

**Montana Department of Transportation**

Great Falls South Arterial  
MT 5299(70)  
CN 4566

**Environmental Scan**

**DRAFT**

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## **List of Acronyms**

CO	Carbon Monoxide
DNRC	Department Of Natural Resource And Conservation
ESA	Endangered Species Act
ESB	East Side Bypass
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
GIS	Geographic Information System
LUST	Leaking Underground Storage Tank
LWQD	Local Water Quality District
LUST	Leaking Underground Storage Tank
LWQD	Local Water Quality District
MSAT	Mobile Source Air Toxics
MEPA	Montana Environmental Policy Act
MDEQ	Montana Department Of Environmental Quality
MDT	Montana Department Of Transportation
MFWP	Montana Department Of Fish, Wildlife, And Parks
MP	Milepost
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHP	Natural Heritage Program
NAC	Noise Abatement Criteria
NPL	National Priority List
NPS	National Park Service
NRC	National Response Center
NRHP	National Register Of Historic Places
NRIS	Natural Resource Information System
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
RCRA	Resource Conservation And Recovery Act
TMDL	Total Maximum Daily Load
TRI	Toxics Release Inventory
UST	Underground Storage Tank
USACE	U.S. Army Corps Of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish And Wildlife Service

# **1 Introduction**

## **1.1 Background**

The Great Falls South Arterial Alignment Study (Study) is part of a long term planning process that carries forward recommendations from a recently completed Great Falls Arterial Feasibility Study (2004), the current Great Falls Area Transportation Plan (2003), and the Great Falls Growth Policy (2005), all of which recommend further study of the South Arterial. The planning level analysis, being conducted under this Study, allows for the identification, selection and elimination of potential alignments, but lacks the precision to identify the specific properties or other features impacted. After the currently proposed alignments are reduced to one or more alignments, additional detailed and specific environmental analysis and design will then be conducted, including the identification of specifically impacted properties and possible mitigation measures. The reader should also be advised that even after completion of these types of environmental analyses, major roadway improvement projects can typically take from seven to ten years to reach the construction phase. This project development process is also highly dependent on funding availability, which can add to the timeline.

The primary objective of this Environmental Scan Report is to determine the potential impacts or constraints for the Great Falls South Arterial Alignment Study.

## **1.2 Organization of Report**

This report goes on to describe the geographic setting of the existing Great Falls South Arterial Corridor. The document continues with descriptions of environmental scan methodologies and results for the geographic area for physical resources (Section 3), biological resources (Section 4), cultural resources (Section 5), and utilities (Section 6). A list of tables and appendices is on page 1. A list of acronyms is defined on page 2.

# **2 Geographic Setting**

The Great Falls South Arterial Corridor as described in the Great Falls Arterial Feasibility Study is generally located south of the urbanized area of Great Falls, beginning at Interstate 15 at or near the Airport Interchange and south of the Granda Vista residential area. The corridor precedes easterly towards the Gibson Flats area and to an intersection with 10<sup>th</sup> Avenue South at or near 57<sup>th</sup> Street South, and including US 87/89 (MT Highway 3). The endpoints will be refined during the engineering phase rather than the location study phase that is currently underway. The corridor is generally 3 miles wide, approximately 8.1 miles long, and contains one Missouri River crossing located near or south of Taylor Island. The upper boundary of the corridor is generally delineated by 24<sup>th</sup> Avenue South. Multiple existing east-west transportation corridors currently exist within the corridor. Land use within the corridor is predominantly agricultural and residential with some pockets of commercial development, typically near either end of the corridor. The majority of the land within the corridor is undeveloped.

The following sections will describe the Great Falls South Arterial Corridor for the purpose of environmental discussions in this document. They are not necessarily indicative of proposed

alternatives, but rather a collection of geographic areas by which environmental discussions can be grouped.

### 3 Physical Resources

#### 3.1 Land Ownership

Geographic Information System (GIS)-based information was reviewed to assess the amount of area in the study corridor that is public versus privately owned.

Reviews were also conducted to determine the presence of Section 4(f) and Section 6(f) properties along the corridor. Section 4(f) refers to the original section within the Department of Transportation Act of 1966 (49 U.S.C. 303), which set the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. Prior to approving a project that “uses” a Section 4(f) resource, FHWA must find that there is no prudent or feasible alternative that completely avoids 4(f) resources. “Use” can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a 4(f) resource. Constructive “use” can also occur when a project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under 4(f) are “substantially impacted”. Section 4(f) resource information was gathered by field observation and review of the National Register of Historic Places (NRHP) list for Cascade County.

Section 6(f) of the Land and Water Conservation Funds Act applies to all projects that impact recreational lands purchased or improved with land and water conservation funds. The Secretary of the Interior must approve any conversion of property acquired or developed with assistance under this act to other than public, outdoor recreation use. At this time, there are no 6(f) resources identified in the study corridor.

##### 3.1.1 Cascade County

The land within the project boundary in Cascade County is predominantly agricultural and residential with some pockets of commercial development, typically near either end of the corridor. The majority of the land within the corridor is undeveloped.

4(f) resources within the corridor segment are summarized in Table 1.

