

ENVIRONMENTAL SCAN

Maclay Bridge Planning Study

DRAFT



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Helena, Montana



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ABBREVIATIONS / ACRONYMS

APE	Area of Potential Effect
ARM	Administrative Rules of Montana
BTCH	Bull Trout Critical Habitat
CAA	Clean Air Act
CAPS	Crucial Areas Planning System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COE	U.S. Army Corps of Engineers
CRABS	Cultural Resource Annotated Bibliography System
CRIS	Cultural Resource Information System
CWA	Clean Water Act
DFIRM	Digital Flood Insurance Rate Map
DNRC	Department of Natural Resources and Conservation
DOI	U.S. Department of the Interior
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
FAS	Fishing Access Site
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
GWIC	Groundwater Information Center
HUC	Hydrologic Unit Code
IBA	Important Bird Area (National Audubon Society)
LRTP	Long Range Transportation Plan
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Funds
MAAQTS	Montana Ambient Air Quality Standards
MBTA	Migratory Bird Treaty Act
MCA	Montana Code Annotated

MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFISH	Montana Fisheries Information Database
MFWP	Montana Department of Fish, Wildlife, and Parks
MNHP	Montana Natural Heritage Program
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System
NWI	National Wetlands Inventory
OPG	Missoula Office of Planning and Grants
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
TIP	Transportation Improvement Plan
TMDL	Total Maximum Daily Load
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
Section 4(f)	Section 4(f) of the 1966 Department of Transportation Act
Section 6(f)	Section 6(f) of the National Land and Water Conservation Funds Act

ENVIRONMENTAL SCAN

1.0 INTRODUCTION

Missoula County, in partnership with the Montana Department of Transportation (MDT) and Federal Highway Administration (FHWA), have initiated the *Maclay Bridge Planning Study* to determine potential needs of the Maclay Bridge and connecting roadways within the area. The Maclay Bridge crosses the Bitterroot River approximately 2.75 miles west of Reserve Street via North Avenue. North Avenue connects to the existing bridge as the eastern approach, and River Pines Road serves as its western approach. The Maclay Bridge Planning Study is a planning-level study and is not a design, maintenance, or construction project.

The planning study will identify feasible improvement options, if any, to address safety, geometric and environmental concerns based on needs of the Maclay Bridge and connecting roadways presented by the community, study partners, resource agencies, and other interested parties. The study will feed into any future Pre-National Environmental Policy Act (NEPA) / Montana Environmental Policy Act (MEPA) process if a project is forwarded from the study based on need and funding availability.

1.1. BACKGROUND

The primary objective of this Environmental Scan Report is to identify the existing environmental resources and conditions within the Environmental Scan Area that may be potentially affected by transportation-related improvements or that may influence the identification of improvement options associated for the *Maclay Bridge Planning Study*. The Environmental Scan Area encompasses a 4.5 square-mile area at the west edge of the City of Missoula adjoining the Bitterroot and Clark Fork Rivers. As a planning level scan, the information is obtained from various reports, websites and other documentation. This scan is not a detailed environmental investigation.

1.2. PREVIOUS ENVIRONMENTAL REVIEW

In 1994, an Environmental Assessment (EA) for the *Maclay Bridge Site Selection Study* was completed to define the purpose and need for a project at Maclay Bridge, identify potential alternatives, and assess impacts of the various alternatives identified to address the project's purpose and need. A total of 16 alternatives were evaluated in the EA. This includes the "No Build" alternative, two alternatives that included bridge rehabilitation or bridge replacement (one-lane structure) at its current location, and numerous alternatives that would provide a new bridge elsewhere. Through a screening process, four alternatives were advanced for further consideration and a "Preferred Alternative" was identified. The Preferred Alternative was described in the EA as follows:

"A new two-lane (one lane for each direction of traffic) bridge constructed over the Bitterroot River which connects River Pines Road on the west side to South Avenue West on the east side. The Preferred Alternative includes increasing the number of lanes on the bridge from one lane (existing) to two lanes (proposed). The bridge cross section includes adequate shoulders for bicycle travel and a separated pedestrian walkway."

Upon completion of the 1994 EA, a *Finding of No Significant Impact (FONSI)* was not issued by FHWA and the Preferred Alternative from the EA was not advanced due to lack of funding and public sentiment. Missoula County was unsuccessful in obtaining the special project demonstration funds from Congress it was pursuing at the time. The Maclay Bridge replacement project was inactive until the County

nominated it for funding as an off-system bridge project in 2002. While the project has moved up the list of priorities for use of this funding, a potential construction date has not been determined.

Minor maintenance activities have been performed on the bridge at various times since the completion of the *Maclay Bridge EA*. However, many of the underlying issues previously identified as deficiencies (and reasons for proposing transportation improvements) in the 1994 EA remain. This, coupled with the community's heightened interest in transportation-related planning at this location in recent years, served as the reason for initiating the *Maclay Bridge Planning Study*.

1.3. ORGANIZATION OF REPORT

This report describes the geographic/environmental setting of the identified Environmental Scan Area. The document begins with a discussion of the geographic setting of the Environmental Scan Area (Section 2) and continues with descriptions of existing physical resources (Section 3), visual resources (Section 4), biological resources (Section 5), and cultural and archaeological resources (Section 6). The Scan concludes with a discussion of demographics and other socio-economic information for the Environmental Scan Area in Section 7. A list of tables and appendices is on page ii. A list of abbreviations and acronyms used in the Environmental Scan can be found on pages iii-iv.

1.4. ENVIRONMENTAL SCAN AREA

The Environmental Scan Area was established to include areas most likely to be affected by the possible replacement, upgrading, or reconstruction of the Maclay Bridge. The 1994 *Maclay Bridge EA* identified a number of alternative options for the Maclay Bridge. The Environmental Scan Area was established to encompass the areas potentially affected by the alternative options considered in the previous EA. The Environmental Scan Area does not match the study area established for the 1994 EA.

The Environmental Scan Area and adjoining lands are shown in **Figure 1**.

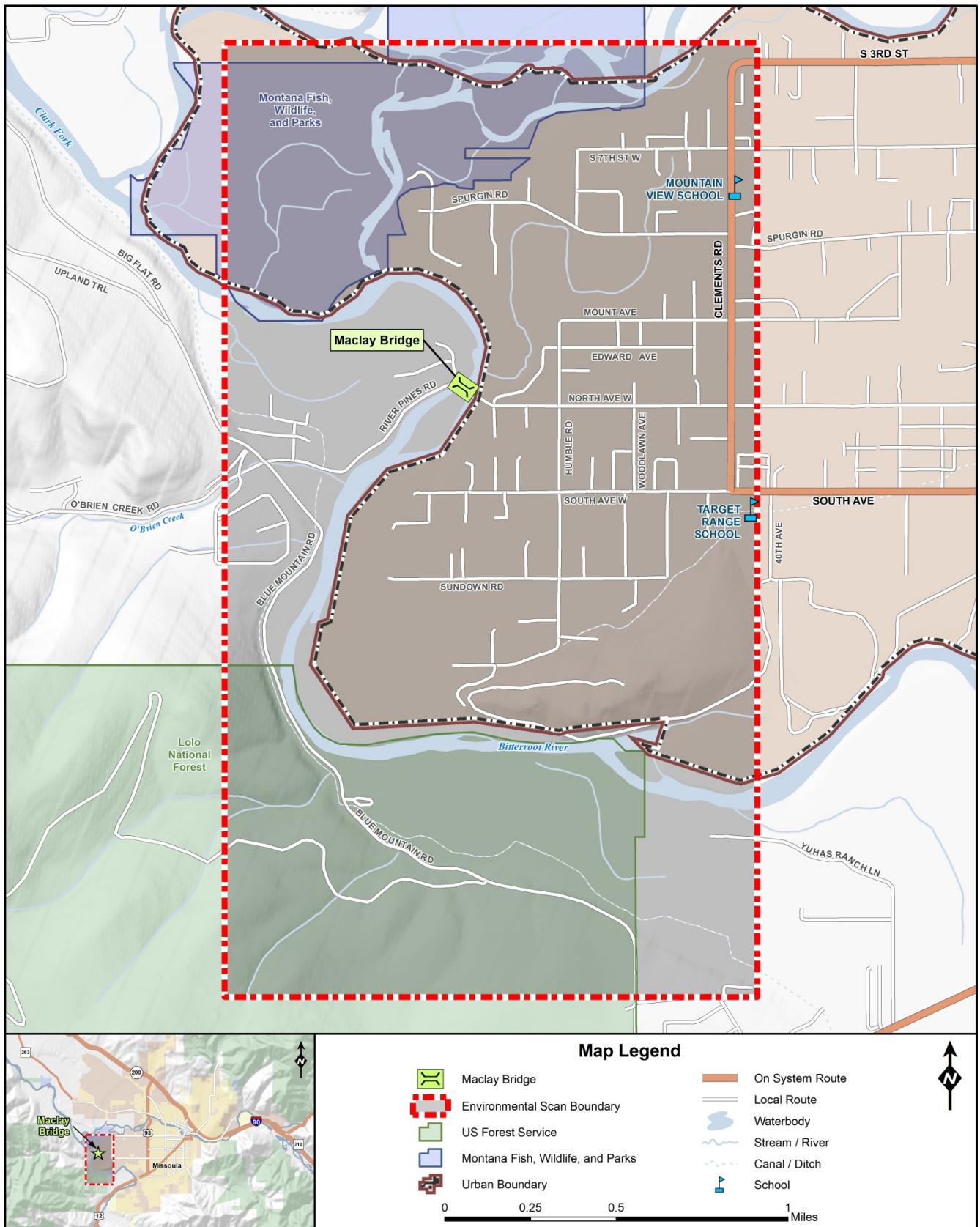


Figure 1: Environmental Scan Area

2.0 GEOGRAPHIC SETTING

The Environmental Scan Area is located at the western end of the Missoula Valley at the confluence of the Clark Fork and Bitterroot Rivers and encompasses lands in both the City of Missoula and Missoula County, Montana. The topography east of the Bitterroot River is generally level, while the area west of the Bitterroot River is comprised of foothills for the Bitterroot Mountains. Surface elevations over most of the area average about 3,120 feet above sea level with elevations exceeding 3,500 feet in the McCauley Butte area and in foothill areas at the west edge of the Environmental Scan Area.

