Company Inc.** opencut mining site is located at approximately RP 278.7 near Three Forks. It operates as a contractor-owned gravel pit with portable crushing equipment, extracting sand and gravel for construction use.
- The **A.M. Welles Inc.** opencut mining site is located at approximately RP 281 between Three Forks and Manhattan. It is a small gravel pit producing sand and gravel for local construction.
- The **River Gravel LLC** opencut mining site is located near RP 296.5 west of Belgrade. It operates as a river-run aggregate pit producing sand and washed gravel for construction materials.
- The **Montana Ready Mix** opencut mining site is located at approximately RP 297.3 near Belgrade. It supplies sand and gravel for ready-mix concrete production.
- The **Knife River** opencut mining operations are located near RP 300 in Belgrade, with one site south of I-90 on Alaska Road and another north of I-90. These sites produce sand, gravel, and crushed aggregate for regional construction.
- The **TMC Inc.** opencut mining site is located at approximately RP 300.4 north of I-90 near Belgrade. It is a large gravel pit extracting sand and gravel for construction use.
- The **Ronald Milledge** opencut mining site is located at approximately RP 302.2 south of I-90 near Belgrade. It is a small, privately operated gravel pit with intermittent production.

Underground Storage Tanks

Underground storage tanks (USTs) are regulated by MDEQ and consist of subsurface tanks and associated piping used to store petroleum or hazardous substances. A total of 99 active underground storage tanks occur within the 0.5-mile study corridor buffer, all of which are currently in use. Of those, 42 tanks lie within the 300-foot environmental scan buffer and are mapped in **Figure 2.7**. Identifying UST locations is important for transportation-related projects because releases from these systems can impact soil and groundwater quality, potentially requiring investigation, remediation, or special handling during construction.

Petroleum Tank Releases

Within the 0.5-mile study corridor buffer, 74 petroleum tank releases are present, with 18 of those lying within the 300-foot environmental scan buffer. As of today, all but one of the tanks are rescinded/resolved release sites. The one open petroleum release site is a former **Flying J Inc** tank (Facility 21368) located in Belgrade near RP 298.3 within the 300-foot environmental scan buffer area.

Solid Waste Facilities

- Several solid waste facilities are located along the corridor including septic tank pumper locations, major and minor class II facilities, a small composter operation, and a recycling center. Below is a list of the facilities located in the 0.5-mile study corridor buffer. All facilities listed operate in compliance with DEQ regulations. **McDonnell Property Site 1** (Facility Code: 203409) located west of Buffalo Jump Road near RP 283, is a septic tank pumping operation handling and transporting septage waste.

- **Gallatin County Landfill** (Facility Code: 147120) located in Logan on Two Dog Road at RP 284.7 is a Major Class II Landfill facility. This facility is permitted to accept non-hazardous municipal solid waste and construction and demolition debris and may also manage approved recyclable materials and other special wastes in accordance with MDEQ solid waste regulations; regulated hazardous waste is not accepted at either facility.
- **TLC Property – Lot C-2 Sub No 369** (Facility Code: 148245) identified as a septic tank pumper operation handling and transporting septage waste near RP 294.5.
- **Thornton Landfill** (Facility Code: 146723) a Minor Class II Landfill, is located on Thorpe Road within the City of Belgrade, near RP 296. It is permitted under MDEQ regulations to accept inert, low-risk solid wastes such as soil, gravel, concrete, asphalt, brick, and clean wood debris, and does not accept municipal solid waste or hazardous materials.
- **Yes Compost LLC** (Facility Code: 263990) located within the City of Belgrade on Big Hole Street near RP 297.3, is a small composting operation that manages organic waste through composting.
- **Pacific Steel & Recycling** (Facility Code: 160950) is an active materials recovery and recycling facility located off I-90 on Griffin Drive near RP 307.4 as a solid waste recycling facility that processes and recovers recyclable materials. The facility is permitted to receive, sort, process, and transfer ferrous and non-ferrous scrap metals, including steel, aluminum, copper, and other recyclable metals, for off-site recycling and reuse; disposal of solid waste does not occur at this site.

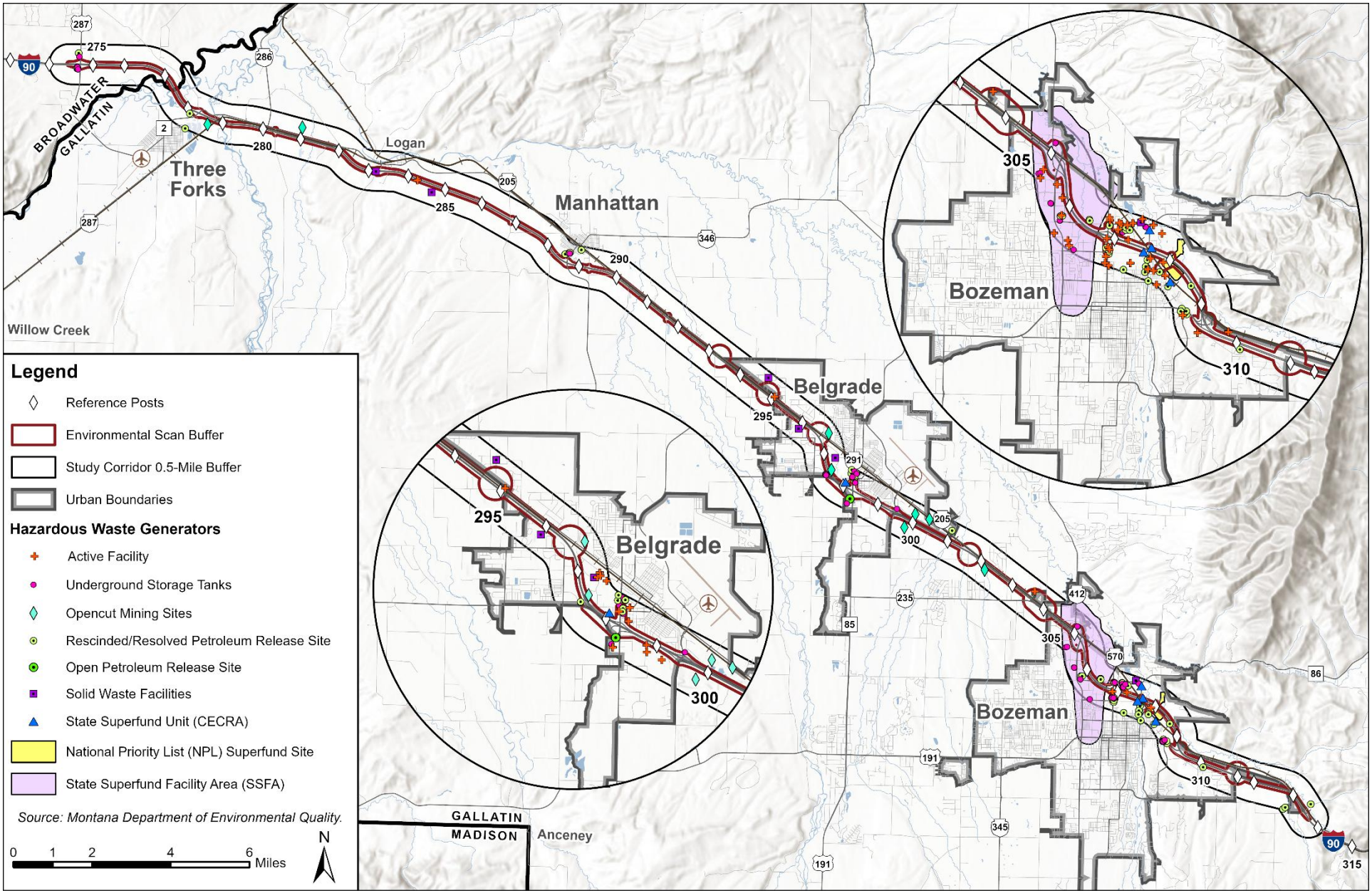

Figure 2.7: Hazardous Substances

2.9 Air Quality

The *Clean Air Act*[18] (CAA) of 1970, as amended, is the basis for air pollution control programs. In accordance with the act, the USEPA established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: ozone, carbon monoxide, particulate matter (PM-2.5 and PM-10), lead, sulfur dioxide, or nitrogen dioxide. The NAAQS are health-based standards to protect human health and public welfare and set allowable concentrations and exposure limits for each criteria pollutant.

Montana has also established air quality standards for criteria pollutants, as well as for settleable particulates and visibility. The Montana Ambient Air Quality Standards[19] (MAAQS) 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 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.

According to the most recent air quality data available through USEPA and MDEQ's website, no portions of the I-90 corridor between West Three Forks and Bozeman are designated as nonattainment. Broadwater, Gallatin, and adjacent counties in this corridor remain in attainment for all criteria pollutants, and no transportation conformity requirements apply at this time.[20] Projects within this area should still monitor air quality conditions, including short-term impacts, and verify attainment status at the time of project development. If the area's air quality changes, conformity requirements could be implemented in the future. Any project advanced from this study would need to examine the current status and determine if the project is subject to air quality conformity requirements.

2.10 Noise

Roadway projects have the potential to increase noise levels for nearby receivers during both construction activities and long-term operation of the transportation facility. Noise impacts may occur when a roadway is constructed on a new alignment or when modifications to an existing roadway substantially alter horizontal or vertical alignment or increase the number of through-traffic lanes.

Residences in the study area are sensitive noise receptors that could be affected by roadway improvements on I-90. Sites protected under Section 4(f) of the *US Department of Transportation Act*[21] and Section 6(f) of the *Land and Water Conservation Fund Act*[22] (LWCF), (see **Sections 4.3** and **4.4**) within the study area may also be considered sensitive noise receptors. Detailed noise analyses are typically conducted when the potential for noise impacts exists due to substantial changes in roadway design or configuration.

Construction activities associated with improvements to I-90 may result in short-term, localized noise impacts in the vicinity of residences and other sensitive receptors. Temporary impacts can be minimized through implementation of construction noise control measures, such as limiting work hours, maintaining equipment, and applying best management practices during construction.

3.0 BIOLOGICAL ENVIRONMENT

3.1 Vegetation

The I-90 corridor study area supports a diverse mosaic of vegetation types, including grasslands, shrublands, wetlands, riparian systems, agricultural lands, and smaller areas of forested communities. Grassland systems are the most extensive natural vegetation type and are primarily represented by montane grasslands dominated by cool-season perennial bunchgrasses and forbs such as rough fescue, Idaho fescue, bluebunch wheatgrass, and western wheatgrass, with minimal shrub cover.

Shrubland communities occur in more limited areas and are dominated by sagebrush steppe vegetation. Big sagebrush steppe is characterized by Wyoming big sagebrush with an understory of western wheatgrass, Japanese brome, and cheatgrass. Montane sagebrush steppe occurs from valley bottoms to subalpine ridges and is dominated by mountain big sagebrush, with co-dominant shrubs including silver sagebrush, subalpine big sagebrush, and antelope bitterbrush.

Wetland and riparian vegetation occur along streams, floodplains, and low-lying areas. Alpine–montane wet meadows are dominated by herbaceous species such as tufted hairgrass, sedges, Drummond's rush, and arrow-leaf groundsel. Riparian woodlands and shrublands are tree-dominated and include boxelder, narrowleaf cottonwood, Douglas-fir, and peachleaf willow, with an understory of Rocky Mountain maple, thinleaf alder, river birch, and redosier dogwood.