**Table 1. 4(f) Resources within the Cascade County Portion of the Project Area**

<b>Name</b>	<b>Type of 4(f) Resource</b>	<b>Town (Specific Location Relative to Corridor)</b>
Great Falls Portage National Historic Landmark	Historic Site	

Great Northern Railway's Stockett Spur	Historic Site	
Ayrshire Dairy	Historic Site	4510 13 <sup>th</sup> Street South
Highland Cemetery	Historic Site	2010 33 <sup>rd</sup> Avenue South
Calvary Cemetery	Historic Site	SW of Highland Cemetery
Mount Olivet Cemetery	Historic Site	2101 26 <sup>th</sup> Street South
Hebrew Cemetery	Historic Site	40 <sup>th</sup> Avenue South & Eaton Avenue

### **3.2 Geology and Soils**

Information was obtained on geology and soils to determine the presence of prime and unique farmland, geologic faults, and potential geologic hazard areas with regard to road-building in the corridor study areas.

The Farmland Protection Policy Act of 1981 (Title 7 United States Code, Chapter 73, Sections 4201-4209) has as its purpose "to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland."

Farmland is defined by the act in Section 4201 as including prime farmland, unique farmland, and farmland, other than prime or unique farmland, that is of statewide or local importance.

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

Seismic information was reviewed for fault lines and seismic hazard areas. This geologic information can help determine any potential design and construction issues related to

embankments and bridge design. The following paragraphs describe the geology and history behind the seismicity present in Montana and also the farmland soils findings for the corridor.

### **3.2.1 Existing Great Falls South Arterial Corridor**

A soil survey is available for the Great Falls South Arterial Corridor area. Information regarding areas of prime farmland in the corridor area was compiled from the US Department of Agriculture, Natural Resource Conservation Service (NRCS).

The AD-1006 Farmland Conversion Impact Rating Form is a way for the NRCS to keep inventory of the Prime and Important farmlands within the state. Soil map units found within the project area have been classified as prime and important farmlands. Project activities associated with the construction of the Great Falls South Arterial Alignment will create impacts to the soil map units with prime and important farmland status, thus it is required that a AD-1006 Farmland Conversion Impact Rating Form be completed. The process for completing this form requires mapping of the prime and important farmlands to be converted to non-farmable land, coordination with the NRCS, and final completion of the conversion form.

Appendix A contains a map and a description of the farmland classification types found in the Great Falls South Arterial Corridor area.

Appendix B contains a map showing a belt of seismicity known as the Intermountain Seismic Belt that extends through western Montana, from the Flathead Lake region in the northwest corner of the state through Idaho, Wyoming, Utah, and into southern Nevada. In western Montana, the Intermountain Seismic Belt is up to 100 kilometers (62 miles) wide and parallels the Rocky Mountains. The Centennial Tectonic Belt, a branch of the Intermountain Seismic Belt, includes at least eight major active faults. The Great Falls South Arterial Corridor area appears to be located outside of the Intermountain Seismic Belt and the Centennial Tectonic Belt. To mitigate seismic impacts to structures under MDT's jurisdiction, all transportation structures constructed will be designed in accordance with the appropriate AASHTO seismic design standards.

When shaken by an earthquake, certain soils are susceptible to liquefaction; that is, they lose strength and temporarily behave like liquids. The seismically induced loss of strength can result in failure of the ground surface, most typically expressed as lateral spreads, surface cracks, settlement, or sand boils. Structures, including roadways, can sustain substantial damage during a large seismic event if they are supported in or on a soil susceptible to liquefaction. Seismically induced liquefaction typically occurs in loose, saturated, sandy material commonly associated with recent river, lake, and beach sedimentation. In addition, seismically induced liquefaction can be associated with areas of loose, saturated fill (USGS 1992). Several areas along the project corridor are underlain by alluvium and consequently susceptible to liquefaction (See Appendix C for an alluvium geologic map).

### **3.3 Surface Water and Groundwater**

The Great Falls South Arterial Corridor contains many public water supplies with sources from both surface water and groundwater. Protection of these water supplies is important. In addition to providing public drinking water, water resources provide water for agricultural and industrial

purposes, serve important habitat functions, and provide for recreational use. The following sections give descriptions of the surface water and groundwater present in the Great Falls South Arterial Corridor.

### **3.3.1 Surface Water**

The Missouri River flows through the western portion of the study area. Sand Coulee Creek is the only tributary to the Missouri River within the Great Falls South Arterial Corridor. The Sand Coulee Creek channel is typically dry except for spring runoff and large precipitation events. However, Sand Coulee Creek has a wide floodplain which includes the low lying area of Gibson Flats during significant flood events. Available GIS data were reviewed and field observations made to identify the location of surface water bodies within the corridor study area, including rivers, streams, lakes, or reservoirs.

All water used by the residents of Great Falls, Malmstrom Air Force Base and Black Eagle is water that was pumped from the Missouri River and treated to make it safe to drink. The water treatment facility is located just upstream from the Missouri's confluence with the Sun River in Great Falls. The drinking water currently meets all federal and state drinking water standards. Appendix D contains the 2007 Consumer Confidence Report released by the city of Great Falls that discusses the drinking water supply.

Montana's Department of Environmental Quality (MDEQ) recently completed the Great Falls source water delineation and assessment report. This report delineates a source water protection area for Great Falls (an area of surface water and land that contributes water to the Great Falls Public Water Supply). The report also identifies locations or regions within this area where contaminants might be generated, stored or transported and addresses their relative potential for contaminating Great Falls drinking water.