The Environmental Scan Area, east of the Bitterroot is served by a network of local roads and streets, most notably, Spurgin Road, Mount Avenue, North Avenue, South Avenue, Sundown Road, Humble Road, and Clements Road east of the Bitterroot River. Other notable roads in the area include Big Flat Road, O'Brien Creek Road, and River Pines Road (all west of the Bitterroot River) and Blue Mountain Road. Clements Road (U-8101), South Avenue east of Clements Road (U-8120), and South 3rd Avenue east of Clements Road (U-8102) are Urban Routes within the Missoula Urban Area. These streets are functionally classified as Minor Arterials. South 7th Street West and Spurgin Road east of Clements Road are designated as Urban Collectors. This same designation is applied to North Avenue (between Clements Road and the Maclay Bridge), South Avenue (between Humble and Clements Roads), and Humble Road (between North and South Avenues). Blue Mountain Road and Big Flat Road are functionally classified as a Rural Major Collectors. Please refer to **Figure 1** for the location of these roadways within the Environmental Scan Area.

The Environmental Scan Area contains low-density residential properties interspersed with agricultural operations, open space, wildlife habitat and vacant lots. Open space includes conservation lands protected under easement by the Five Valleys Land Trust and park or recreation lands owned by the State of Montana, Missoula County, or the City of Missoula. McCauley Butte, Maclay Flats, the Bitterroot and Clark Fork River and their associated riparian areas, Lolo National Forest lands, and privately-held forested lands north and south of O'Brien Creek comprise major areas of open space within the Environmental Scan Area.

A USGS topographic map (**Figure 2**) and an aerial photograph (**Figure 3**) encompassing the Environmental Scan Area have been provided to help illustrate various geographic features and depict forested, riverine and open areas.

2.1. LAND OWNERSHIP AND LAND MANAGEMENT

Most of the lands in the Environmental Scan Area are privately owned except for parcels of Montana Fish Wildlife & Parks (MFWP) located near the confluence of the Clark Fork and Bitterroot Rivers, isolated County-owned parcels, and lands in the southwestern portion of the Environmental Scan Area associated with the Lolo National Forest.

The MFWP developed the Kelly Island Fishing Access Site (FAS) on its 666-acre parcel and manages the property for public recreation and wildlife and fisheries habitat.

According to the *Lolo National Forest Plan* (February 1986), U.S. Forest Service (USFS) lands in the Environmental Scan Area fall within the Missoula Ranger District and are managed for concentrated public use and dispersed recreation opportunities. The administrators of the Bitterroot National Forest are revising their land management plan to reflect new scientific information and natural and social changes that have occurred since the 1986 *Forest Plan* was prepared. Preliminary documents for the *Forest Plan* revision show these Lolo Forest lands may be designated as "Management Area 6.1— High Use Recreation Complexes or Use Areas."