Agricultural lands also comprise a substantial portion of the study area and include cultivated croplands as well as pasture and hay fields. Additional vegetation types, including coniferous forests, aspen woodlands, mesic meadows, and deciduous shrublands, occur in small, scattered patches and represent a minor component of overall land cover.

Table 3.1 presents the land cover composition within a 1.0-mile buffer of the study corridor as determined by the Montana National Heritage Program's (MTNHP) *Environmental Summary Report* (ESR) prepared for the study area. Note that other sub-systems exist but each cover one percent or less of the buffer area and are not included in the table. Refer to **Appendix A** for more information.

Table 3.1: Land Cover

System/Sub-System	Percentage of Land Cover in 1.0-Mile Buffer
Shrubland, Steppe and Savanna Systems	**7%**
Big Sagebrush Steppe	5%
Montane Sagebrush Steppe	2%
Grassland Systems	**24%**
Rocky Mountain Lower Montane, Foothill, and Valley Grassland	24%
Wetland and Riparian Systems	**12%**
Alpine-Montane Wet Meadow	7%
Rocky Mountain Lower Montane Riparian Woodland and Shrubland	5%
Human Land Use	**47%**
Developed, Open Space	5%
Other Roads	7%

System/Sub-System	Percentage of Land Cover in 1.0-Mile Buffer
Low Intensity Residential	5%
Pasture/Hay	4%
Cultivated Crops	20%
Major Roads- Interstate	2%
Commercial / Industrial	4%
Other	**10%**

Source: MTNHP. 2026. Environmental Summary Report. https://mtnhp.mt.gov/.

Invasive and Noxious Weeds & Aquatic Species

Invasive and noxious weeds are a recognized and ongoing concern in Gallatin and Broadwater counties. Consistent with statewide practices, both counties have established county weed boards and weed districts that implement integrated weed management strategies involving prevention, education, mapping, as well as cultural, mechanical, biological, and chemical controls to manage noxious weeds on public and private lands.

The State of Montana has officially listed 36 noxious weed species, along with additional regulated invasive plants, for statewide management under the *Montana County Weed Control Act*.[23] State law makes it unlawful to propagate these species or allow them to go to seed, as they pose a significant threat to agriculture as well as the ecological and economic resources of Montana.[24]

Invasive and noxious species are present within the study area across both terrestrial and aquatic environments. Survey data from the MTNHP ESR indicates the occurrence of multiple regulated noxious weeds and aquatic invasive species, which are designated due to their ecological impacts, potential for rapid spread, and management concern. The presence of these species indicates a moderate to high risk of invasive species impacts within the study area, particularly in riparian corridors, wetlands, transportation corridors, agricultural lands, and other disturbed areas that are especially vulnerable to infestation.

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. Ten Priority 1A and 1B noxious weeds are present in the study 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, with the potential to generate significant negative impacts. In addition, Gallatin[25] and Broadwater[26] counties have listed Priority 4 species which are problematic in the area or have great potential to cause problems.

Table 3.2 summarizes the list of noxious weeds known to be present within a 1.0-mile buffer of the study corridor, as provided in the MTNHP ESR (**Appendix A**). Continued monitoring, early detection, and implementation of best management practices are recommended to limit further spread and minimize impacts to native plant communities and aquatic habitats.

Table 3.2: Noxious Weeds & Aquatic Invasive Species

Priority Level	Noxious Weeds in 1.0-Mile Buffer
1A: Very Little/No Presence	Yellow Starthistle, Medusahead Rye, Dyer's Woad, European Common Reed
1B: Limited Presence	Purple Loosestrife, Japanese Knotweed, Bohemian Knotweed, Rush Skeletonweed, Scotch Broom, Blueweed
2A: Common in Isolated Areas	Perennial Pepperweed, Ventenata Grass, Orange Hawkweed, Tall Hawkweed, Kingdevil Hawkweed, Tansy Ragwort, Common Buckthorn, Tall Buttercup
2B: Abundant and Widespread	Hoary False-Alyssum, Whitetop (Hoary Cress), Common Hound's-Tongue, Common Tansy, Yellow Toadflax, Diffuse Knapweed, Salt Cedar, Dalmatian Toadflax, Field Bindweed, Oxeye Daisy, Spotted Knapweed, Leafy Spurge, Canada Thistle, Sulphur Cinquefoil, Russian Knapweed, Common St. John's-Wort
3: Regulated Plants: Not Montana Listed Noxious Weeds	Russian Olive, Cheatgrass
4: County-Specific Noxious Weeds *(Unknown Presence in Study Area)*	**Gallatin County:** Scotch Thistle, Musk Thistle, Poison Hemlock, Field Scabious **Broadwater County (Control):** Musk Thistle, Baby's Breath, Scotch Thistle, Black Henbane, Burdock, Perennial Sowthistle

Source: MTNHP. 2026. Environmental Summary Report. https://mtnhp.mt.gov/. Additionally, seven species of aquatic invasive species are known to be present in lakes, ponds, and streams within the study area including: yellowflag iris, curly-leaf pondweed, Eurasian watermilfoil, yellow floating heart, common carp, virile crayfish, and New Zealand mudsnail.

3.2 Biological Community

The I-90 study corridor from Three Forks to Bozeman crosses a diverse landscape that includes major river systems, riparian corridors, grasslands, shrub-steppe, agricultural lands, and forested foothills. The corridor intersects the Jefferson, Madison, and Gallatin rivers and numerous perennial and intermittent tributaries that provide important aquatic and riparian habitat.

Aquatic resources within the corridor support native and introduced fish species, including westslope cutthroat trout in select tributaries and rainbow and brown trout in the larger rivers. Riparian areas associated with these waterbodies provide critical habitat for waterfowl, shorebirds, raptors, amphibians, and migratory songbirds, and function as important wildlife movement corridors.

Adjacent upland habitats support elk, mule deer, white-tailed deer, and a variety of carnivores and small mammals, with seasonal use of valley bottoms and lower slopes. While the corridor lies outside core habitat for wide-ranging carnivores, it contributes to regional habitat connectivity between surrounding mountain ranges. Overall, aquatic and riparian habitats within the I-90 corridor occur within a largely developed valley setting but may present important environmental resources for consideration during transportation planning and environmental review.

3.2.1 Mammals

Larger mammals documented within the study area include mule deer, white-tailed deer, and elk. MFWP mapping provides information on the general and winter ranges for these species, with both deer and elk distributions shown in **Figure 3.1**. General and winter ranges for elk and mule deer encompass the entire study area, while the ranges for white-tailed deer occur primarily outside the study corridor with mapped locations east of Bozeman in the Bridger Mountains, continuing towards the Crazy Mountains. In western Montana, white-tailed deer occur closer to the Bitterroot Mountains, and within the Elkhorn and Big Belt Mountains, with general and winter ranges intersecting the western start of the study area near Three Forks. Ranges for black bear and grizzly bear extend across the entire study corridor and surrounding region and, as a result, are not shown on the distribution map.

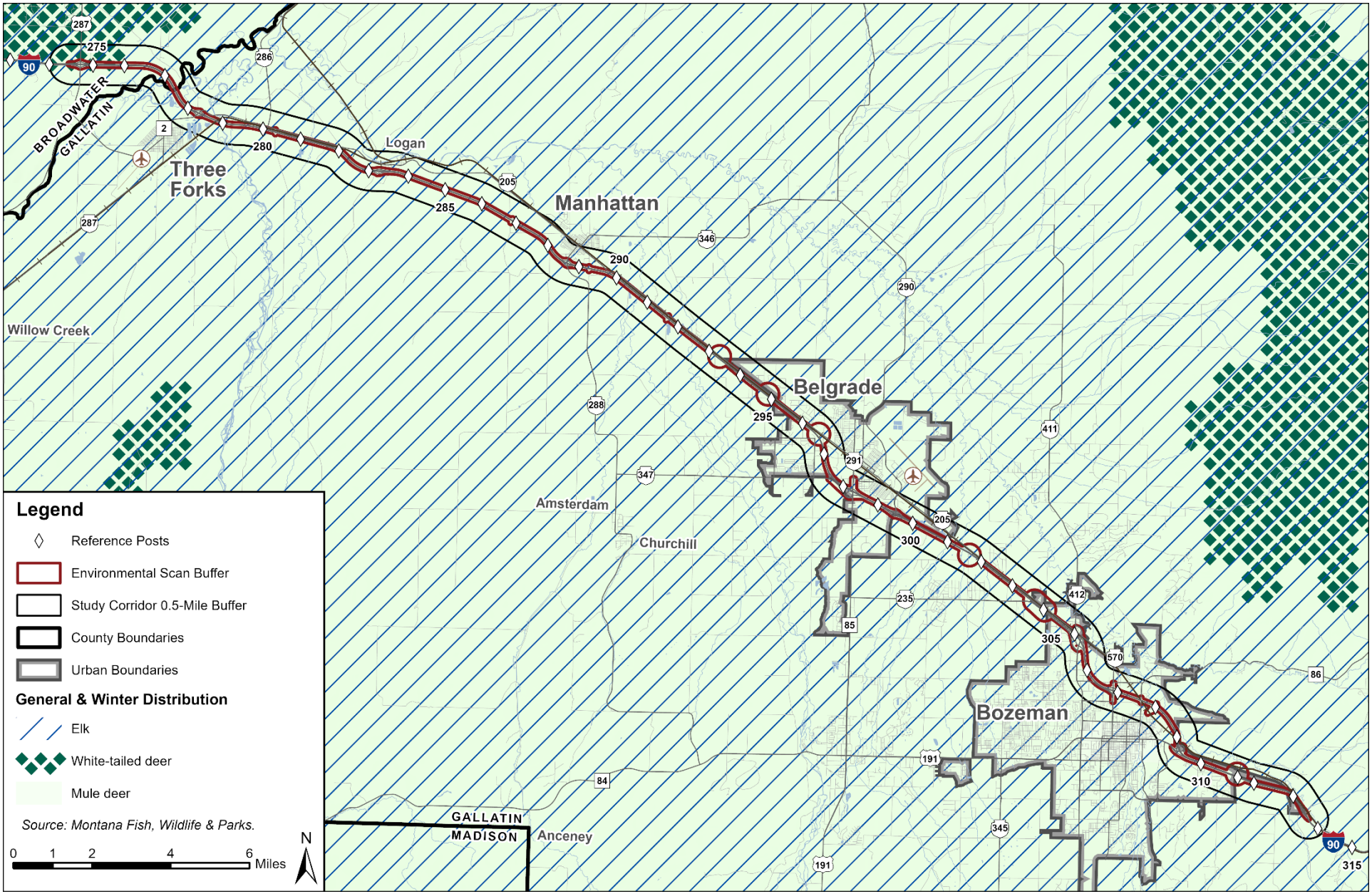

Figure 3.1: Deer and Elk Distributions

A review of the MDT Maintenance Animal Incident Database between January 1, 2020, and December 31, 2024, indicates 136 animal carcasses were collected and documented along the study corridor. The database contains information on carcasses collected by MDT maintenance personnel; however not all carcass collection is reported consistently or on a regular schedule. The information is useful for pattern identification but is not statistically valid. **Table 3.3** summarizes the large mammal carcasses collected over the five-year period. **Figure 3.2** shows the locations of large mammal carcasses and clusters of deer carcasses, respectively. Carcass locations do not necessarily correspond to a crash location.