The Great Falls South Arterial Corridor travels through the Missouri-Sun-Smith Watershed (Hydrologic Unit Code: 10030102). Information on the Missouri River and its tributaries within the study area was obtained from MDEQ's website. Section 303, subsection "d" of the Clean Water Act requires the State of Montana to develop a list, subject to USEPA approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, MDEQ determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL).

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

The Missouri-Sun-Smith watershed is listed in the 2006 Integrated 303(d)/305(b) Water Quality Report for Montana by MDEQ. The water bodies within the Missouri-Sun-Smith Watershed that are located in the study area are all Category 5 water bodies. Category 5 water bodies are waters where one or more applicable beneficial use has been assessed as being impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat. TMDLs have

not yet been written for water bodies in this watershed. According to Appendix F of the Water Quality Report, the Missouri-Sun-Smith Watershed TMDLs are under development and expected completion is 2007 – 2009. When TMDLs are prepared and implementation plans are in place, any construction practices would have to comply with the requirements set forth in the plan.

303(d) listed water bodies within the Missouri-Sun-Smith Watershed that are located in the study area are summarized in Table 2.

**Table 2. 303(d) Listed Water Bodies in Study Area**

<b>Water Body</b>	<b>Beneficial Use</b>	<b>Probable Cause of Impairment</b>	<b>Probable Source of Impairment</b>
Missouri River (Sheep Creek to the Sun River)	Aquatic Life Cold Water Fishery	Sedimentation/Siltation	Agriculture
			Dam Construction (other than upstream flood control projects)
			Highway/Road/Bridge Runoff (non-construction related)
			Impacts from Hydrostructure Flow Regulation/modification
			Natural Sources
			Streambank Modifications/destabilization
Missouri River (Sun River to Rainbow Dam)	Aquatic Life and Coldwater Fishery	Chromium	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)
		Mercury	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)
		Pentachlorobenzene	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)
		Physical substrate habitat alterations	Dam Construction (other than Upstream Flood Control Projects), Industrial/Commercial Site Stormwater Discharge (permitted), Irrigated Crop Production
		Sedimentation/Siltation	Contaminated sediments, Industrial/Commercial Site Stormwater Discharge (Permitted)
		Selenium	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)

Water Body	Beneficial Use	Probable Cause of Impairment	Probable Source of Impairment
		Solids (Suspended/Bedload)	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)
		Turbidity	Contaminated Sediments, Dam Construction (Other than Upstream Flood Control Projects), Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (Permitted), Irrigated Crop Production
	Drinking Water	Chromium	Contaminated sediments, Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (permitted)
	Industrial	Turbidity	Contaminated Sediments, Dam Construction (Other than Upstream Flood Control Projects), Industrial Point Source Discharge, Industrial/Commercial Site Stormwater Discharge (Permitted), Irrigated Crop Production
Sand Coulee Creek (from headwaters to mouth of the Sand Coulee Creek-Missouri River)	Aquatic Life Cold Water Fishery	Aluminum/Nickel/Zinc	Impacts from Abandoned Mine Lands (Inactive), Subsurface (Hardrock) Mining
	Drinking Water	Cadmium/Nickel/Zinc	Impacts from Abandoned Mine Lands (Inactive), Subsurface (Hardrock) Mining
	Agricultural/Industrial	Salinity	Impacts from Abandoned Mine Lands (Inactive), Subsurface (Hardrock) Mining

Water Body	Beneficial Use	Probable Cause of Impairment	Probable Source of Impairment
Sand Coulee Creek (from number five coulee to the mouth of the Missouri River)	Drinking Water	Lead/Zinc	Impacts from Abandoned Mine Lands (Inactive), Subsurface (Hardrock) Mining
	Agricultural/Industrial	Salinity	Agriculture
	Cold Water Fishery	Zinc	Impacts from Abandoned Mine Lands (Inactive), Subsurface (Hardrock) Mining

### 3.3.1.1 Wild and Scenic Rivers

The river systems were also reviewed to determine ‘Wild and Scenic’ designation. The Wild and Scenic Rivers Act, created by Congress in 1968, provided for the protection of certain selected rivers, and their immediate environments, that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The U.S. National Park Service (NPS) website was accessed for information on river segments that may be located within the study area with wild and scenic designation. The designated National Wild and Scenic River systems in Montana are the Middle Fork of the Flathead River (headwaters to South Fork confluence), North Fork of the Flathead River (Canadian border to Middle Fork confluence), South Fork of the Flathead River (headwaters to Hungry Horse Reservoir), and the Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge). No Wild and Scenic Rivers have been designated within the study corridor.

### 3.3.2 Groundwater

The project area overlies the Madison Aquifer, which is the largest artesian aquifer in the United States. All proposed projects receiving federal funds are subject to review to ensure they do not endanger the water source. (USEPA, 2006b)

The Madison Aquifer consists of limestone and dolomite of the Lodgepole and Mission Canyon formations of the Mississippian age Madison Group. Water infiltrates the Madison Aquifer from streams where they cross the Madison Aquifer outcrops in the Little Belt Mountains and where limestone has been dissolved to form solution openings and caverns. Within the Madison Aquifer, water flows generally northward from the Little Belt Mountains and discharges, in part, from springs including Giant Springs near Great Falls.