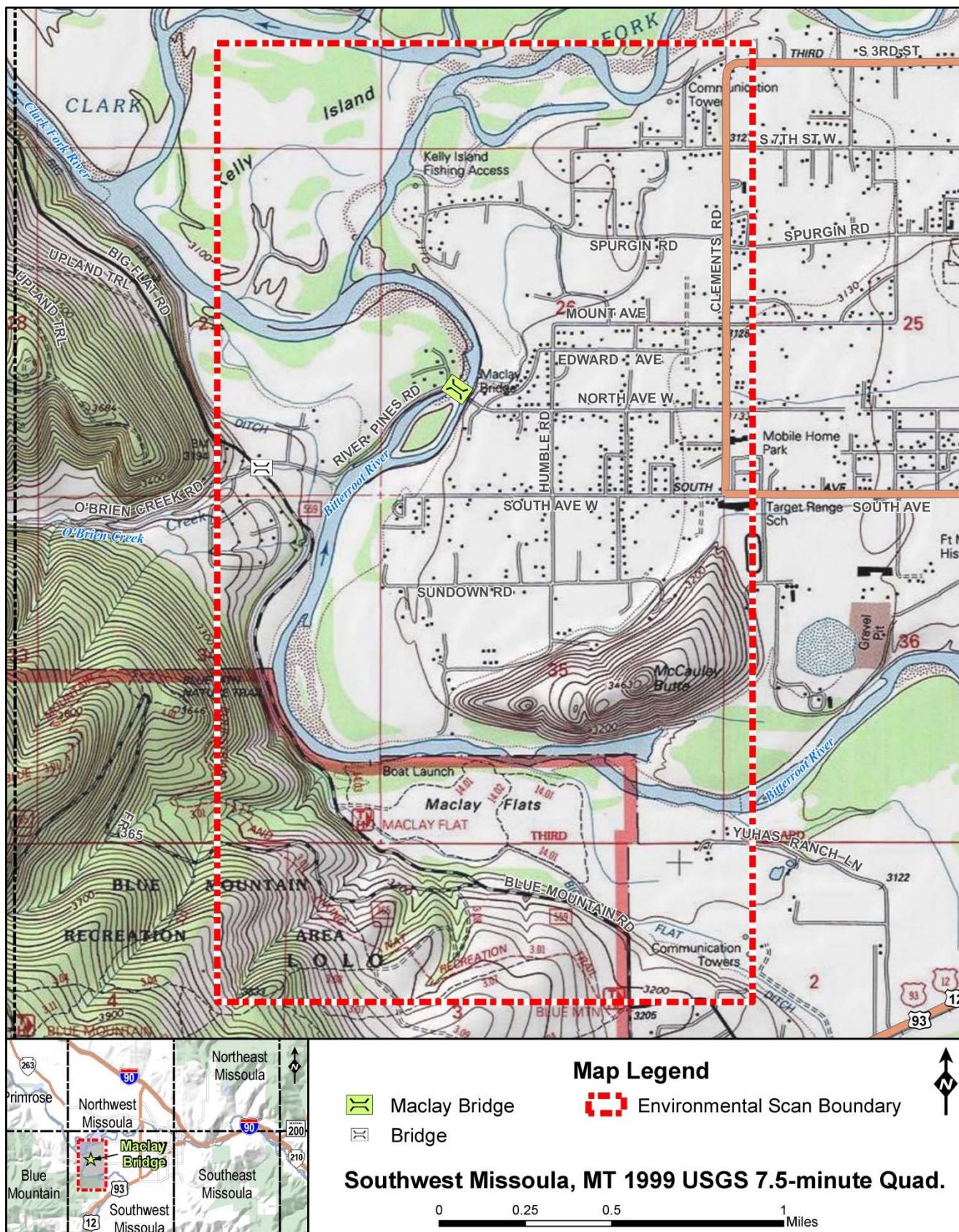


Figure 2: USGS Topographic Map for the Environmental Scan Area

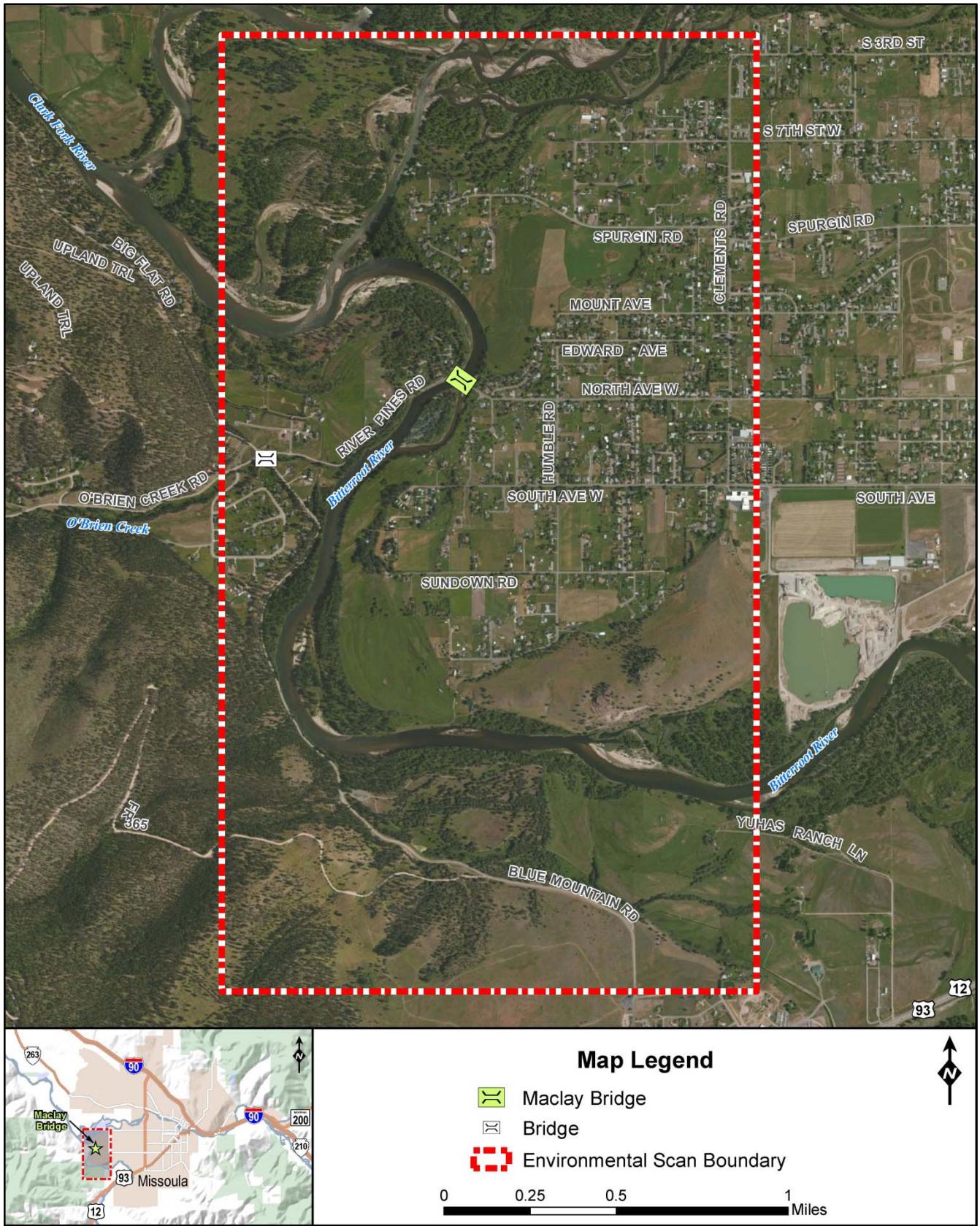


Figure 3: Aerial Photograph of the Environmental Scan Area

USFS mapping indicates these forest lands are part of the Blue Mountain Recreation Area. **Figure 4** shows the MFWP and Lolo National Forest lands in the area as well as private lands along the Bitterroot River where the Five Valleys Land Trust holds conservation easements.

2.2. LAND USE

The majority of the Environmental Scan Area east of the Bitterroot River is considered to be part of Missoula's Target Range neighborhood. The *Target Range Neighborhood Plan*, developed by area residents with assistance from the Missoula Office of Planning and Grants (OPG), describes the neighborhood as a semi-rural area on the western edge of the city of Missoula which has a primary land use of residential properties on one-half acre or larger parcels. The residential lands within the Environmental Scan Area have seen slow but steady growth in recent decades.

With the exception of a convenience store and gas station and a mini-warehouse storage unit, the area has few commercial uses. Two schools—Target Range School (near the intersection of Clements Road and South Avenue) and Mountain View Elementary School (east of Clements Road between South 7th Street and Spurgin Road)—are located within the Environmental Scan Area, near its eastern boundary.

The area also contains agricultural uses on irrigated lands ranging in size from one acre to 50 acres. Hay is the most widespread crop raised in the area but there are also numerous small market-gardens and greenhouses found in this portion of the Missoula Valley. As noted earlier, considerable open space exists in the Environmental Scan Area primarily along the Bitterroot and Clark Fork River floodplains and on Lolo National Forest lands.

Figure 5 presents a land use map illustrating development patterns within the Environmental Scan Area.

Land use planning within the Environmental Scan Area is guided by several plans including the *Target Range Neighborhood Plan*, the *Missoula Urban Area Comprehensive Plan* (adopted in 1998), and the *Missoula County Growth Policy, 2005 Update* (amended in March 2010). Areas outside the designated *Target Range Neighborhood Plan* boundary are governed by the *Comprehensive Plan* and the *Growth Policy*. Land uses within the area are regulated by local zoning ordinances. The area is generally zoned for residential uses and includes Open Space and Resource zoning districts that permit low density residential development.

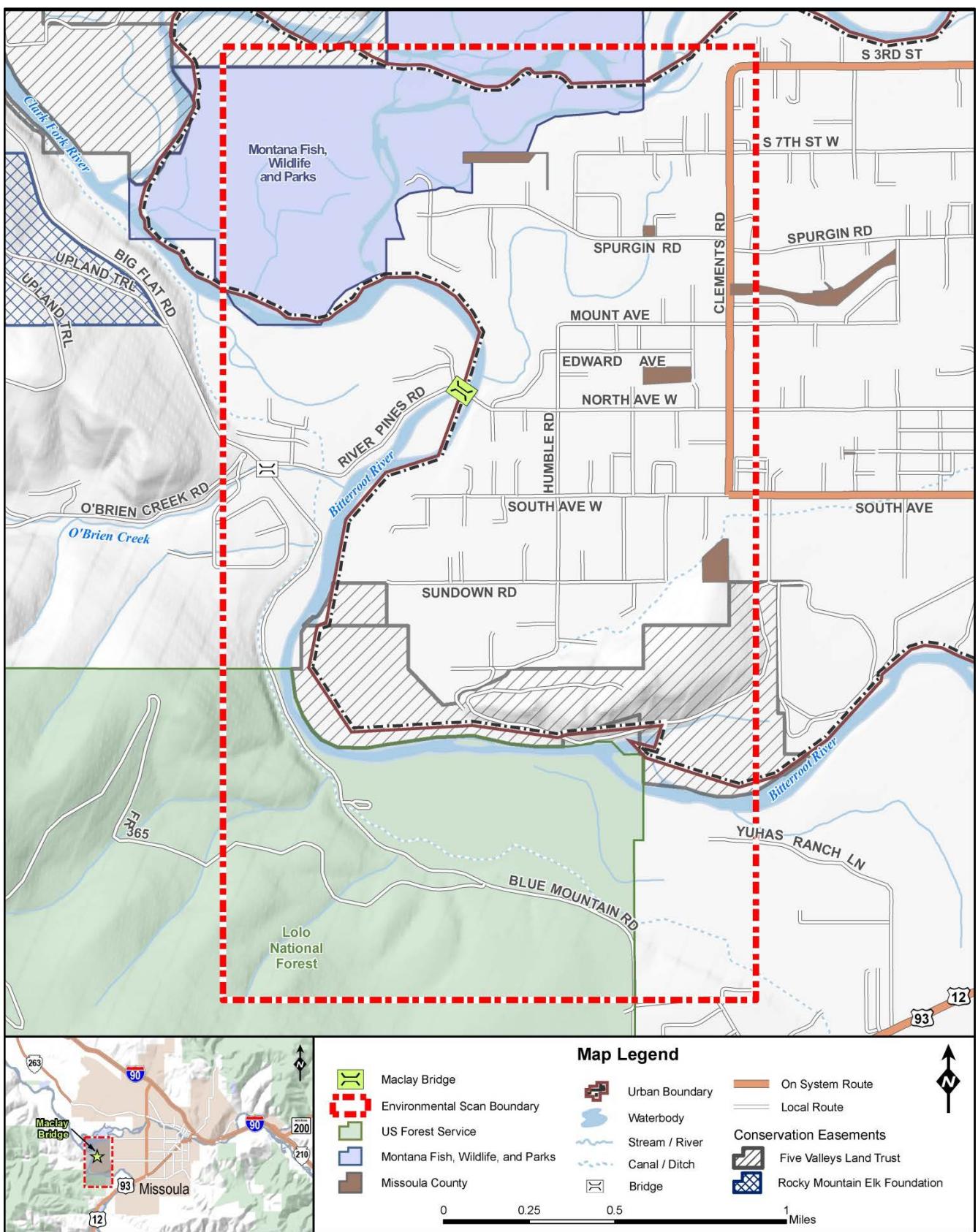


Figure 4: Land Ownership and Conservation Easements in the Environmental Scan Area