Table 3.3: Animal Carcasses Collected

Animal	# of Carcasses Collected	Percentage
Whitetail Deer	89	65.4%
Mule Deer	34	25.0%
Black Bear	4	2.9%
Elk	5	3.7%
Moose	1	0.7%
Other Wild Animal	3	2.2%
TOTAL	**136**	**100%**

Source: MDT. January 1, 2020- December 31, 2024. Maintenance Animal Incident Database. https://www.mdt.mt.gov/publications/datastats/crashdata.aspx.

Deer accounted for the vast majority (90.4 percent) of the carcasses collected along this section of I-90, with white-tailed deer being the most common species involved, despite **Figure 3.1** indicating that both general and wintering ranges are located outside the study area. **Figure 3.2** shows the following trends associated with the locations of carcass collection.

- **White-tailed Deer:** Collected throughout study area, with carcass collection generally increasing heading east. Concentrations occur just east of Manhattan and east of Belgrade between RP 290 and RP 296, with denser concentration through Bozeman between RP 305 and RP 314.
- **Mule Deer:** Carcasses were collected throughout the entire study area but were concentrated near Logan between RP 280 to RP 286 and the eastern section of the corridor from RP 301 to RP 314.
- **Elk:** Concentrated between RP 284 to RP 286 near the community of Logan and east towards Manhattan.
- **Moose:** One moose collected at RP 275, west of Three Forks.
- **Black Bear:** Collected predominantly on the east end of the study area, with one collected between Manhattan and Belgrade at RP 291, one collected entering Bozeman near RP 303, and the other two collected between RP 310 and RP 313.
- **Other Mammals:** Collected throughout study area. When provided, “other” types include skunk (1), fox, and (1), coyote (1).

Wildlife exclusionary fencing is present along portions of the corridor, most notably near the eastern end of the study area. As part of the *Bozeman Pass Post-Fencing Wildlife Monitoring Study*,[27] wildlife fencing, jump-outs, and cattle guards were installed from RP 313.5 to RP 314.4, approximately 0.5 miles on either side of the Montana Rail Link bridge following reconstruction of the bridge in 2006. A review of Google Street View also confirmed the presence of wildlife exclusionary fencing near the Main Street Interchange, where one of the highest concentrations of deer carcasses was recorded, with imagery showing the fencing has been in place since at least 2007. While wildlife mitigation measures are present in these areas, carcass collection data indicate that wildlife-vehicle conflicts continue to occur along portions of the corridor.

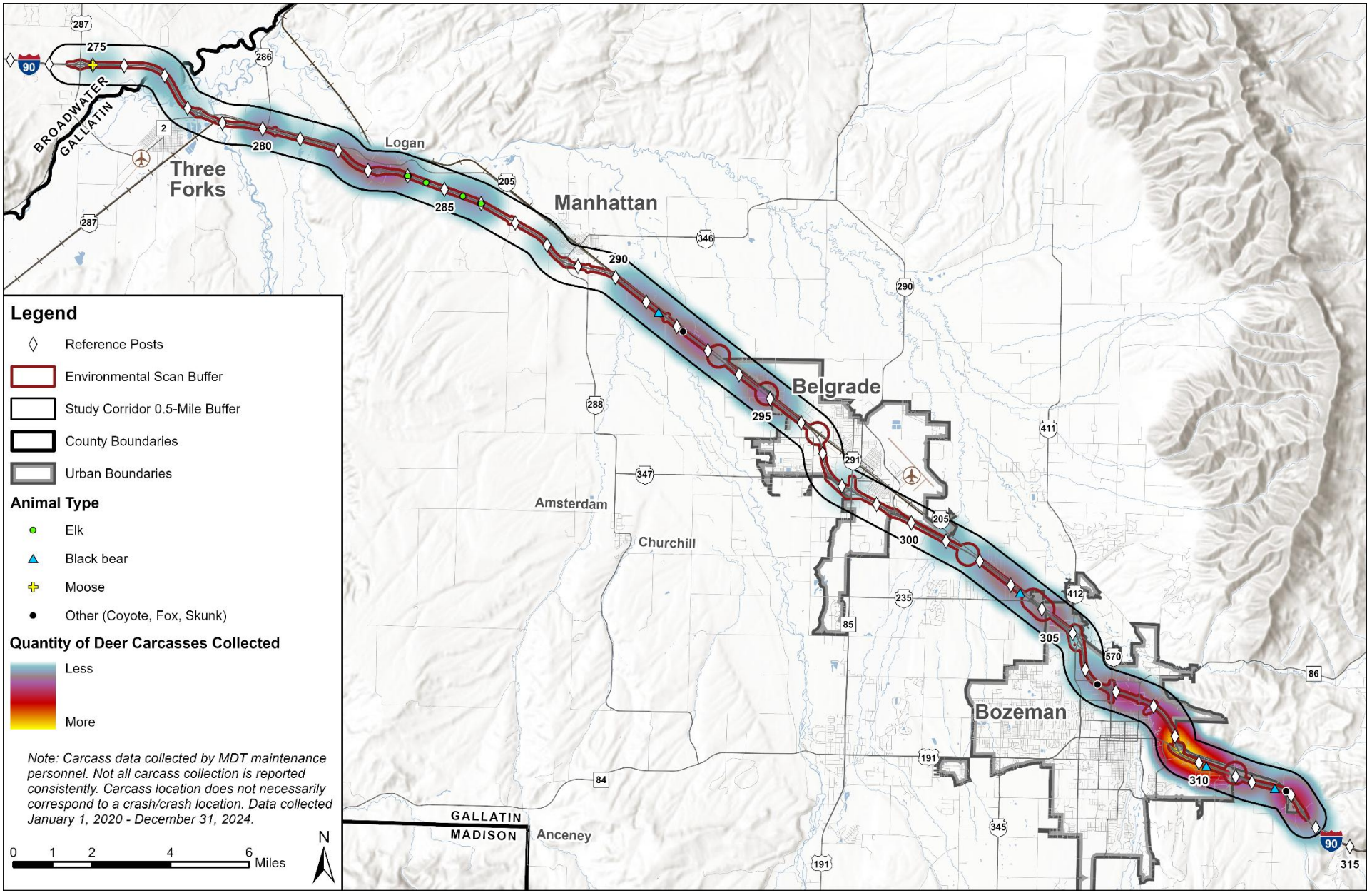

Figure 3.2: Carcasses Collected

Figure 3.3 shows the number of carcasses collected by month and by year. As shown in the graphs, animal mortality appears to be greater in January, June, September, and November with the most carcasses collected in January. Based on the relatively few carcasses collected over a five-year period, it is difficult to identify distinct trends in seasonal variation. The number of carcasses collected increased substantially from 2020 to 2021, further increasing into 2022, followed by decreases in 2023 then slight increases again in 2024. Yearly differences could be attributable to variable staffing availability, frequency of reporting/pick up, or other factors and does not necessarily indicate an increase in wildlife activity or mortality.

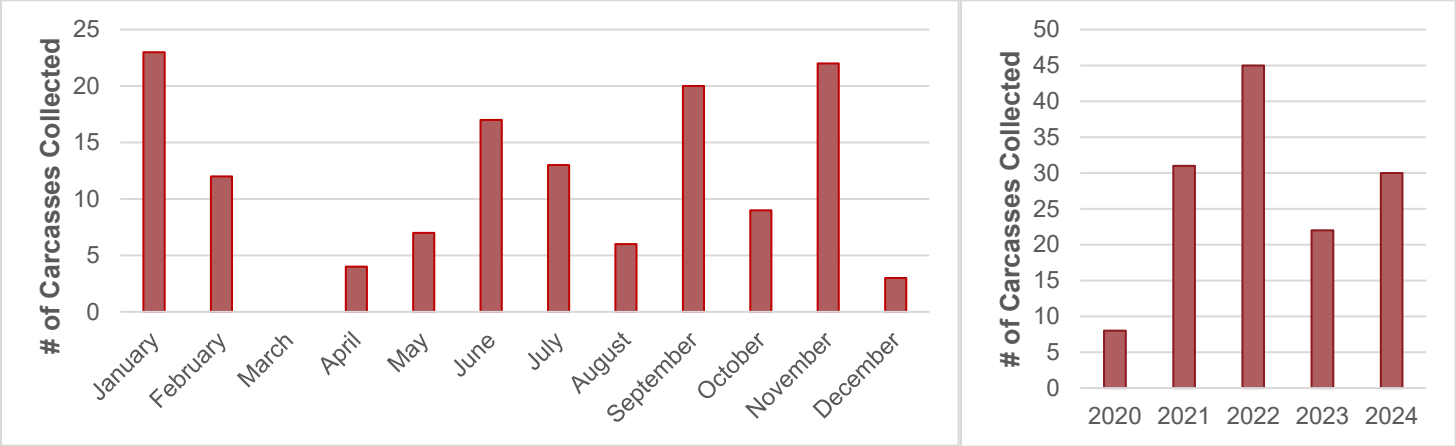

Figure 3.3: Seasonal and Yearly Distribution of Carcasses Collected

If improvement projects are advanced from the corridor study, project planners should use the most relevant and recently available data (e.g., salvage permits, MFWP databases) to investigate carcass retrieval and animal mortality in the corridor. Additionally, coordination with fish and wildlife biologists from state and federal agencies should be conducted to gain further insight into issues related to the management of these species, as well as measures for avoiding, minimizing, or mitigating adverse effects on species and habitats. The needs and feasibility of wildlife accommodations will need to be considered in projects forwarded from this study in accordance with MDT's *Wildlife Accommodation Process*.[28]

3.2.2 Birds

According to the MTNHP database, more than 609 bird species have been documented in Gallatin and Broadwater counties, with the potential for many of these birds to occur or reside in the study area. These species include a wide variety of songbirds, birds of prey, waterfowl, owls, and shorebirds, including several listed as Species of Concern (SOC). Most avian observations occur in the riparian areas, open lands, and forest lands along the study area.

Many of the bird species are protected under or included in the USFWS *Migratory Bird Treaty Act*[29] (MBTA), 2008 *Birds of Conservation Concern*[30] (BCC), or *Bald and Golden Eagle Protection Act of 1940*[31] (BGEPA) listings. Any improvements forwarded from this study should consider potential constraints that may result from nesting times of migratory birds and/or the presence of bald and golden eagle nests.

Migratory birds are protected under the MBTA, which states that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Direct disturbance of an occupied (with birds or eggs) nest is prohibited under the law. The destruction of unoccupied nests of eagles; colonial nesters such as cormorants, herons, and pelicans; and some ground/cavity nesters such as burrowing owls or bank swallows may be prohibited under the MBTA.

The BCC includes birds identified by USFWS as "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the *Endangered Species Act*[32] (ESA)." The study area is located in Bird Conservation Region 10. Fourteen species included under BCC are documented as having a sustained presence in or are known to occur in the study area: sage thrasher, loggerhead shrike, ferruginous hawk, Cassin's finch, Canada jay, Brewer's sparrow, American goldfinch, pinyon jay, black-billed cuckoo, bobolink, long-billed curlew, Lewis's woodpecker, golden eagle, and evening grosbeak.

Bald eagles and golden eagles are known to occur within the study area. A total of 108 confirmed bald eagle occurrences and 93 confirmed golden eagle occurrences have been documented within the vicinity of the study area. The bald eagle is designated as a Montana Special Status Species (SSS) and, while it is not classified as a SOC, it retains legal protections. The golden eagle is classified as a Montana SOC. Despite these differing state designations, both bald and golden eagles are protected under federal law, including the MBTA and are managed under BGEPA.