Cascade County does not have a Local Water Quality District (LWQD). LWQD's are established to protect, preserve, and improve the quality of surface water and groundwater within the district. Currently there are four in Montana. LWQD's are formed pursuant to 701304501 et. Seq., MCA by county governments. MDEQ provides support to LWQD programs, but does not have an active management role in their activities. LWQD serve as local government districts with a governing board of directors, and funding obtained from fees collected annually with county taxes. A significant component of selected district programs is the ability to participate in the enforcement of the Montana Water Quality Act and related rules.

In addition to consulting with USEPA regarding the Madison Aquifer during project development, it is recommended that Cascade County also be consulted. As stated above, Cascade County currently does not have a LWQD. However, Cascade County may have a LWQD in the future. If a LWQD is developed for Cascade County, water quality protection measures may have to be addressed at the local level, in addition to the federal level and state level.

### **3.4 Floodplains**

Executive Order (EO) 11988, Floodplain Management, requires federal agencies to avoid direct or indirect support of floodplain development whenever a practicable alternative exists. EO 11988 and 23 CFR 650 Part A requires an evaluation of project alternatives to determine the extent of any encroachment into the base floodplain. The base flood (100-year flood) is the regulatory standard used by federal agencies and most states to administer floodplain management programs. A "floodplain" is defined as lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, with a one percent or greater chance of flooding in a given year. As described in FHWA's floodplain regulation (23 CFR 650 Part A), floodplains provide natural and beneficial values serving as areas for fish, wildlife, plants, open space, natural flood moderation, water quality maintenance, and groundwater recharge.

The Federal Emergency Management Agency (FEMA) has delineated a 100-year floodplain for the Missouri River within the Great Falls South Arterial Corridor. The county floodplain ordinances regulate the 100-year floodplains in Cascade County. A permit is required for development activities within a floodplain, which include buildings, bridges, culverts, wells, fill, or any other alteration of the 100-year floodplain.

### **3.5 Wetlands**

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

National Wetland Inventory (NWI) Mapping is available for this area, and the maps for the area were reviewed for general wetland locations; however, they were not used in the preparation of this report. NWI maps are generated by the USFWS, and are based on the USFWS definition of wetlands, which does not follow the USACE definition that MDT uses in wetland determination and delineation. NWI maps are typically generated based on aerial and satellite imagery, and are not accurate or detailed enough for MDT project wetland determination and/or delineation.

The study area encompasses portions of the Missouri River, Sand Coulee Creek, and several irrigation ditches, which have wetland areas associated with them. Wetland areas were identified east of Mount Olivet Cemetery, at the base of bluffs approximately one mile south of 10<sup>th</sup> Avenue South. This is not intended to be a complete determination and/or delineation of wetlands in the Great Falls South Arterial Corridor. Potential wetlands were identified using maps and windshield observations. Formal wetland delineations will be conducted according to standard USACE defined procedures during project design. Wetland jurisdictional determinations will also be done during project design.

Wetland impacts should be avoided to the greatest extent practicable. All unavoidable wetland impacts will be mitigated in accordance with USACE requirements.

### **3.6 Hazardous Waste Areas**

The Montana Natural Resource Information System (NRIS) database was searched for underground storage tank (UST) sites, leaking underground storage tank (LUST) sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, and toxic release inventory sites in the vicinity of the Great Falls South Arterial project corridor. This database search is summarized in the following sections.

#### **UST Sites**

Twenty-four (24) UST sites were identified in the vicinity of the project corridor and are summarized in Table 3 below.

**Table 3 – UST Sites**

<b>Number</b>	<b>Site Name/Address</b>	<b>Facility ID</b>	<b>Active</b>	<b>Inactive</b>
1.	Flying J Travel Plaza 3715 31 <sup>st</sup> St SW	56-14148	X	
2.	Town Pump 3100 Tri Hill Frontage Rd	07-03463	X	
3.	Wilbur Kitterman 3928 Tri Hill Frontage Rd	07-12283		X
4.	Andersen & Hovland Ranch 2807 Huckleberry Dr	07-00011		X
5.	Orlan Sorensen 3800 Huckleberry Dr	07-10205		X
6.	Karen Gillespie 4301 Flood Rd	07-12057		X
7.	Milt Felch 5301 Huckleberry Dr	07-11677		X
8.	Great Falls Lift Station 23 3100 Lower River Rd	07-10198		X