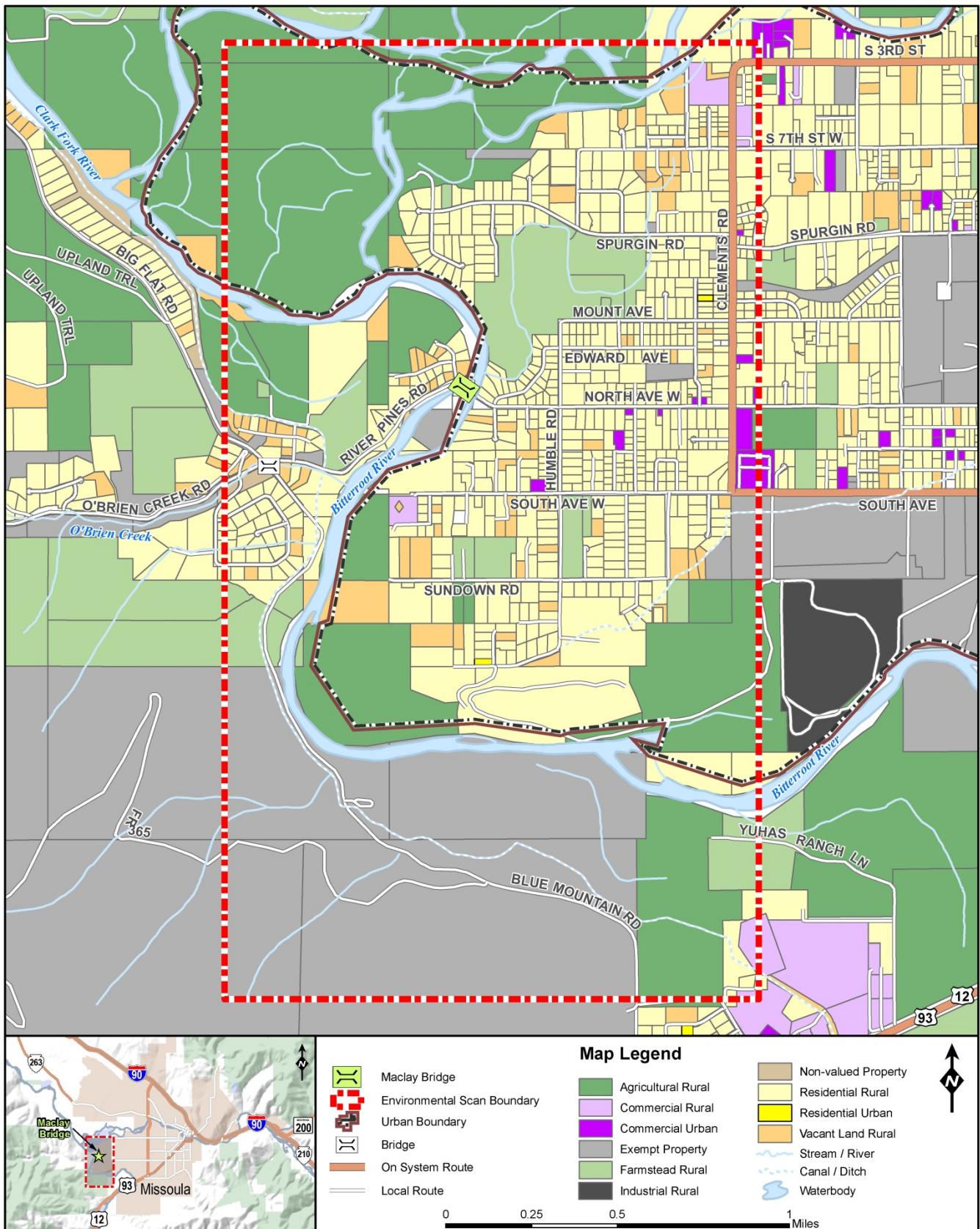


Figure 5: Land Use within the Environmental Scan Area

3.0 PHYSICAL RESOURCES

3.1. GEOLOGIC RESOURCES

Mapping produced by the Montana Bureau of Mines and Geology identifies geologic features of the Environmental Scan Area.

The majority of the Environmental Scan Area contains alluvial materials associated with modern channels and floodplains (Qal) and alluvial terrace deposits (Qat) along the Bitterroot and Clark Fork Rivers and alluvial material associated with O'Brien Creek (Qao). An area of glacial lake deposits (Qgl) and McCauley Butte, a distinctive plug of volcanic bedrock associated with the Bonner and Mt. Shields Formations (Ybo and Yms3), are present in the extreme southern portion of the area. Geologic maps indicate faulting is present in the McCauley Butte area. The foothills and mountains west of the Bitterroot River are also comprised of Precambrian rocks of the Belt group associated with the Bonner, Mt. Shields (Yms2), Snowslip (Ysn) and Shepard (Ysh) Formations and form the bedrock under much of the Environmental Scan Area.

Figure 6 shows a portion of the Missoula West geologic map encompassing the Environmental Scan Area.

3.2. SOILS AND PRIME FARMLAND

The *Farmland Policy Protection Act* (FPPA) (7 U.S.C. 4201 et. seq.) requires special consideration be given to soils considered as prime farmland, unique farmland, or farmland of statewide or local importance by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses.

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. Since most of the Environmental Scan Area is already developed, the FPPA would not apply to lands within Missoula's designated urban area.

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.

Information about prime or unique farmlands or farmland of statewide or local importance in the Environmental Scan Area was obtained by accessing the Web Soil Survey (WSS), an online resource for soil maps, provided by the NRCS. The following soil map units within the Environmental Scan Area were classified as farmland by the NRCS:

- | | |
|---|------------------------------|
| • Bigarm gravelly loam, 0 to 4 percent slopes | Prime farmland if irrigated |
| • Desmet loam, 0 to 2 percent slopes | Prime farmland if irrigated |
| • Grantsdale loam, 0 to 2 percent slopes | Prime farmland if irrigated |
| • Moiese gravelly loam, 0 to 2 percent slopes | Farmland of local importance |

Please see **Figure 7** for the location of soils meeting these classifications. The majority of the surface soils in the Environmental Scan Area are deep, dark-colored loams and silt loams.