The BGEPA prohibits any person, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act establishes criminal penalties for individuals who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export, or import, at any time or in any manner, any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof." Under the BGEPA, "take" is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

3.2.3 Fisheries

Native and introduced fish species are present throughout the Jefferson, Madison, and Gallatin rivers and their associated tributaries. Native species, including mountain whitefish, sculpin, suckers, dace, and cutthroat trout, occur alongside introduced brown, brook, and rainbow trout, forming a diverse cold water fish community supported by interconnected river and stream habitats that also sustain recreational fisheries.

Fisheries data from MFWP indicate that trout populations in the Gallatin and Madison systems are generally stable, while portions of the Jefferson Basin have experienced periodic declines and are the focus of ongoing monitoring and management. Overall, fisheries within the study area are representative of southwestern Montana, where productivity is influenced by flow conditions, water temperature, and active resource management.

Table 3.4 depicts the streams and rivers crossed by the highway and fish distribution information currently available from MFWP's FishMT database.[33] Additional waterbodies crossed by the highway are intermittent streams, which do not hold water year-round and likely do not support aquatic life. Two aquatic invasive species, common carp and northern pike, are known to be present in the streams and rivers crossing I-90. However, only the common carp is known to be present in the study area, as noted previously in **Table 3.2**.

Fish passage and/or barrier removal opportunities may need to be considered at affected drainages if a project is forwarded from this study. Permit conditions from regulatory and resource agencies may also require incorporation of design measures to facilitate aquatic species passage.

Table 3.4: Fish Distribution Data for I-90 Stream and River Crossings

Name	Location (RP)	Existing Structure	Fish Species Present
Jefferson River	RP 277.4	Bridge	Arctic Grayling, Brook Trout, Brown Trout, Burbot, Common Carp, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Northern Pike, Rainbow Trout, Redside Shiner, Stonecat, White Sucker
Madison River	RP 278.8	Bridge	Arctic Grayling, Brook Trout, Brown Trout, Common Carp, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Rainbow Trout, Stonecat, Utah Chub, Westslope Cutthroat Trout, White Sucker, Yellowstone Cutthroat Trout
Darlington Ditch 1	RP 279.6	Bridge	Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Rainbow Trout, White Sucker
Rey Creek	RP 280.8	Bridge	Brown Trout, Longnose Dace, Mottled Sculpin, Rainbow Trout
Camp Creek	RP 290.8	Bridge	Brook Trout, Brown Trout, Longnose Dace, Mottled Sculpin, Rainbow Trout
Gallatin River	RP 292.4	Bridge	Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Rainbow Trout, Westslope Cutthroat Trout, White Sucker, Yellowstone Cutthroat Trout
Story Creek	RP 297.8	Culvert	Brook Trout, Brown Trout, Longnose Dace, Mottled Sculpin, Rainbow Trout
Hyalite Creek	RP 301.1	Culvert	Arctic Grayling, Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Rainbow Trout, White Sucker, Yellowstone Cutthroat Trout
Aajker Creek	RP 301.4	Culvert	Brown Trout, Mottled Sculpin
Baxter Creek	RP 302.2	Culvert	Brown Trout, Mottled Sculpin
Bozeman Creek	RP 307.8	Culvert	Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Rainbow Trout, White Sucker, Yellowstone Cutthroat Trout
East Gallatin River	RP 308.3	Bridge	Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Mountain Whitefish, Rainbow Trout, White Sucker, Yellowstone Cutthroat Trout
Bear Creek	RP 312.8	Culvert	Brook Trout, Longnose Dace, Mottled Sculpin, Rainbow Trout
Rocky Creek	RP 314.3	Culvert	Brook Trout, Brown Trout, Longnose Dace, Longnose Sucker, Mottled Sculpin, Mountain Sucker, Rainbow Trout, White Sucker, Mountain Whitefish

Source: Montana Fish, Wildlife & Parks. 2026 FishMT database. Executive Summary Report. https://myfwp.mt.gov/fishMT/distribution/speciesdistribution.

Amphibians, Reptiles, and Invertebrates

According to the MTNHP ESR (**Appendix A**), several amphibian, reptile, and invertebrate species of conservation interest are known or have the potential to occur within the project vicinity. Amphibians documented or predicted in the study area include the western toad and northern leopard frog, both of which are designated as Montana SOC. Reptile species of conservation interest documented or potentially present include the snapping turtle, greater short-horned lizard, and western milk snake.

Invertebrate species documented within the study area include several types of species designated as Montana SOC, particularly pollinators and aquatic invertebrates. These include the western bumble bee, Suckley's cuckoo bumble bee, monarch butterfly, western pearlshell mussel, snowfly species, and Berry's mountain snail. The Gartrell's flatheaded mayfly, an aquatic invertebrate designated as a Montana SSS, has also been

documented in the study area and is associated with cold, well-oxygenated streams. Occurrence records and predictive models indicate that suitable habitat for these species is present within portions of the study area, particularly in riparian corridors, wetlands, grasslands, and intact native habitats.

3.3 Threatened and Endangered Species

Section 7(a)(2) of the ESA of 1973, as amended, requires federal agencies to review actions they authorize, fund, or carry out, to ensure such actions do not jeopardize the continued existence of federally listed species, or result in the destruction or adverse modification of designated critical habitat. **Table 3.5** shows the ESA listed species that could potentially be affected by activities located both in the 1.0-mile buffer as reported in the MTNHP ESR, as well as species that directly intersect the 0.5-mile study corridor buffer. Data from the MTNHP ESR was requested for this study corridor in January of 2026. (See **Appendix A**) Additional ESA data from the USFWS Information for Planning and Consultation (IPaC) tool[34] was consulted for this section.

Table 3.5: Threatened and Endangered Species Occurrences

Species	Federal Status	Typical Habitat	Present in MTNHP ESR 1.0-Mile Buffer	Present in Study Corridor 0.5-Mile Buffer
Mammals				
Canada Lynx (*Lynx canadensis*)	**Listed as Threatened**	The Canada lynx is an elusive forest-dwelling cat of northern latitudes. The Canada lynx are closely associated with moist, cool, boreal spruce-fir forests, and landscapes with high densities of snowshoe hares. Suitable habitat includes subalpine forests at elevations ranging between 4,000 and 7,000 feet above sea level. Lynx also need persistent deep, powdery snow, which limits competition from other predators.	*	
Grizzly Bear (*Ursus arctos*)	**Listed as Threatened**	In Montana, grizzly bears primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals. The study area lies within the area occupied by the Northern Continental Divide Ecosystem grizzly bear population. The entire study area is in Zone 1 just outside of the Primary Conservation Area.	X	X
Wolverine *(Gulo gulo)*	**Listed as Threatened**	In North America, wolverines occur within a wide variety of habitats, primarily high elevation boreal forests, tundra, and western mountains throughout Alaska and Canada; however, the southern portion of the range extends into the contiguous United States, including Montana. South of the Canadian border, wolverines are restricted to areas in high mountains, near the treeline, where conditions are cold year-round and snow cover persists well into the month of May. When inactive, wolverines occupy dens in caves, rock crevices, under fallen trees, in thickets, or similar sites.	X	

Species	Federal Status	Typical Habitat	Present in MTNHP ESR 1.0-Mile Buffer	Present in Study Corridor 0.5-Mile Buffer
Bird				
Yellow-billed Cuckoo (*Coccyzus americanus*)	**Listed as Threatened**	In North America, yellow-billed cuckoos are typically associated with wooded habitats that provide dense vegetation and nearby water, including riparian corridors, scrubby woodlands, and overgrown or abandoned agricultural areas. They frequently occur in thick streamside thickets and marsh edges, as well as shrublands composed of willow, dogwood, and small deciduous trees, with nesting often concentrated in dense patches of broadleaf vegetation.	*	
Insects				
Monarch Butterfly (*Danaus plexippus*)	**Listed as Proposed Threatened**	In western North America, nectar and milkweed resources are often associated with riparian corridors, and milkweed may function as the principal nectar source for monarchs in more arid regions. Additionally, many monarchs use a variety of roosting trees.	X	X
Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*)	**Listed as Proposed Threatened**	Occurs in a variety of montane and valley habitats across western North America, often in riparian corridors, wet meadows, grasslands, and forest edges that support abundant and diverse flowering plants and healthy populations of host bumble bees. The species is most often associated with relatively undisturbed native landscapes that provide continuous floral resources throughout the growing season.	X	X
Plants				
Ute Ladies'-Tresses (*Spiranthes diluvialis*)	**Listed as Threatened**	Typically occurs in riparian corridors, wet meadows, floodplains, and subirrigated grasslands, often along rivers and streams with seasonally moist soils. The species is commonly associated with stable hydrology, open vegetation, and low levels of disturbance.	X	X

Source: MTNHP. 2026. Environmental Summary Report. https://mtnhp.mt.gov/.

** Per MTNHP ESR, both Canada lynx and yellow-billed cuckoo are potentially present in the area but do not have documented occurrences within the study area.*

Figure 3.4 shows the occurrences of threatened and endangered species within the 0.5-mile study corridor buffer area surrounding I-90, as mapped by MTNHP. Grizzly bears have been observed throughout the study area, with occurrences encompassing much of the region. The western boundary of occurrences begins at RP 290.0 and extends east in both the north and south directions. The wolverine is also listed as a threatened species, with observations occurring just outside the 0.5-mile study corridor buffer (east of RP 315) but within the broader 1.0-mile MTNHP buffer. Due to its proximity to the corridor, it is included in mapping for additional contextual reference. The Ute ladies'-tresses is documented in the Three Forks area near RP 278. Both the Suckley's cuckoo bumble bee and monarch butterfly indicate multiple species occurrences within the 0.5-mile study corridor buffer generally between RP 295 and 313. While the Canada lynx and yellow-billed cuckoo are potentially known to be present in the study area, there are no documented occurrences of these species, therefore they are not mapped in **Figure 3.4**.

Any improvements forwarded from the corridor study would need to undergo review for compliance with the provisions of the ESA. The listing status of species and critical habitat can change over time; therefore, an up-to-date list of potentially affected species and designated critical habitat should be reviewed for each project.