9.	Rapley Property 205 31 <sup>st</sup> Ave S	07- 04772		X
10.	White Bear Island Marine 4250 Lower River Rd	07- 06744		X
11.	Outback Country Store 5435 Lower River Rd	07- 02719		X
12.	Doris Shell 10 Sandra Lane	07- 11959		X
13.	Ralph Ward & Sons Auto Parts 1020 Franklin Ave	07- 02019		X
14.	Ayrshire Dairy Farm 4510 13 <sup>th</sup> St. South	07- 05512		X
15.	Fergus Mitchell 4780 13 <sup>th</sup> St South	07- 13331		X
16.	Richard Dahlberg 162 Fields Rd	07- 12995		X
17.	Great Falls Cemetery Assoc. Highland Cemetery 2010 33 <sup>rd</sup> Ave S	07- 10123		X
18.	Northwest Equipment 54 Gibson Flats Rd	56- 13773		X
19.	Raymond Quamen 62 Eaton Ave	07- 10682		X
20.	L Johnson Inc. 123 Gibson Flats Rd	07- 04587		X
21.	Dave Dickman 130 Gibson Flats Rd.	07- 11867		X
22.	Taylor Bros Inc. 4800 10 <sup>th</sup> Ave South	07- 04091		X
23.	Sinclair No. 25001 620 57 <sup>th</sup> Street South	07- 02087	X	
24.	Harvest Hills Conoco 5600 7 <sup>th</sup> Avenue South	07- 03461		X

### LUST Sites

Eleven (11) of the UST sites listed in the previous section have leaked. These sites are identified as LUST sites and are summarized in Table 4 below.

**Table 4 - LUST Sites**

Number	Site Name/Address	Facility ID	Release ID	Release Date	Date Resolved
1.	Town Pump 3100 Tri Hill Frontage	07- 03463	4164 4572	03/27/2003 04/26/2007	N/A N/A

	Rd				
2.	Andersen & Hovland Ranch 2807 Huckleberry Dr	07-00011	3680	03/04/1999	07/08/1999
3.	Rapley Property 205 31 <sup>st</sup> Ave S	07-04772	4325	5/1/1995	N/A
4.	White Bear Island Marine 4250 Lower River Rd	07-06744	2550	03/29/1995	05/22/1995
5.	Outback Country Store 5435 Lower River Rd	07-02719	3958	6/19/2000	11/13/2000
6.	Ayrshire Dairy Farm 4510 13 <sup>th</sup> St South	07-05512	3191	06/27/1997	08/01/2003
7.	Northwest Equipment 54 Gibson Flats Rd	56-13773	3279	11/05/1997	N/A
8.	L Johnson Inc. 123 Gibson Flats Rd	07-04587	2358	10/05/1994	02/08/1995
9.	Taylor Bros Inc. 4800 10 <sup>th</sup> Ave South	07-04091	3580	11/11/1998	N/A
10.	Sinclair No. 25001 620 57 <sup>th</sup> Street South	07-02087	3403	04/10/1998	N/A
11.	Harvest Hills Conoco 5600 7 <sup>th</sup> Avenue South	07-03461	3675	02/24/1999	N/A

### Abandoned Mine Sites

Three (3) abandoned mine sites were identified in the vicinity of the project corridor. All three of these sites were located in the vicinity of 13<sup>th</sup> Street South and 40<sup>th</sup> Avenue South, east of the Missouri River. According to the Montana Department of Environmental Quality's (DEQ) Abandoned Mines Inventory Database, these abandoned mines are identified as coal inventory sites. The extent of the prospects and/or mines associated with these three sites is unknown.

### Remediation Response Sites

Three (3) remediation response sites were identified in the vicinity of the project corridor. A brief description of these sites is included below:

- The *Trailer Terrace Park* and *Pearson Addition* are located east of the Missouri river in the vicinity of Upper and Lower River Road. Elevated levels of nitrates have been detected in the aquifer in the vicinity of these two developments. DEQ attributed the elevated nitrates to two wastewater lagoons and several private wastewater systems (septic tanks and drainfields) located in the area. The Pearson Addition created a water and sewer district to evaluate alternatives for addressing the groundwater contamination. The water and sewer district recommended connecting to the City of Great Falls water and sewer systems. However, it may be several years before these connections are completed. The Trailer Terrace Park is located too far from the City of Great Falls to easily connect to their water and sewer systems. Cascade County may limit future

development in the vicinity of Trailer Terrace Park and Pearson Addition until the wastewater issues are resolved.

- The *Johnson Property* is located at 130 Lower River Road. A subsurface investigation at this property indicated that the drainfield has been impacted by petroleum hydrocarbons. Additional sampling may be needed to fully characterize the site.
- The *Great Falls City-County Barrel Site* is located at approximately 13th Street South and 33rd Ave South. The City of Great Falls, Cascade County, and the Department of Defense utilized this site for storing drums. In 1991 DEQ determined that the drums were leaking. Therefore, the responsible parties removed the drums and contaminated soils. Following cleanup activities, DEQ issued a "No Further Action" and the site was delisted from the CECRA database in December 1996.

### **Landfills**

One (1) landfill was identified in the vicinity of the project corridor. This landfill was located at approximately 14<sup>th</sup> Avenue South and 48<sup>th</sup> Street South, which is approximately six to nine blocks west of the proposed east connection point for the Great Falls South Arterial project. The NRIS database indicated that this landfill was operated by United Materials of Great Falls and closed on December 31, 1989. Apparently, this landfill was utilized for disposing of construction and demolition debris.

### **National Priority List Sites (Superfund Sites)**

There were no National Priority List (NPL) sites identified in the vicinity of the project corridor.

### **Toxic Release Inventory Sites**

There were no Toxic Release Inventory (TRI) sites identified in the vicinity of the project corridor.