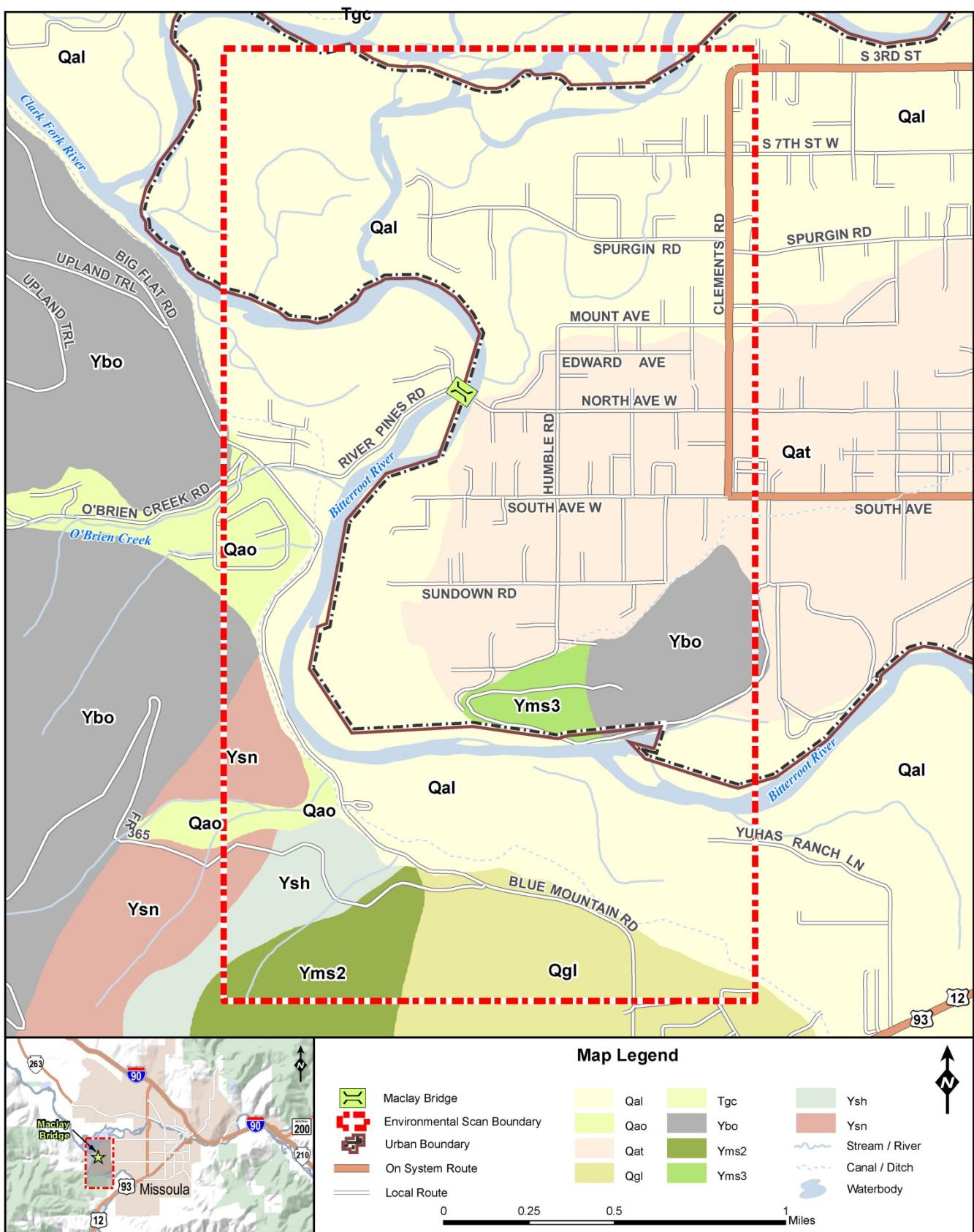


Figure 6: Geology of the Environmental Scan Area

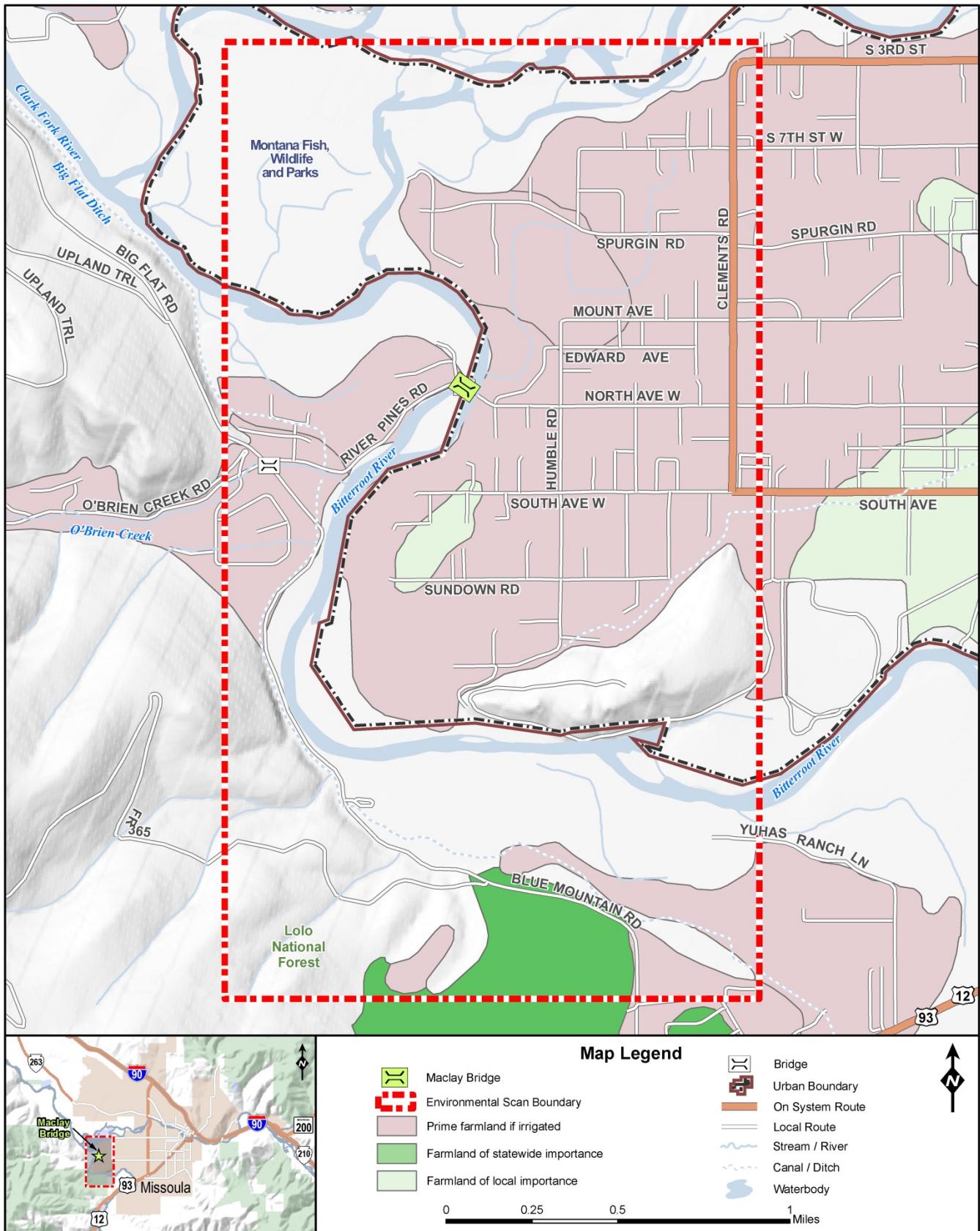


Figure 7: Soil Resources in the Environmental Scan Area

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use. The NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of Federally-funded and assisted projects. The assessment is completed using the Farmland Conversion Impact Rating Form (form AD-1006) for specific locations or the CPA-106 Farmland Conversion Impact Rating Form for Linear Projects.

If a project is advanced using federal or state funds, coordination with the NRCS will be required to determine if the FPPA applies and necessary NRCS processing requirements. Projects planned and completed without the assistance of a Federal agency are not subject to the FPPA.

3.3. WATER RESOURCES

3.3.1. Surface Water Resources and Quality

Surface Water Resources. The Environmental Scan Area includes three surface waters—the Bitterroot River, the Clark Fork River, and O'Brien Creek. The Bitterroot River flows west and northward through the Environmental Scan Area for about 3.7 miles before joining the Clark Fork River. The Bitterroot River drains approximately 3,700 square miles of area south of Missoula. The Bitterroot River Watershed (HUC #17010205) is located between the Bitterroot Mountains to the west of the stream and the Sapphire Mountains to the southeast. Within the Environmental Scan Area, the Bitterroot River has characteristics of a low-gradient meandering stream with well developed sand and cobble bars, steep cut banks, and some braiding.

The Clark Fork River, located at the northern edge of the Environmental Scan Area, is the major drainage feature within Missoula County and is an important tributary of the Upper Columbia River. The Clark Fork River drains about 22,000 square miles of terrain and extends some 320 miles from Butte to Lake Pend Oreille in Idaho. Downstream of its confluence with the Bitterroot, the Clark Fork becomes wider and slower than in its upper reaches. This reach of the Clark Fork is part of the Middle Clark Fork Watershed (HUC #17010204).

O'Brien Creek is a small stream that joins the Bitterroot River in the western portion of the Environmental Scan Area. The stream extends westward for about 6 miles and drains private lands and lands within Lolo National Forest. The foothill areas west of the Bitterroot River are also dissected by numerous intermittent or ephemeral tributaries.

Figure 8 shows surface waters within the Environmental Scan Area.

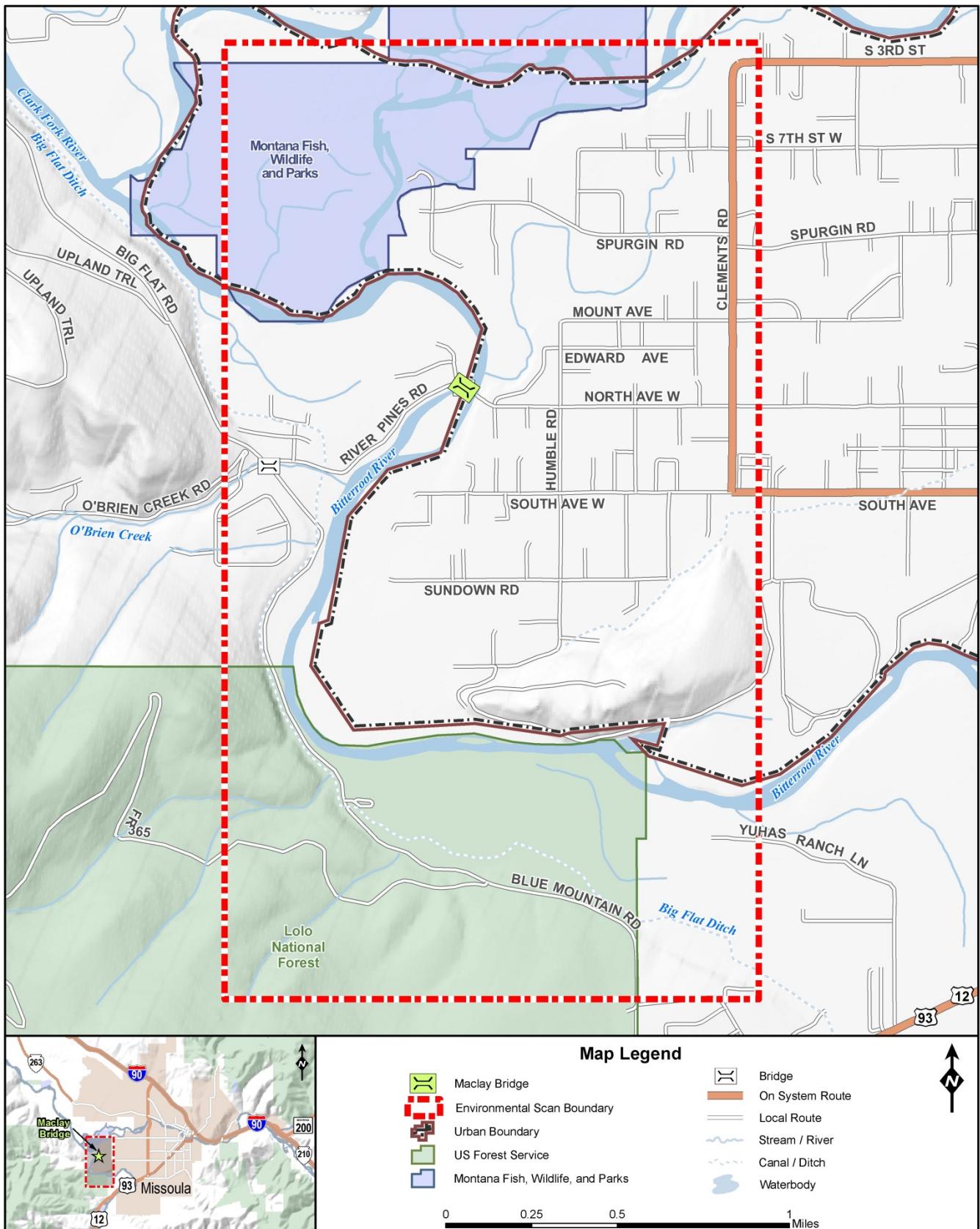


Figure 8: Surface Water Resources in the Environmental Scan Area

Surface Water Quality. Water quality problems exist in the Bitterroot and Clark Fork Rivers and both surface waters have been classified as impaired for one or more beneficial uses according to the 2012 *Water Quality Integrated Report for Montana* and the current 303(d) List maintained by the Montana Department of Environmental Quality (MDEQ). Sources of the water quality problems within the watersheds of these two rivers include mining, grazing and agricultural activities, storm water discharge, septic systems, and wastewater treatment plant discharges.