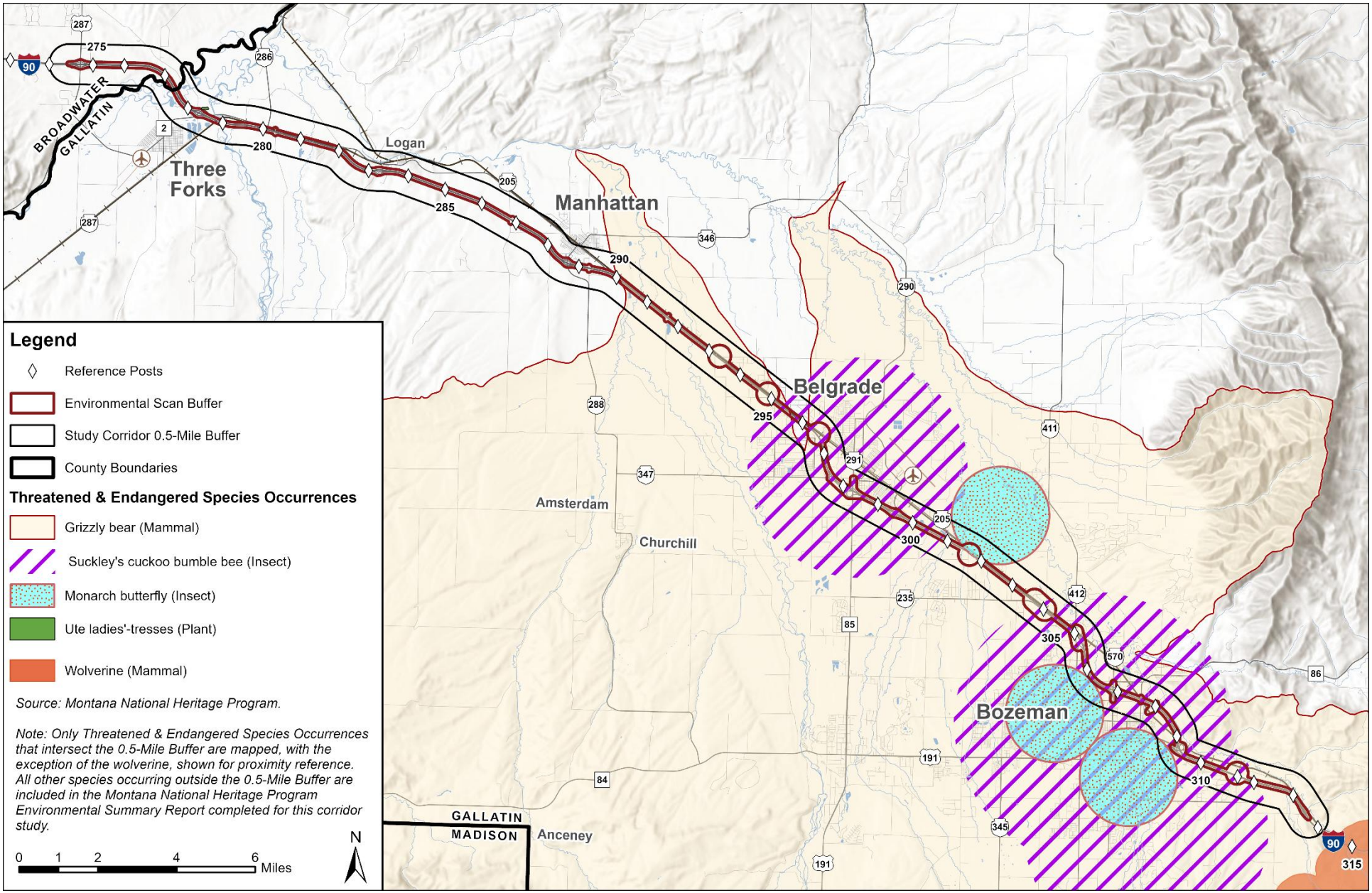

Figure 3.4: Threatened and Endangered Species Occurrences

3.4 Other Species of Concern

MTNHP maintains a database of SOC in Montana. SOC 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.

Federal status is designated by three entities: USFWS, United States Bureau of Land Management (USBLM), and the United States Forest Service (USFS). USFWS status reflects the ESA listings as well as those species protected under or included in the MBTA, BCC, or BGEPA listings. The USBLM designates species listed in three ways, as threatened or endangered under the ESA, or as Sensitive on USBLM lands. The USFS has six designations: endangered, threatened, proposed, or candidate on the ESA, sensitive species on USFS lands, or a Species of Conservation Concern (SCC). A SCC is a species that is not recognized by the ESA, but available data indicates substantial concern about the species' capability to persist over the long-term in the area.

Montana employs a standardized ranking system to denote state status. Species are assigned numeric ranks ranging from 1 (highest risk, greatest concern) to 5 (demonstrably secure), reflecting the relative degree of risk to the species' viability in the state, based upon available information. In addition to numeric ranks, MTNHP may assign qualifiers where available information is limited. Occurrences designated as Insufficiently Assessed or Historical (IAH) are based on outdated or incomplete data and have not been recently verified, resulting in uncertainty regarding current presence or condition. Species with a State Not Ranked (SNR) designation have not been assigned a formal state conservation rank, typically due to insufficient information or because the species has not yet been evaluated.

Table 3.6 presents all of the species occurrence records within a 1.0-mile buffer of I-90, their federal status, state rank (SOC, SSS, and potential species of concern [PSOC]), and state status. A species occurrence is an area of land or water in which a species is, or was, present. Species observations are reviewed by MTNHP for evidence of sustained presence (for example, breeding evidence) and species occurrences are created from those that meet established criteria for species. **Table 3.6** contains SOC species occurrences located both in the 1.0-mile buffer as reported in the MTNHP ESR, as well as species that directly intersect the 0.5-mile study corridor buffer, as shown in **Figures 3.5** through **3.7**. Other species have been observed in the I-90 study area (see **Appendix A**) but have not been documented as a formal species occurrence.

Table 3.6: Montana Species of Concern Occurrences

Species	USFWS Status	USBLM Status	USFS Status	State Status/Rank	MTNHP ESR 1.0-Mile Buffer	Study Corridor 0.5-Mile Buffer
Mammals						
Little Brown Myotis *(Myotis lucifugus)*	None	None	Sensitive	SOC / 2-3	X	X
Grizzly Bear (*Ursus arctos*)	Listed Threatened	Threatened	None	SOC / 2-3	X	X
Wolverine *(Gulo gulo)*	Listed Threatened	Threatened	Sensitive	SOC / 3	X	
Silver-haired Bat *(Lasionycteris noctivagans)*	None	None	None	SOC / 2-3	X	X
Hoary Bat *(Myotis Volans Lasiurus cinereus)*	None	Sensitive	Sensitive	SOC / 3	X	X
Townsend's Big-eared Bat *(Corynorhinus townsendii)*	None	Sensitive	Sensitive	SOC / 2-3	X	X
Bat Roost *(Cave & Non-Cave)*	None	None	None	IAH/SNR	X	X

Species	USFWS Status	USBLM Status	USFS Status	State Status/Rank	MTNHP ESR 1.0-Mile Buffer	Study Corridor 0.5-Mile Buffer
Birds						
Great Blue Heron *(Ardea herodias)*	MBTA	None	None	SOC / 3	X	X
Sage Thrasher *(Oreoscoptes montanus)*	MBTA	Sensitive	None	SOC / 3B	X	X
Brewer's Sparrow *(Spizella breweri)*	MBTA	Sensitive	None	SOC / 3B	X	X
Lewis's Woodpecker *(Melanerpes lewis)*	MBTA	Sensitive	SCC	SOC / 2B	X	X
Veery *(Catharus fuscescens)*	MBTA	Sensitive	None	SOC / 3B	X	X
Bobolink *(Dolichonyx oryzivorus)*	MBTA	None	None	SOC / 3B	X	X
Long-billed Curlew *(Numenius americanus)*	MBTA	Sensitive	None	SOC / 3B	X	X
Cassin's Finch *(Haemorhous cassinii)*	MBTA	None	None	SOC / 3	X	X
Brown Creeper *(Certhia americana)*	MBTA	None	None	SOC / 3	X	X
Green-tailed Towhee *(Pipilo chlorurus)*	MBTA	None	None	SOC / 3B	X	X
Loggerhead Shrike *(Lanius ludovicianus)*	MBTA	Sensitive	None	SOC / 3B	X	X
Pacific Wren *(Troglodytes pacificus)*	MBTA	None	None	SOC / 3B	X	X
Black-billed Cuckoo *(Coccyzus erythropthalmus)*	MBTA	Sensitive	None	SOC / 3B	X	X
Burrowing Owl *(Athene cunicularia)*	MBTA	Sensitive	None	SOC / 3B	X	X
Pileated Woodpecker *(Dryocopus pileatus)*	MBTA	None	None	SOC / 3	X	X
American Bittern *(Botaurus lentiginosus)*	MBTA	Sensitive	None	SOC / 3B	X	X
Ferruginous Hawk *(Buteo regalis)*	MBTA	Sensitive	None	SOC / 3B	X	X
Varied Thrush *(Ixoreus naevius)*	MBTA	None	None	SOC / 3B	X	X
Evening Grosbeak *(Coccothraustes vespertinus)*	MBTA	None	None	SOC / 3	X	X
Golden Eagle *(Aquila chrysaetos)*	MBTA	Sensitive	None	SOC / 3	X	X
Bald Eagle *(Haliaeetus leucocephalus)*	MBTA	Sensitive	Sensitive	SSS / 4	X	X
Clark's Nutcracker *(Nucifraga columbiana)*	MBTA	None	SCC	SOC / 3	X	X
Pinyon Jay *(Gymnorhinus cyanocephalus)*	MBTA	None	None	SOC / 3	X	
Flammulated Owl *(Psiloscops flammeolus)*	MBTA	Sensitive	Sensitive/SCC	S3B / SOC	X	
Northern Goshawk *(Astur atricapillus)*	MBTA	None	None	SOC / 3	X	
Fish						
Westslope Cutthroat Trout *(Oncorhynchus clarkii lewisi)*	None	Sensitive	Sensitive/SCC	SOC / 2	X	
Invertebrates						
A Cave Obligate Amphipod *(Stygobromus puteanus)*	None	None	None	SOC / 1-2	X	X
Hooked Snowfly *(Isocapnia crinite)*	None	None	None	SOC / 2	X	X

Species	USFWS Status	USBLM Status	USFS Status	State Status/Rank	MTNHP ESR 1.0-Mile Buffer	Study Corridor 0.5-Mile Buffer
Alberta Snowfly *(Isocapnia integra)*	None	None	None	SOC / 2	X	X
Gartrell's Flatheaded Mayfly *(Cinygmula gartrelli)*	None	None	None	SSS / SNR	X	
Western Pearlshell *(Margaritifera falcata)*	None	Sensitive	Sensitive/SCC	SOC / 2	X	X
Monarch Butterfly *(Danaus plexippus)*	Proposed	None	None	SOC / 2-3	X	X
Suckley's Cuckoo Bumble Bee *(Bombus suckleyi)*	Proposed	None	None	SOC / 1	X	X

Source: MTNHP. 2026. Environmental Summary Report. https://mtnhp.mt.gov/.

If projects are advanced from the corridor study, a thorough review of wildlife occurrence databases should be conducted, and habitats near any proposed project sites should be evaluated to determine their suitability for any SOC. Measures to avoid or minimize disturbance of these species or their habitat should be incorporated into project design and implementation.