After the alignment has been selected and the conceptual design has been completed for the Great Falls South Arterial project, further evaluation may be needed at specific sites to determine if contamination will be encountered during construction. This may include reviewing DEQ files and conducting subsurface investigation activities to determine the extent of soil and groundwater contamination. If it appears that contaminated soils or groundwater may be encountered during construction, handling/disposing of the contaminated material will be in accordance with State, Federal, and local laws and rules.

## **3.7 Air Quality**

A portion of the City of Great Falls was *previously* designated non-attainment for carbon monoxide (CO). The non-attainment area was a linear corridor along 10<sup>th</sup> Avenue South between 2<sup>nd</sup> Street South and 54<sup>th</sup> Street South and was bound by 9<sup>th</sup> Avenue South (to the north) and 11<sup>th</sup> Avenue South (to the south). According to the DEQ, this non-attainment area was re-designated a maintenance area (i.e. attainment) in May 2002.

Each of the alignments of the Great Falls South Arterial project that are currently being considered are located south of the previously designated non-attainment area. Therefore, it is unlikely that further analyses related to CO (or a CO hot-spot analysis) will be required for this project.

An evaluation of mobile source air toxics (MSATs) will be required for the Great Falls South Arterial project. MSATs are compounds emitted from highway vehicles and off-road equipment which are known or suspected to cause cancer or other serious health and environmental effects.

### 3.8 Noise

The City of Great Falls and Cascade County should encourage land owners to develop projects that are compatible with the future highway. Noise compatible land use planning by the City of Great Falls and Cascade County would minimize noise impacts along the project corridor and save thousands of dollars in abatement costs.

The Great Falls South Arterial would be considered a Type I project since it is a new highway construction project at a new location. Therefore, if a federally funded project is forwarded a detailed noise analysis will be required. The detailed noise analysis will include measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes for each of the alignments being considered. Noise abatement measures will be considered for the project if noise levels *approach* or *substantially exceed* the noise abatement criteria (NAC) listed below in Table 5.

TABLE 5 – NOISE ABATEMENT CRITERIA (NAC)		
ACTIVITY CATEGORY	Leq(h) dBA	DESCRIPTION OF ACTIVITY CATEGORY
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

If traffic noise impacts are shown to exist on the project, a number of possible abatement measures may be considered, including but not limited to the following:

- Altering the horizontal or vertical alignment;

- Constructing noise barriers such as sound walls or earthen berms; and/or
- Decreasing traffic speed limits.

The noise abatement measures must be considered *reasonable* and *feasible* prior to implementation. In addition, greater than 50% of the affected residents must agree with the proposed noise abatement measures.

Lastly, construction of the Great Falls South Arterial may cause localized, short-duration noise impacts. These impacts can be minimized by using standard MDT specifications for the control of noise sources during construction.

## **4 Biological Resources**

Biological resources in the study area were identified using maps, aerial photographs, the endangered, threatened, proposed, and candidate species list for Montana counties (November 2007) from the USFWS, Montana Natural Heritage Program data, and windshield surveys of the project site. This limited survey is in no way intended to be a complete and accurate biological survey of the study area. A complete biological survey should be completed during project design. If projects are federally funded the biological survey of the study area will be done in accordance with accepted MDT practices during the NEPA/MEPA process.

### **4.1 Fish and Wildlife**

The Missouri River riparian and river habitats should be avoided to the greatest extent practicable. Fish and wildlife species use the Missouri River corridor during all life stages. Encroachment into the wetted width of the river and the associated riparian habitat should be limited to the absolute minimum necessary for the construction of the proposed project. A riparian corridor should remain on both sides of the river to facilitate wildlife movement along the river corridor. During project design, general fish and wildlife resources in the project area should be surveyed. FWP should be contacted for local expertise of the study area.

#### **4.1.1 Threatened and Endangered Species**

The federal list of endangered and threatened species is maintained by the USFWS. Species on this list receive protection under the Endangered Species Act (ESA). An ‘endangered’ species is one that is in danger of extinction throughout all or a significant portion of its range. A ‘threatened’ species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list.

The endangered, threatened, proposed, and candidate species list for Montana counties (November 2007) was downloaded from the USFWS website on November 8, 2007. This list generally identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed.

There are no endangered, threatened, proposed, or candidate animal species listed for Cascade County, and none are currently expected to occur in the project area. If federal aid projects are

forwarded from this study, an evaluation of potential impacts to all endangered, threatened, proposed, or candidate species will be done during the NEPA/MEPA process.

#### 4.1.2 Species of Concern

Montana Species of Concern are native animals breeding in the state that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution. Designation of a species as a Montana Animal Species of Concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to direct limited resources to priority data collection needs and address conservation needs proactively. Each species is assigned a state rank that ranges from S1 (greatest concern) to S5 (least concern). Other state ranks include SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). State ranks may be followed by modifiers, such as B (breeding) or N (non-breeding).

Table 6 lists the animal species of concern that the Montana Heritage Program has records of in Cascade County. The results of a data search by the Montana Natural Heritage Program reflect the current status of their data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. On-site surveys should be completed during project design.