The MDEQ has identified the following primary cause groups as impairments to water quality in the Bitterroot River: nutrients (nitrogen and phosphorus), siltation/sediment, and thermal modification (temperature). The MDEQ is in the process of developing a Total Maximum Daily Load (TMDL) specifying the pollutant load reductions needed to bring the Bitterroot River into compliance with all water quality standards. TMDLs have been developed for other portions of the watershed including the Bitterroot Headwaters and Upper Lolo Creek planning areas.

Nutrients have been a long-standing concern on the Clark Fork River and a TMDL, known as the Voluntary Nutrient Reduction Program, has been established to help control nutrient pollution. Other TMDLs for the Clark Fork River system are in the process of being developed.

Should a project be advanced, it will be necessary to consider the potential impacts resulting from drainage off the existing or new bridge deck. Where practicable, measures to divert runoff from the bridge deck and detain/retain it before discharge may need to be incorporated into the project.

3.3.2. Irrigation Features

The Environmental Scan Area contains irrigation features and infrastructure associated with the Big Flat Irrigation District and the Missoula Irrigation District. **Figure 8** shows the locations of notable canals and ditches within the area.

The Big Flat Irrigation District is located about 7 miles west of the city of Missoula and encompasses lands parallel and adjacent to the Clark Fork River. Water is diverted from the Bitterroot River southwest of Missoula into the Big Flat Ditch located in the southwestern portion of the Environmental Scan Area. The Big Flat Ditch is located west of the Bitterroot River and is crossed by River Pines Road and Big Flat Road. Facilities associated with the Big Flat Irrigation District were developed as a unit of the U.S. Department of Reclamation's Missoula Valley Project and were constructed in the late 1940s.

The portion of the Environmental Scan Area east of the Bitterroot River contains an extensive ditch system maintained by the Missoula Irrigation District. The ditch system is based on Clark Fork River water diverted near the downtown area. Maps show Missoula Irrigation District ditches are present along or cross many area roadways including North and South Avenues, Humble Road, and Clements Road. **Appendix A** contains a map showing the locations of irrigation ditches within the Environmental Scan Area. Irrigation ditches with a continuous surface water connection to a navigable or non-navigable tributary may be subject to jurisdiction by the U.S. Army Corps of Engineers (COE).

3.3.3. Groundwater Resources and Quality

Groundwater Resources. The Missoula Valley is underlain by alluvial fill materials, glacial deposits, and the sediments from ancient Glacial Lake Missoula which once inundated the entire area. The Missoula aquifer is a shallow unconfined aquifer formed in coarse alluvial material (sands and gravels) extending from the Clark Fork River at Hellgate Canyon westward across the valley to the Bitterroot River. The saturated portion of the aquifer averages eighty feet in thickness, and the depth below the surface to water (static water level) varies from ten to forty feet throughout the valley.

The records maintained by the Groundwater Information Center (GWIC) at the Montana Bureau of Mines and Geology show that well depths vary by individual location but the majority of the wells drilled in the Environmental Scan Area range from 80 to 160 feet. Static water levels on lands east of the Bitterroot River and south of the Clark Fork River averaged about 26 feet based on data from more than 700 well records. South of the Bitterroot River, static water levels averaged around 60 feet based on information from more than 100 well records. **Figure 9** shows the locations of public water supply and domestic wells in the area.

Within this portion of the Missoula Valley, wastewater is generally treated using individual, residential, on-site wastewater treatment systems (septic systems). Information reviewed from the Target Range Neighborhood Plan shows individual residential septic systems are prevalent within much of the Environmental Scan Area.

Groundwater Quality. Most of the urban area population, including many residents of the Environmental Scan Area, relies upon the Missoula aquifer for water. Groundwater quality is generally good in the Missoula Valley. However, due to the shallow depth to groundwater and highly-permeable soils and aquifer materials in many areas, the Missoula aquifer is considered sensitive to degradation. These conditions resulted in the Missoula aquifer being designated as a Sole Source Aquifer by the U.S. Environmental Protection Agency (EPA) in 1988. Following this designation, the Missoula Valley Water Quality District was formed by joint resolution of the Board of County Commissioners and City Council in 1993. An Aquifer Protection Ordinance—administered by the Water Quality District—was also adopted by the City Council with the Board of County Commissioners concurrence in 1994.

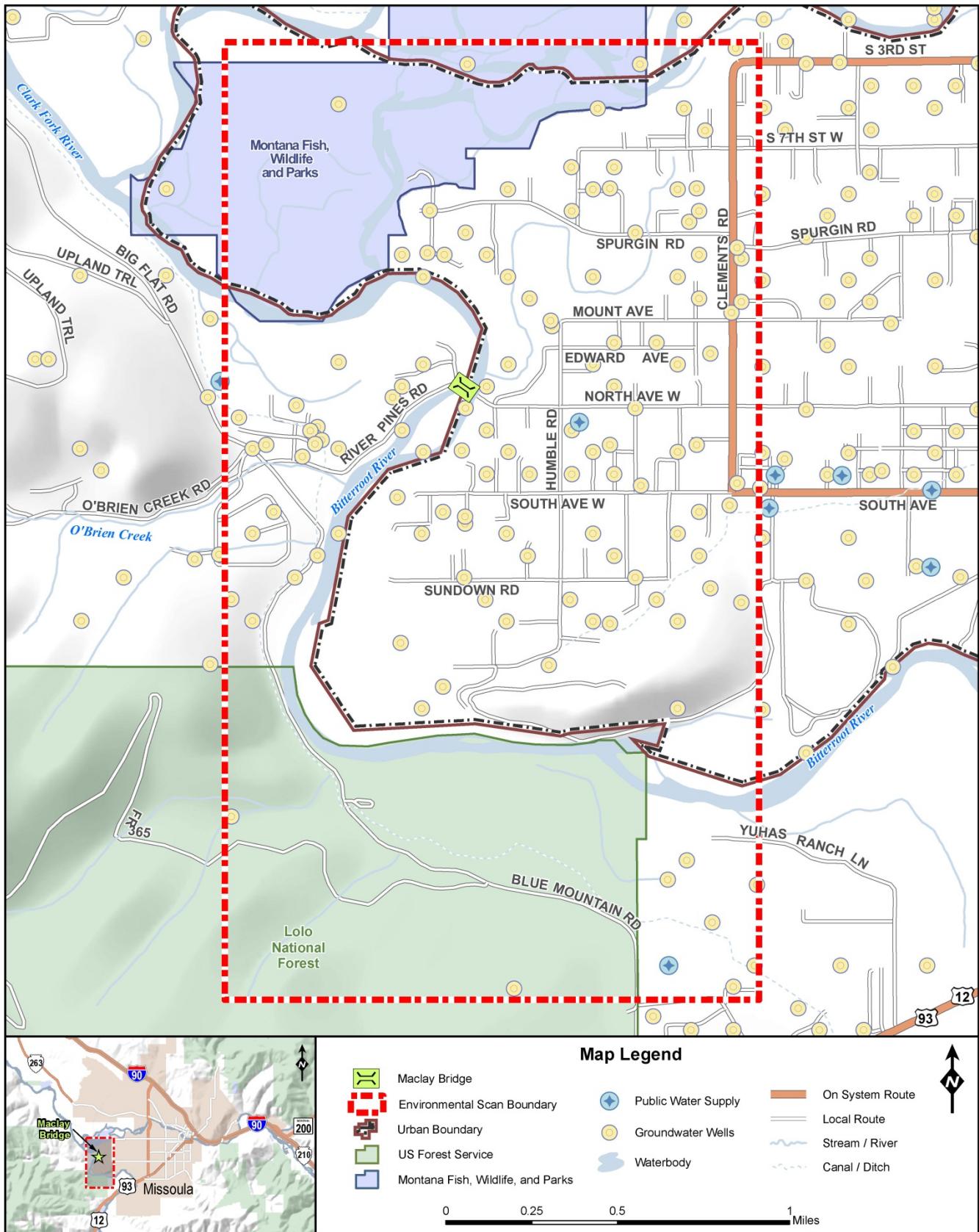


Figure 9: Public Water Supplies and Domestic Wells in the Environmental Scan Area

3.4. WETLANDS

Wetlands are lands on which water covers the soil or is present either at or near the surface of the soil or within the root zone, all year or for varying periods of time during the year, including during the growing season. 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 be identified by the existence of plants adapted to life in the soils that form under flooded or saturated conditions characteristic of wetlands. Wetlands include marshes, bogs, the shallow portions and shorelines of lakes, ponds, and reservoirs, and the floodplain and shoreline of streams.

The following definition of wetland is the regulatory definition used by the EPA and the COE:

"Those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas" (40 CFR 232.2(r)).

Jurisdictional wetlands—those that are regulated by the COE under Section 404 of the Clean Water Act—must exhibit all three characteristics: wetland hydrology, hydrophytic vegetation, and hydric soils.