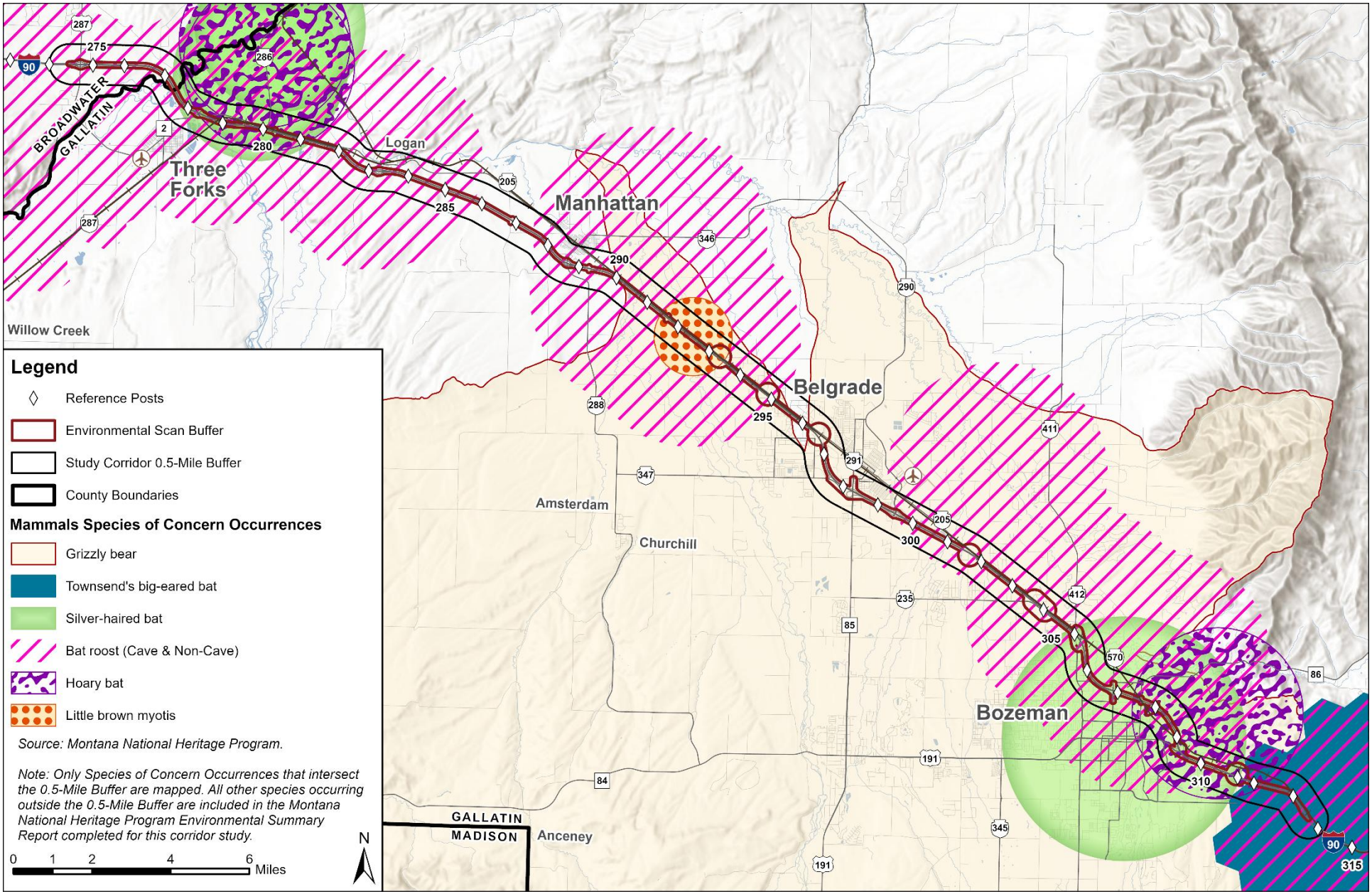

Figure 3.5: Mammal Species of Concern Occurrences

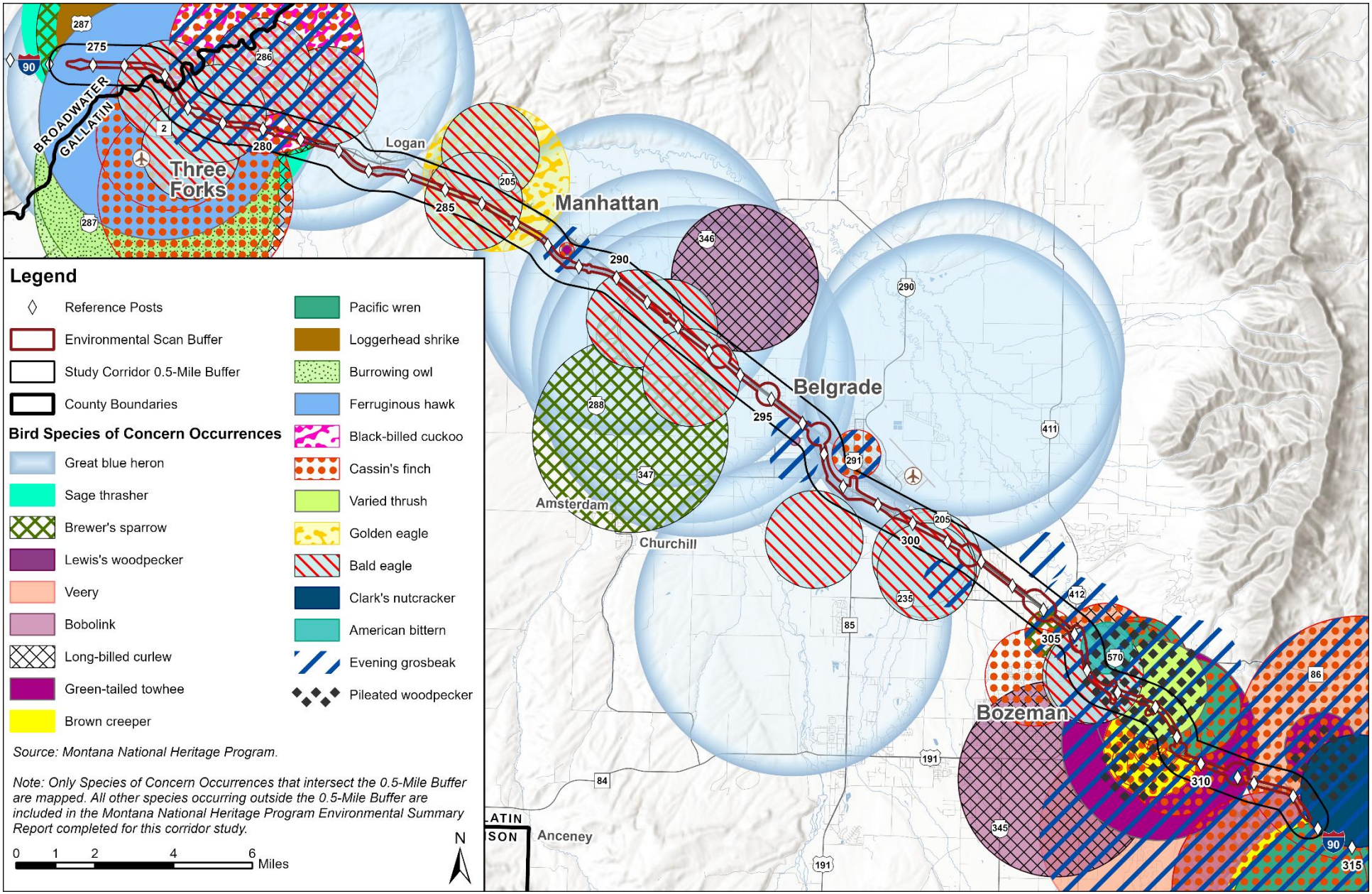

Figure 3.6: Bird Species of Concern Occurrences

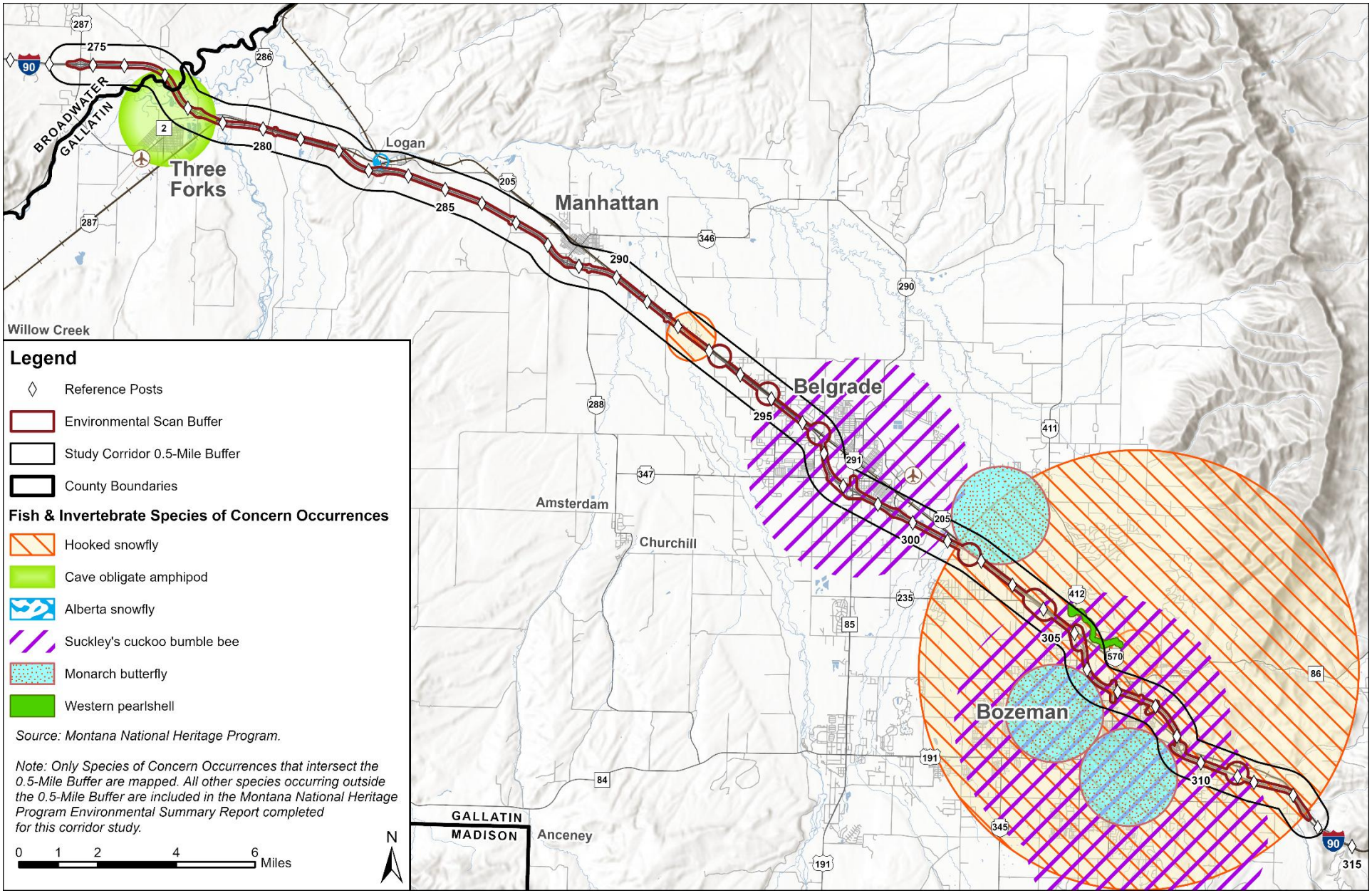

Figure 3.7: Fish and Invertebrate Species of Concern Occurrences

4.0 SOCIAL AND CULTURAL RESOURCES

4.1 Recreational Resources

Recreational resources are abundant within and adjacent to the study corridor and support a wide range of year-round outdoor activities, including fishing, hunting, hiking, camping, mountain biking, wildlife viewing, skiing, snowmobiling, and other winter recreation. I-90 provides access to numerous nationally and regionally significant recreational destinations and public lands. The corridor connects travelers to the Gallatin National Forest, Lewis and Clark National Forest, and surrounding mountain ranges, facilitating access to extensive trail systems, dispersed recreation areas, and winter sports opportunities. Access to the Bridger Mountain Range, located within the Gallatin National Forest north of Bozeman, is provided via Bridger Canyon Road (Montana Highway 86), which serves as the primary route to trailheads, public lands, and Bridger Bowl Ski Area.