**Table 6. Montana Animal Species of Concern Noted in Cascade County**

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Rank</u>
<i>Bufo cognatus</i>	Great Plains Toad	S2
<i>Spea bombifrons</i>	Plains Spadefoot	S3
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	S3B
<i>Plegadis chihi</i>	White-faced Ibis	S1B
<i>Haliaeetus leucocephalus</i>	Bald Eagle	S3
<i>Buteo swainsoni</i>	Swainson's Hawk	S3B
<i>Buteo regalis</i>	Ferruginous Hawk	S2B
<i>Falco peregrinus</i>	Peregrine Falcon	S2B
<i>Numenius americanus</i>	Long-billed Curlew	S2B
<i>Larus pipixcan</i>	Franklin's Gull	S3B
<i>Sterna hirundo</i>	Common Tern	S3B
<i>Chlidonias niger</i>	Black Tern	S3B
<i>Athene cunicularia</i>	Burrowing Owl	S2B
<i>Contopus cooperi</i>	Olive-sided Flycatcher	S3B
<i>Sialia sialis</i>	Eastern Bluebird	S2B
<i>Anthus spragueii</i>	Sprague's Pipit	S2B
<i>Spizella breweri</i>	Brewer's Sparrow	S2B
<i>Calamospiza melanocorys</i>	Lark Bunting	S3B
<i>Ammodramus bairdii</i>	Baird's Sparrow	S2B
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	S3B
<i>Calcarius mccownii</i>	McCown's Longspur	S2B

Calcarius ornatus	Chestnut-collared Longspur	S3B
Dolichonyx oryzivorus	Bobolink	S2B
Leucosticte atrata	Black Rosy-finch	S2
Oncorhynchus clarkii lewisi	Westslope Cutthroat Trout	S2
Cycleptus elongatus	Blue Sucker	S2S3
Sander canadensis	Sauger	S2
Sorex merriami	Merriam's Shrew	S3
Myotis thysanodes	Fringed Myotis	S3
Corynorhinus townsendii	Townsend's Big-eared Bat	S2
Cynomys ludovicianus	Black-tailed Prairie Dog	S3
Canis lupus	Gray Wolf	S3
Gulo gulo	Wolverine	S3
Lynx canadensis	Canada Lynx	S3
Phrynosoma hernandesi	Greater Short-horned Lizard	S3
Heterodon nasicus	Western Hog-nosed Snake	S2

Data from the Natural Heritage Program shows two animal species of concern in the study area, the Sprague's pipit and the plains spadefoot.

#### 4.1.3 Wildlife and Traffic Concerns

Coordination with the FWP Wildlife Biologist for the area should be completed during project design.

## 4.2 Vegetation

Native vegetation in the study area generally consists of wetlands and riparian forests along the Missouri River and Sand Coulee Creek. The remaining vegetation consists of cultivated crop land.

### 4.2.1 Threatened and Endangered Species

The federal list of endangered and threatened species is maintained by the USFWS. Species on this list receive protection under the ESA. An 'endangered' species is one that is in danger of extinction throughout all or a significant portion of its range. A 'threatened' species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list.

The endangered, threatened, proposed, and candidate plant species list for Montana counties (November 2007) was downloaded from the USFWS website on November 8, 2007. This list generally identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed.

There are no endangered, threatened, proposed, or candidate plant species listed for Cascade County, and none are currently expected to occur in the project area. For federal aid projects forwarded from this study, an evaluation of potential impacts to all endangered, threatened, proposed, or candidate species will be done during the NEPA/MEPA process.

#### 4.2.2 Species of Concern

Montana Species of Concern are native plants in the state that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution.

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

Table 7 lists the plant species of concern that the Montana Heritage Program has records of in Cascade County. The results of a data search by the Montana Natural Heritage Program reflect the current status of their data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. On-site surveys should be completed during project design.

**Table 7. Montana Plant Species of Concern Noted in Cascade County**

<b>Scientific Name</b>	<b>Common Name</b>	<b>State Rank</b>
<i>Entosthodon rubiginosus</i>	---	SH
<i>Funaria americana</i>	---	SH
<i>Cirsium longistylum</i>	Long-styled Thistle	S3
<i>Psilocarphus brevissimus</i>	Dwarf Woolly-heads	S1
<i>Chenopodium subglabrum</i>	Smooth Goosefoot	S1
<i>Elatine californica</i>	California Waterwort	SU
<i>Psoralea hypogaea</i>	Little Indian Breadroot	S2S3
<i>Phlox kelseyi</i> var. <i>missoulensis</i>	Missoula Phlox	S2
<i>Centunculus minimus</i>	Chaffweed	S2
<i>Bacopa rotundifolia</i>	Roundleaf Water-hyssop	S1
<i>Mimulus ringens</i>	Square-stem Monkeyflower	S1
<i>Carex crawei</i>	Crawe's Sedge	S2
<i>Carex sychnocephala</i>	Many-headed Sedge	S1
<i>Cyperus schweinitzii</i>	Schweinitz' Flatsedge	S2
<i>Eleocharis rostellata</i>	Beaked Spikerush	S2
<i>Juncus hallii</i>	Hall's Rush	S2
<i>Najas guadalupensis</i>	Guadalupe Water-nymph	S1
<i>Goodyera repens</i>	Northern Rattlesnake- plantain	S2S3
<i>Elymus innovatus</i>	Northern Wild-rye	S1

Data from the Natural Heritage Program shows several species of concern in the study area, including California waterwort, roundleaf water-hyssop, many-headed sedge, Guadalupe water-nymph, little Indian breadroot, chaffweed, and dwarf woolly-heads.