The U.S. Fish and Wildlife Service (USFWS) is the principal federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has compiled mapping to show wetlands and deepwater habitats in the US including many parts of Montana and has made this mapping available through access to the National Wetland Inventory (NWI). NWI wetlands are identified in general accordance with USFWS's publication *Classification of Wetlands and Deep Water Habitats of the United States* (Cowardin et al., 1979). It should be noted that NWI maps do not define wetlands for regulatory purposes since the wetlands are identified through aerial photo interpretation. The NWI definition of wetlands is broader than the regulatory definition used by the COE in that it only requires one or more of the three attributes of wetlands (wetland hydrology, vegetation, or soils) be present to be a wetland.

NWI mapping for the Environmental Scan Area is presented in **Figure 10**. The mapping for the Environmental Scan Area shows most wetland sites are riverine wetlands associated with the Bitterroot and Clark Fork Rivers. Riverine systems includes all wetlands and deepwater habitats contained within a channel where water is usually, but not always, flowing. Within each of these systems, the life form of the dominant vegetation is used to further classify wetlands. The mapping identifies areas of freshwater emergent wetlands and freshwater forested/shrub wetlands along the rivers in the area. An isolated palustrine wetland site exists east of the Bitterroot River and south of South Avenue. Palustrine wetlands are nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens and encompass features like marshes, swamps, bogs, fens, prairie potholes, and shallow ponds.

A wetlands survey was conducted for the Maclay Bridge EA in 1993; however, the data from the survey is outdated and the wetlands delineations are no longer valid. Therefore, if a project is advanced, a new wetland impact evaluation must be conducted during the project development process. This evaluation would include a formal delineation of potentially affected wetlands sites, development of site data forms, wetland classification and functional assessment, and the identification of potential impacts to wetlands sites. Wetland jurisdictional determinations will also need to be done during the project development process. This information is typically summarized in the Biological Resources Report and/or Aquatics Finding Report prepared for highway projects.

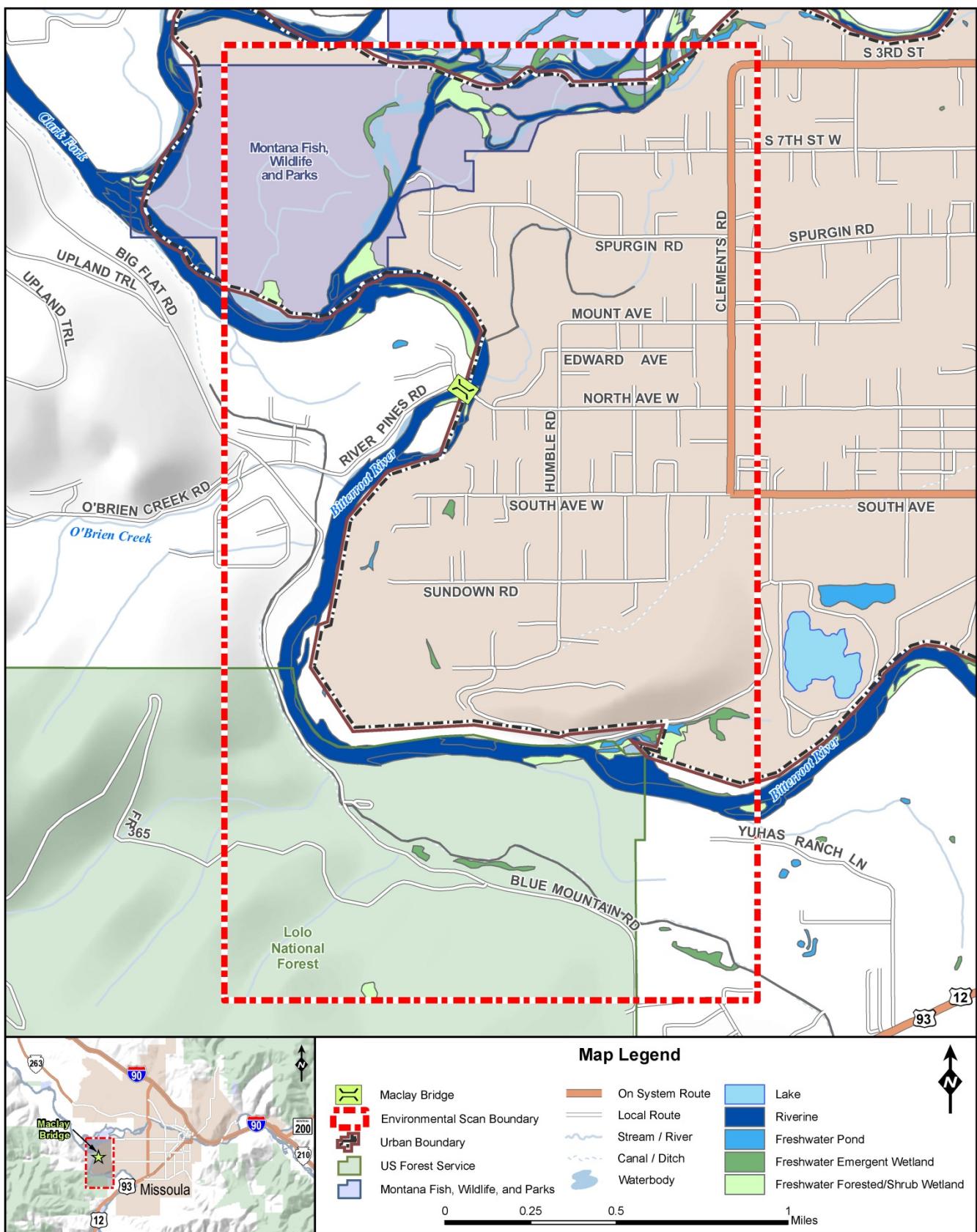


Figure 10: NWI Wetlands Sites within the Environmental Scan Area

If a project is forwarded, wetland impacts should be avoided or minimized to the greatest extent practicable. All unavoidable wetland impacts will be mitigated as required by the COE and in accordance with policies.

3.5. WILD AND SCENIC RIVERS

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. In 1976, Congress designated portions of two rivers in Montana—the Flathead River and the Missouri River—as wild, scenic, or recreational components of the National Wild and Scenic River System.

There are no wild and scenic rivers designated within the Environmental Scan boundary.

3.6. FLOODPLAINS (EO 11988) AND FLOODWAYS

Floodplains are 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.

Executive Order (EO) 11988, Floodplain Management, and FHWA’s floodplain regulations (23 CFR 650, Subpart A) requires that 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 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.

Compliance with these directives requires an evaluation of a proposed project and its alternatives 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 1 percent chance of being equaled or exceeded in any given year.

The Federal Emergency Management Agency (FEMA) has developed maps showing flood zones according to varying levels of risk as part of the National Flood Insurance Program. The agency's Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps are used to help assess the risk from flooding by floodplains and flood hazard areas. FEMA issued Revised Preliminary Digital Flood Insurance Rate Maps (DFIRM) for Missoula and Missoula County areas in December 2010. FEMA-delineated floodplains in the Environmental Scan Area are shown on DFIRM Panel 1455 (Map Number 300631455E).

Figure 11 shows floodplains within the Environmental Scan Area have been delineated along the Bitterroot and Clark Fork Rivers and at the confluence of O'Brien Creek and the Bitterroot River.

Should a project be advanced, any identified improvement option, or options, would need to be developed and analyzed in such a way to ensure impacts to the floodplain and river are minimized. Missoula County would have a “no increase” requirement for the base flood elevation. An exception may be allowed if a conditional letter of map revision (CLOMR) is prepared, reviewed, and approved by FEMA. This process would allow for a 0.5 foot increase of the published base flood elevation, only if hydraulic modeling shows it would not affect adjacent property.