The corridor also provides access to major river-based recreational resources, including the Gallatin, Madison, and Jefferson rivers, which support high levels of recreational use such as fly fishing, rafting, and kayaking. Numerous public fishing access sites (FAS) along these rivers are managed by MFWP. Five FAS are located within the 0.5-mile study corridor buffer, as listed and described in **Table 4.1**.

In addition to serving local and regional recreation, I-90 is a key travel route for tourists accessing major national parks in Montana and the Greater Yellowstone Region. The corridor is heavily used by visitors traveling to and from Yellowstone National Park and provides an important east to west connection for long-distance recreational travel to Glacier National Park, contributing to statewide tourism activity.

Several parks, trailheads, fishing access sites, and other recreational facilities managed by MFWP, USFS, DNRC, and local governments are located within or near the study corridor. These recreational assets generate substantial recreational travel and tourism-related economic activity for nearby communities, including Three Forks, Manhattan, Belgrade, and Bozeman. Recreational facilities within the study area are shown in **Figure 4.1** and listed in **Table 4.1**.

Table 4.1: Public Recreational Properties

Site Name	RP	Site Description – Within 0.5-Mile Buffer	Manager
Three Forks Ponds Fishing Access Site	278.5	State FAS located approximately 3 miles south of I-90 at Three Forks (Exit 278) consisting of a series of managed ponds offering fishing and day-use opportunities.	MFWP Region 3
Blackbird Fishing Access Site	278.5	State FAS located near Three Forks, north of I-90 (Exit 278), along the Jefferson River. The site provides public access for fishing and includes a boat launch for river recreation.	MFWP Region 3
Milwaukee Fishing Access Site	278.5	State FAS located south of I-90 near Cardwell providing public fishing access to the Jefferson River and day-use recreation, including fishing, boating access, and general river-based activities.	MFWP Region 3
Bud Lilly Fishing Access Site	283.5	State FAS located near Bozeman, north of I-90 (Exit 306), along the East Gallatin River. The site provides public fishing access and day-use recreational opportunities.	MFWP Region 3
Cherry River Fishing Access Site (FAS)	307.0	State FAS located south of I-90 near Big Timber (Exit 333), providing public access to the Boulder River. The site offers fishing and boating opportunities and supports day-use recreation.	MFWP Region 3
Glen Lake Rotary Park	307.2	Public park located north of I-90 in Bozeman (Exit 321) with a small lake offering fishing and general recreation opportunities.	MFWP Region 3

Source: MFWP. 2026. Recreational Sites and Areas. https://fwp-gis.mt.gov/.

4.1.1 State Parks

As previously discussed in **Section 2.1**, two state parks are located near the study corridor. Missouri Headwaters State Park is located near the town of Three Forks (RP 280) approximately three miles off I-90. It is a 532-acre heritage park in Gallatin County located at the confluence of the Jefferson, Madison, and Gallatin rivers and contains significant riverine and riparian resources that contribute to the ecological, recreational, and historical importance of the area. Designated a National Historic Landmark (NHL) in 1966, the park holds exceptional national significance for its association with Native American cultural and spiritual traditions, the Lewis and Clark Expedition, and early Euro-American settlement in Montana.[35]

Madison Buffalo Jump State Park is located near Logan, about seven miles south of I-90. The park overlooks the Madison River Valley and features a prominent limestone cliff, serving as a historic recreational and interpretive site. Established in 1966, it is dedicated to preserving this historic hunting site and educating visitors about Indigenous culture and traditional bison hunting practices.

Montana State Parks are administered by MFWP under Title 23 of Montana Code Annotated and are managed to protect recreational, scenic, cultural, and natural resources, including surface waters and riparian areas. Activities occurring within or adjacent to state park boundaries that may affect park lands, water resources, or visitor use areas typically require coordination with MFWP and consistency with park-specific management plans. Proposed transportation improvements within the I-90 corridor that may directly or indirectly affect state park lands would require coordination with MFWP to determine the need for land-use authorizations, easements, or special use approvals. Additionally, as an NHL, any federally funded or permitted actions affecting Missouri Headwaters State Park would also be subject to review under Section 106 of the *National Historic Preservation Act*[36] (NHPA), including consultation with the Montana State Historic Preservation Office (SHPO), and other consulting parties, as appropriate.

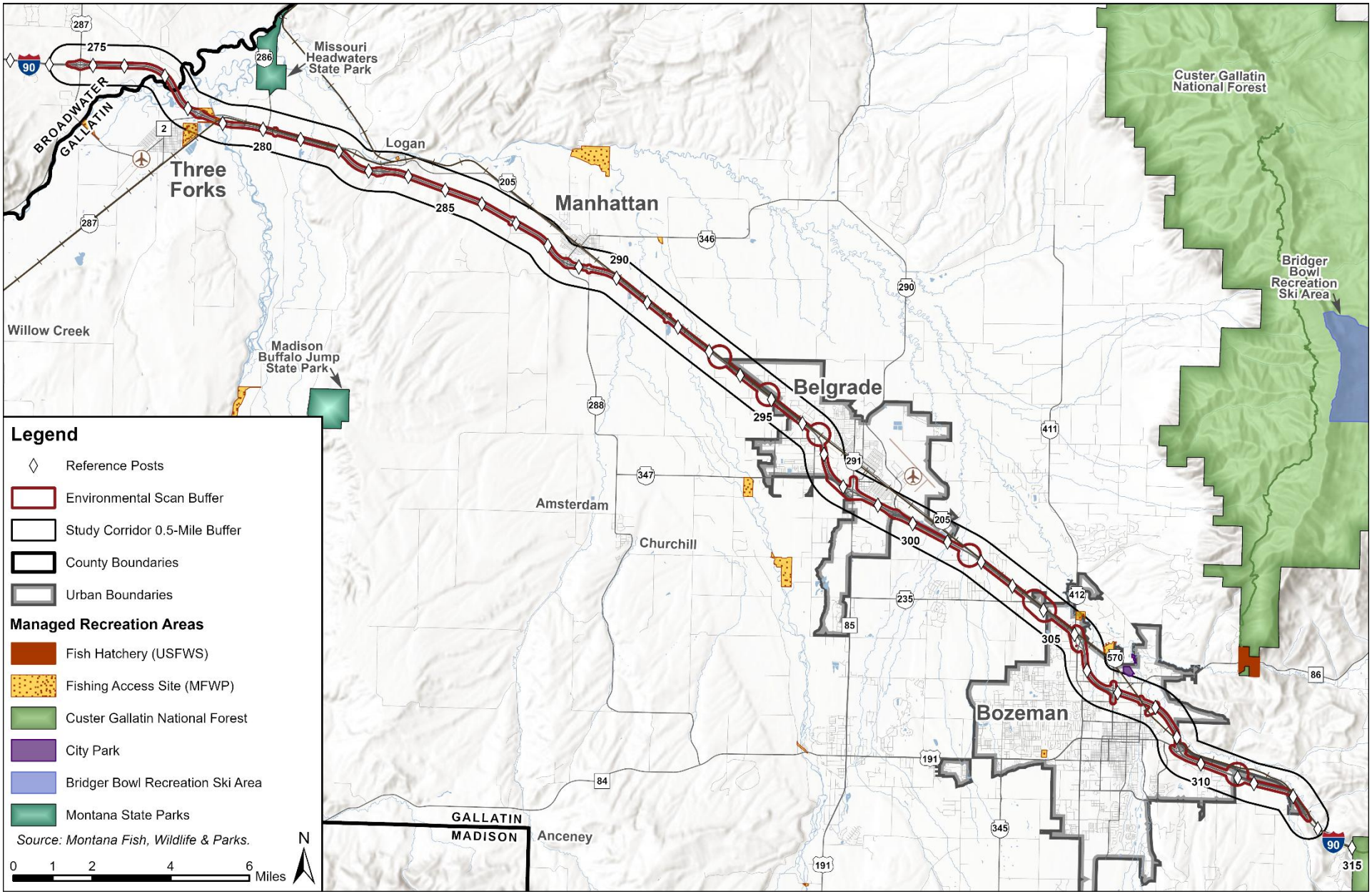

Figure 4.1: Recreational Resources

4.2 Cultural and Historic Resources

Section 106 of the *National Historic Preservation Act* establishes requirements for considering the effects of proposed federal, federally assisted, or federally licensed undertakings on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). The implementing regulations of Section 106 require agencies to seek ways of avoiding, minimizing, or mitigating any adverse effects on historic and archaeological properties. Additionally, Section 106 requires consultations with the Indian Tribes that may have current or traditional interests in the project area.

Other state and federal directives impose additional requirements that must be addressed regarding effects of proposed undertakings on historic and archaeological resources and paleontological sites. Federal directives addressing historic and archaeological resource issues include Section 4(f) of the *United States Department of Transportation Act*, the *Archaeological Resources Protection Act*[37] and the *Native American Graves Protection and Repatriation Act*.[38] State of Montana directives addressing historic and archaeological resource issues include the *Montana Antiquities Act*[39] (which also addresses paleontological resources) and the *Montana Human Skeletal Remains and Burial Site Protection Act*.[40] MDT consults with SHPO to ensure compliance with Section 106 and other directives regarding cultural resources.

A review of the SHPO Cultural Resource Information System was conducted for sites within the study area. Based on available reporting, 261 cultural resource sites have been documented, including 157 historic properties and 104 prehistoric sites. Of these, 64 are not eligible for listing in the NRHP, 83 are eligible, 13 are already NRHP listed, and 93 are of undetermined status, indicating they were not evaluated for NRHP eligibility at the time of original documentation, with eight sites recorded as unresolved. **Table 4.2** lists the 13 NRHP-listed sites, and a full table with all sites listed is available in **Appendix B**.

Table 4.2: Previously Listed NHRP Sites

No.	Site ID	Township, Range, Section	Time Frame	Site Type	Owner	NRHP Status
1	24GA0391	1S-4E-1 (NESW)	Historic 1890-1899	Historic Residence	Private	Listed
2	24GA0768	1S-4E-1	Historic 1900-1909	Historic Industrial Development	State Owned	Listed
3	24GA0745	2N-1E-25 (SW)	Historic 1910-1919	Historic Recreation/Tourism/hotel	Private	Listed
4	24GA1545	2N-1E-2 5 (SW)	Historic More Than One Decade	Historic Church	Private	Listed
5	24GA0713	2N-1E-25	Historic Period	Historic Site	Private	Listed
6	24GA1398	2N-1E-25	Historic More Than One Decade	Historic Architecture	Private	Listed
7	24GA1678	2N-1E-25	Historic More Than One Decade	Historic Bank	Private	Listed
8	24GA1100	2S-6E-5 (NW)	Historic More Than One Decade	Historic District	Private	Listed
9	24GA1100	2S-6E-5 (NESW)	Historic More Than One Decade	Historic District	Private	Listed
10	24GA0946	2S-6E-6 (SW)	Historic 1870-1879	Historic Residence	Private	Listed
11	24GA0937	2S-6E-6	Historic 1930-1939	Historic Grain Elevator	Other	Listed
12	24GA0956	2S-6E-6	Prehistoric More Than One Period	Historic District/Commercial Development	Combination	Listed
13	24GA1100	2S-6E-8 (NW)	Historic More Than One Decade	Historic District	Private	Listed

Source: Montana Historical Society. 2026. National Register of Historic Places-Sites. https://mhs.mt.gov/shpo/.