### **4.2.3 Noxious Weeds**

Noxious weeds degrade habitat, choke streams, crowd native plants, create fire hazards, poison and injure livestock and humans, and foul recreation sites. Areas with a history of disturbance are at particular risk of weed encroachment. There are 27 noxious weeds in Montana, as designated by the Montana Statewide Noxious Weed List. For projects forwarded from this study, the project area should be surveyed for noxious weeds.

To reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation, disturbed areas should be seeded with desirable plant species.

For projects forwarded from this study, construction methods must prevent the spread of noxious weeds. County Weed Control Supervisors should be contacted prior to any construction activities regarding specific measures for weed control.

## **5 Cultural Resources**

If projects forwarded from the study are federally-funded, MDT would need to conduct a cultural resource survey of the Area of Potential Effect for this project as specified in Section 106 of the National Historic Preservation Act (36 CFR 800). Section 106 requires Federal agencies to “take into account the effects of their undertakings on historic properties.” The purpose of the Section 106 process is to identify historic properties that could be affected by the undertaking, assess the effects of the project and investigate methods to avoid, minimize or mitigate any adverse effects on historic properties.

MDT staff conducted a windshield survey and Cultural Resources Information System (CRIS) file search of the general area encompassing the Great Falls South Arterial in the Spring of 2007. The survey revealed the presence of seven historic properties within the South Arterial corridor. Two of the properties are listed in or eligible for listing on the National Register of Historic Places: the Great Falls Portage National Historic Landmark (24CA238) and the Great Northern Railway’s Stockett Spur (24CA632). The remaining five properties have not been evaluated in regards to National Register of Historic Places eligibility. The criteria for eligibility and/or listing on the National Register are as follows:

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of significant persons in our past; or

- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded or may be likely to yield, information important in history prehistory.”

In addition to the above criteria, there are seven Criteria Considerations under which an historic property can be evaluated for the National Register. In this case of the four of the unrecorded sites, they would need to be evaluated under Criteria Consideration D: Cemeteries, which states:

“A cemetery is eligible if it derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.”

The five unrecorded historic properties are: the Ayrshire Dairy, Highland Cemetery, Calvary Cemetery, Mount Olivet Cemetery, and the Hebrew Cemetery (Table 9).

### **5.1 Great Falls Portage National Historic Landmark (24CA238)**

Great Falls Portage National Historic Landmark (NHL) was listed in the National Register of Historic Places on May 23, 1966. The NHL is undeveloped and is roughly located between US Highway 89/Tenth Avenue South on the north and the Missouri River along Lower River Drive to the southwest. Other than a few physical features mentioned by Meriwether Lewis and William Clark in 1805, the boundary for the NHL delineated for the NHL in 1966 is somewhat vague, but there is an on-going project by the Montana Preservation Alliance and local interest groups to define the boundaries.

### **5.2 Existing Great Falls South Arterial Corridor**

Table 8 identifies properties listed on or previously identified as eligible for the NRHP in previous studies.

**Table 8. NRHP Eligible Historic Properties Within or Adjacent to the Corridor**

Name	NRHP Status
Great Northern Railway’s Stockett Spur (24CA632)	Eligible under Criterion A

Table 9 shows the results of a windshield survey conducted in the spring of 2007 that identified the following historic properties within the Great Falls South Arterial corridor. They have not yet been recorded and evaluated for the NRHP.

**Table 9. Historic Properties Observed in the Project Corridor**

Location	Name
4510 13 <sup>th</sup> Street South	Ayrshire Dairy
2010 33 <sup>rd</sup> Avenue South	Highland Cemetery

2101 26 <sup>th</sup> Street South	Mount Olivet Cemetery
SW of Highland Cemetery	Calvary Cemetery
40 <sup>th</sup> Avenue South & Eaton Avenue	Hebrew Cemetery

Once the project corridor is better defined, the MDT will conduct a cultural resource survey for unrecorded historic properties within the Area of Potential Effect.

## 6 Utilities

The following GIS-based utility information was reviewed in the study corridor:

- Electricity;
- Public water supplies;
- Wastewater; and
- Telecommunications.

### 6.1 Existing Great Falls South Arterial Corridor

Utilities in the Great Falls South Arterial Corridor area include electricity, public water supplies, wastewater, and telecommunications. A summary of utilities identified from GIS-based information in the existing Great Falls South Arterial Corridor is presented in Table 10. Because of their abundance, public water supplies were not summarized individually in the table. Numerous public water supplies exist in the project area. See Appendix E for a list of public water supplies located in Cascade County. Petroleum pipelines and mine sites also exist in the Great Falls South Arterial Corridor project area.

**Table 10. Utilities in the Great Falls South Arterial Corridor**

Utility	Location
Electricity	Electrical utility services are provided throughout the project area.
Wastewater	Wastewater services are provided throughout the project area.
Telecommunications	Service in the project area is provided by a network of aerial and buried cables.

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Appendix A:

Appendix B:  
Intermountain Seismicity Belt Map

Appendix C:  
Alluvium geologic map

Appendix D:  
Great Falls 2007 Drinking Water Consumer Confidence Report

Appendix E:  
Public Water Supplies located in Cascade County