Most of the inventory and site documentation completed within the study corridor is over 30 years old. According to modern Section 106 standards, updated surveys and site updates would be required for any new ground-disturbing construction projects proposed for the study corridor. If any MDT-initiated projects are forwarded from the planning study, a cultural resource survey for unrecorded historic and archaeological properties would be completed within the Area of Potential Effect defined for each project. Direct and indirect impacts (such as visual, noise, and access impacts) to NRHP-listed or eligible properties may be considered if improvements options are carried forward. Early consultation and involvement with owners would be necessary to address potential impacts for highway improvements. Consultation with SHPO would be conducted to identify any mitigation required for project impacts. Flexibility in design would be pursued to avoid and/or minimize impacts to historically or culturally significant sites in the study corridor.

4.3 Section 4(f) Resources

Projects that receive federal funding and/or discretionary approvals from the FHWA must demonstrate compliance with Section 4(f) of the *Department of Transportation Act*. Section 4(f) protects publicly owned public parks, recreation areas, and wildlife/waterfowl refuges. Section 4(f) also protects historic sites of national, state, or local significance on public or private land that are potentially eligible for listing or are listed on the NRHP. The regulations require coordination with the official(s) with jurisdiction when making determinations about the use of protected properties or resources.

If a project uses a Section 4(f) property and a finding of de minimis impact is not made, FHWA can approve the use of that property only if the agency finds that (1) there is no feasible and prudent avoidance alternative to the use of the Section 4(f) property, and (2) all possible planning to minimize harm to the Section 4(f) property has been incorporated into the alternative.

Recreation facilities qualify as Section 4(f) properties if they are publicly owned, open to the public during normal hours of operation, and serve recreation activities as a major purpose as stated in adopted planning documents. National forest lands are generally not subject to Section 4(f) unless portions of the public multiple use property are specifically designated by statute or identified in an official management plan as being primarily for public park, recreation, or wildlife and waterfowl refuge purposes, and are determined to be significant for such purposes. Section 4(f) also applies to historic sites that are on or eligible for the NRHP.

If improvement options are forwarded from the corridor study, potential effects on recreational use including sites listed in **Table 4.3** should be investigated and appropriately considered in accordance with Section 4(f).

4.4 Section 6(f) Resources

Projects may be subject to Section 6(f) of LWCF which was enacted to preserve, develop, and ensure the quality and quantity of outdoor recreation resources. Section 6(f) protection applies to public recreational sites purchased or improved with LWCF funds. Section 6(f)(3) of the act prevents conversion of lands purchased or developed with LWCF funds to non-recreation uses, unless the Secretary of the Department of the Interior, through the National Park Service, approves the conversion. Conversion may only be approved if it is consistent with the comprehensive statewide outdoor recreation plan in force when the approval occurs, and the converted property is replaced with other recreation property of at least equal fair market value and of reasonably equivalent usefulness and location.

The list of all projects funded by LWCF grants within Gallatin and Broadwater counties was reviewed to identify Section 6(f) encumbered lands in the study area.[41] Only projects located in Gallatin County were identified within or in the vicinity of the study area and are listed in **Table 4.3.** These projects qualify for protection under Section 6(f).

Table 4.3: Section 6(f) Resources

Site Name	Project Number	County	Project Sponsor
Missouri Headwaters State Park	30-00005, 30-00034, 30-00090, 30-00355	Gallatin	MFWP
Cameron Bridge Fishing Access Site	30-00040, 30-00244, 30-00299, 30-00518	Gallatin	MFWP
Bozeman Pond Fishing Access Site	30-00056	Gallatin	MFWP
Grey Cliff Fishing Access Site	30-00056	Gallatin/Sweet Grass	MFWP
Cherry River Fishing Access Site	30-00125, 30-00205	Gallatin	MFWP
Drouillard Fishing Access Site	30-00299, 30-00380, 30-00471	Gallatin	MFWP
Gallatin Forks Fishing Access Site	30-00299, 30-00432	Gallatin	MFWP
Cobblestone Fishing Access Site	30-00299, 30-00399	Gallatin	MFWP
Shed's Bridge Fishing Access Site	30-00477	Gallatin	MFWP
Three Forks Ponds Fishing Access Site	30-00521	Gallatin	MFWP

Source: MFWP. 2026. Land & Water Conservation Fund Grants. https://fwp.mt.gov/aboutfwp/grant-programs/land-and-water-conservation-fund.

4.5 Visual Resources

The visual resources of an area include the features of its landforms, vegetation, water surfaces, and cultural modifications (physical changes caused by human activities) that give the landscape its visual character and aesthetic qualities. Landscape features, natural appearing or otherwise, form the overall impression of an area. Visual resources are typically assessed based on 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 area encompasses a wide variety of visual settings that reflect a distinctly Montana landscape, influenced by rapid population growth and expanding urban development. Sweeping views of the Gallatin Valley include open rangelands, working agricultural fields, and distant mountain ranges, now increasingly interspersed with expanding residential subdivisions and commercial centers. This pattern of growth is contributing to a more continuous urban footprint, gradually connecting previously separate developed areas and extending urban sprawl into rural portions of the corridor. The Interstate highway and local roads weave through rolling terrain alongside riparian corridors and wetlands that add texture and seasonal color. Together, these natural and human elements shape the area's evolving visual character. Actions that may have visual impacts include projects in new locations or those involving expansion, realignment, or other changes that could alter the character of the existing landscape or bring the roadway closer to residential areas, parks and recreation areas, historic sites, or other culturally important resources.

5.0 SUMMARY

This *Environmental Scan* provides a comprehensive, planning-level evaluation of physical, biological, social, and cultural resources within the I-90 corridor between West Three Forks and Bozeman. The purpose of this scan is to identify existing environmental conditions, potential constraints, and key considerations that may influence the development of future transportation improvements identified through the corridor study. The analysis is based on publicly available data, prior studies, and coordination with agencies and stakeholders, and is intended to inform future project development and environmental review processes.

While this *Environmental Scan* identifies important environmental features and potential areas of concern, it does not constitute a project-level analysis. Any improvement alternatives advanced from this study will require detailed environmental documentation and compliance with NEPA/MEPA and other applicable federal and state regulations. The following summarizes the key findings and considerations by resource category.

Physical Environment

- The I-90 corridor traverses a diverse physical landscape shaped by agricultural use, transportation infrastructure, and rapid urban growth, particularly in the Gallatin Valley. Land ownership is predominantly private, with public lands, conservation easements, and recreational areas interspersed throughout the corridor. Land use transitions from agricultural and open space in rural areas to increasingly developed residential, commercial, and industrial uses near Belgrade and Bozeman.
- Prime and important farmland soils are present within the study area and may be subject to the FPPA if federally funded projects are advanced. Continued population growth and development pressures have resulted in conversion of agricultural lands, particularly in urbanizing areas, which may influence future project siting and design.
- Geologic conditions along the corridor are complex and variable, consisting of alluvial and glacial deposits overlying sedimentary and bedrock formations within an active seismic region. The corridor lies within the Intermountain Seismic Belt and is considered a moderate to high seismic risk area. These conditions present potential geotechnical challenges, including settlement, slope instability, and liquefaction, which would require site-specific investigation during project development.
- The corridor crosses major rivers including the Jefferson, Madison, Gallatin, and East Gallatin Rivers, as well as numerous tributaries. Several waterbodies within the corridor are listed as impaired. Projects affecting these resources would require coordination with regulatory agencies and may trigger permitting and mitigation requirements under the CWA.
- Groundwater is a critical resource in the study area, with a high density of domestic, agricultural, and public supply wells, particularly near Belgrade and Bozeman. Shallow aquifers are susceptible to contamination, and the presence of public water supply wells introduces additional regulatory considerations and protection requirements for future projects.
- Irrigation facilities such as canals and ditches are common throughout the corridor, particularly between Logan, Manhattan, Belgrade, and Bozeman, with 18 facilities identified within the 300-foot buffer and additional facilities mapped within the broader study area. Because irrigation systems frequently intersect transportation corridors and developed areas, future project development will require coordination with irrigation districts, ditch companies, and landowners to minimize impacts to agricultural operations and water delivery systems.
- Floodplain areas are primarily associated with major river crossings and low-lying areas near Three Forks, Manhattan, and Bozeman. While much of the corridor lies outside the 100-year floodplain, localized flood risks exist and must be considered in project design in accordance with federal and state floodplain regulations.

- Hazardous material sites, including a federal superfund site, state cleanup sites, underground storage tanks, and petroleum release locations, are present within the corridor. These sites may pose risks to soil and groundwater and could affect construction activities, requiring further investigation and coordination with MDEQ.
- The study area is currently in attainment for all federal and state air quality standards. However, future projects may result in temporary construction-related air quality impacts. Noise-sensitive receptors, including residences and recreational areas, are present along the corridor and may require detailed noise analysis if roadway modifications are advanced.

Biological Environment Resources

- The corridor supports a diverse range of vegetation communities, including grasslands, shrublands, wetlands, riparian areas, and agricultural lands. Grasslands are the dominant natural cover type, while riparian and wetland areas provide important ecological functions and habitat diversity.
- Invasive and noxious weeds are widespread throughout the study area, including both terrestrial and aquatic species. These species are particularly prevalent in disturbed areas such as transportation corridors and riparian zones and present an ongoing management concern.
- The corridor provides habitat for a wide variety of wildlife species, including large mammals such as deer, elk, and bears, as well as numerous bird species, amphibians, reptiles, and fish. Riparian corridors and river systems are especially important for wildlife movement, aquatic habitat, and biodiversity.
- Wildlife-vehicle collisions are a notable concern along the corridor, with documented animal mortality dominated by deer. These patterns suggest frequent wildlife movement across the Interstate.
- Several federally listed and proposed species occur, or have the potential to occur, within the study area, including grizzly bear, wolverine, Canada lynx, monarch butterfly, Suckley's cuckoo bumble bee, yellow-billed cuckoo, and Ute ladies'-tresses. In addition, numerous Montana SOC have been documented within the corridor. Any future projects will require coordination with resource agencies and compliance with the ESA to evaluate and address potential impacts.
- Aquatic habitats within the corridor support native and introduced fish species and are important for both ecological function and recreational fisheries. Fish passage considerations and habitat protection measures may be required where roadway infrastructure interacts with streams and rivers.

Social and Cultural Resources

- The I-90 corridor provides critical access to a wide range of recreational resources, including rivers, fishing access sites, public lands, and regional destinations such as national forests and mountain ranges. The corridor supports year-round recreation and tourism, including access to Yellowstone and Glacier National Parks, and contributes significantly to the regional economy.
- State parks and other protected recreational areas near the corridor represent important cultural, historical, and recreational assets. These resources may require coordination and regulatory compliance if affected by future transportation improvements.
- Cultural resource investigations identified a substantial number of historic and prehistoric sites within the study area, including properties listed on or eligible for the NRHP. Many sites have not been recently evaluated, indicating the need for updated surveys and consultation during project development.
- Future projects will be subject to Section 106 of the NHPA and will require coordination with the SHPO and other stakeholders to avoid, minimize, or mitigate impacts to cultural resources.

- Recreational and historic properties within the corridor may qualify as Section 4(f) resources, requiring avoidance or minimization of impacts and demonstration of prudent and feasible alternatives. Additionally, several recreational sites are protected under Section 6(f) of the LWCF, which restricts conversion of these lands without federal approval and replacement of equivalent resources.
- Visual resources along the corridor are characterized by expansive valley views, agricultural landscapes, river corridors, and surrounding mountain ranges. Rapid growth and development are altering the visual character of the area, and future transportation improvements have the potential to further affect scenic quality, particularly in areas near residential, recreational, and culturally sensitive resources.

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