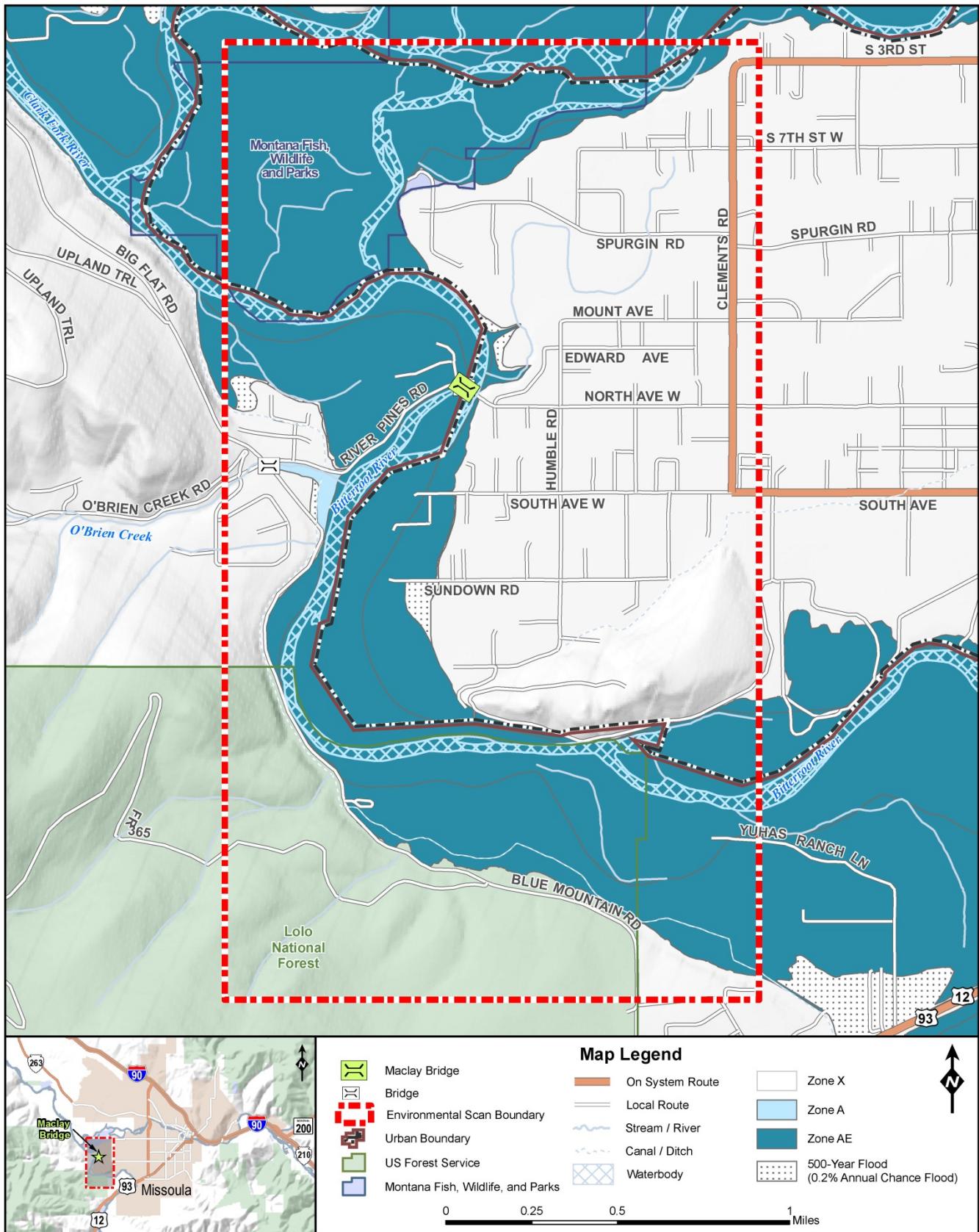


Figure 11: Delineated Floodplains within the Environmental Scan Area

3.7. HAZARDOUS MATERIALS

Information about the existence of underground storage tank (UST) sites, leaking underground storage tank (LUST) sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, hazardous waste, crude oil pipelines, and toxic release inventory sites in the Environmental Scan Area was obtained from the Montana Natural Resource Information System (NRIS) database.

The following sites were initially identified as locations with potential contamination impacts:

- eight underground storage tank locations;
- one leaking underground storage tank locations; and
- one petroleum release compensation site.

Figure 12 shows the location of such sites within the Environmental Scan Area.

If a project is advanced from this study, further evaluation may be needed at specific sites to determine the potential for encountering contamination during construction. This evaluation may include reviewing MDEQ files for specific sites and/or conducting subsurface investigation activities to determine the extent of soil and groundwater contamination at locations of interest. If contaminated soils or groundwater is encountered during construction, handling and disposing of the contaminated material will be conducted in accordance with State, federal, and local laws and rules.

Due to the age of the Maclay Bridge, its steel structure may be covered with lead paint. Lead paint poses a source of potential contamination and would require special handling provisions should the structure be reused or demolished. Lead contamination issues may arise if the bridge is reconstructed (cleaning and painting) or demolished on site. Likewise, if the structure remained in use as a pedestrian bridge, then lead exposure could occur to people walking across it.

A natural gas substation owned by the NorthWestern Energy is located near the east end of the Maclay Bridge south of North Avenue.

3.8. AIR QUALITY

The Clean Air Act (CAA) of 1970, as amended, is the basis for air pollution control programs. In accordance with the Act, the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide (CO), ozone (O₃), particulate matter (PM10 /PM2.5), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and lead (Pb). 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 also has established air quality standards for criteria pollutants, as well as for settleable particulates and visibility. The Montana Ambient Air Quality Standards (MAAQS)—found in the *Administrative Rules of Montana* (ARM) 17.8.210 – 17.8.230—establish statewide targets for acceptable levels of ambient air pollutants.

The EPA and the 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 non-attainment in the past, but that now complies with the NAAQS, is classified as a “maintenance” area.

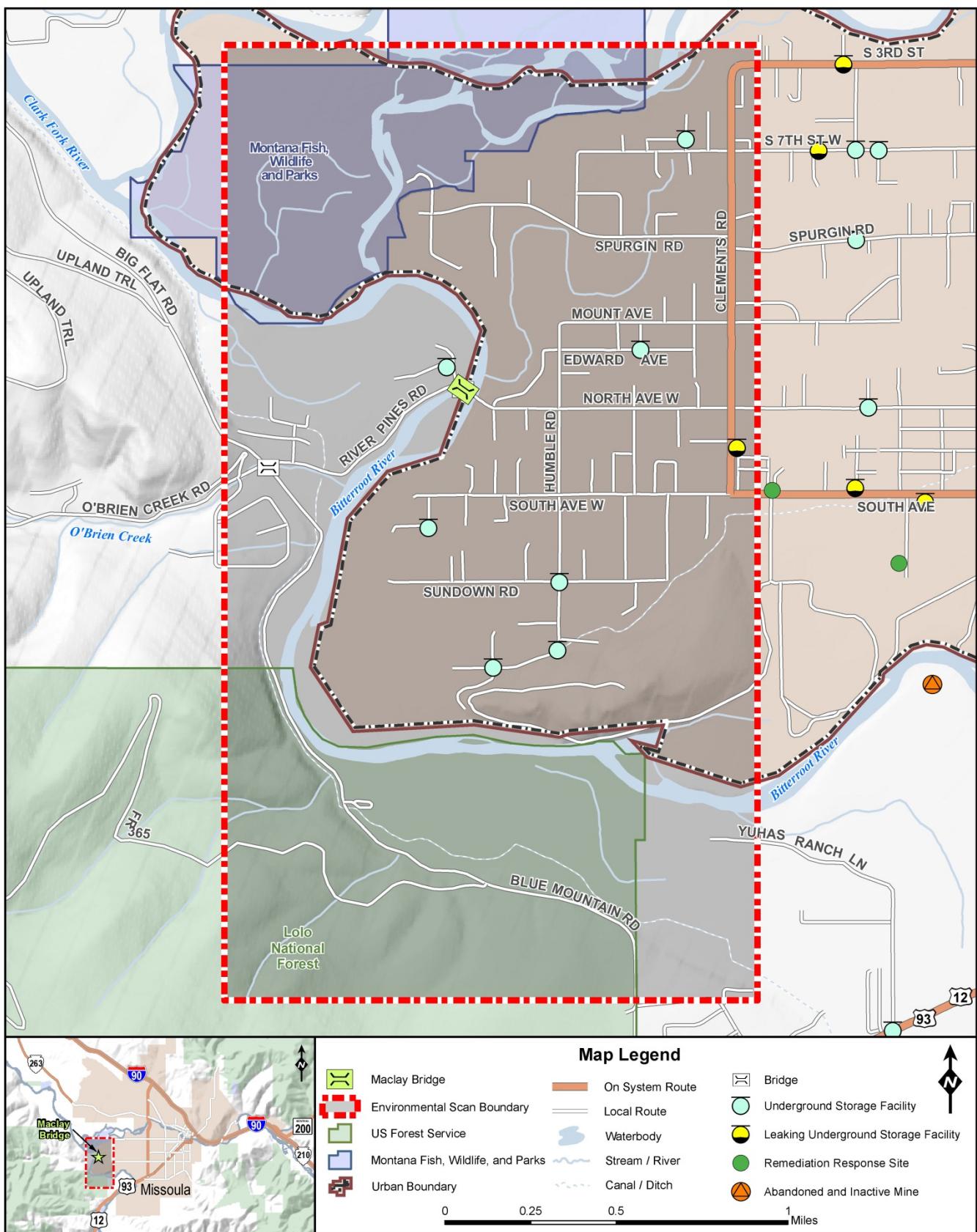


Figure 12: Hazardous Materials Sites within the Environmental Scan Area

Portions of the Missoula area have historically exceeded air quality standards for PM10 and CO emissions. As a result, the Missoula urban area was designated as a non-attainment area for PM10 in 1991. The Missoula PM10 non-attainment area encompasses the majority of the Environmental Scan Area north and east of the Bitterroot River. Missoula was also designated as a nonattainment area for CO during 1991 but was reclassified as an attainment area in 2007. Missoula is currently designated as a maintenance area for CO.

Transportation Conformity. Should a project be advanced using federal or state funds, it will be necessary to address transportation conformity considerations. Transportation conformity applies in all nonattainment and maintenance areas for criteria pollutants and is meant to help ensure the proposed activities will not cause or contribute to any new violations of the NAAQS; increase the frequency or severity of NAAQS violations; or delay timely attainment of the NAAQS or any required interim milestone.

Projects subject to conformity considerations include those funded or approved by FHWA or the Federal Transit Administration (FTA). As an initial step, it must be determined if the project is exempt from conformity in accordance with 40 CFR 93.126 "Exempt Projects," and ARM 17.8.1301, et seq. If not, a number of project-level conformity requirements apply, including determining whether the project is in a conforming transportation plan and Transportation Improvement Program (TIP), conforms with any applicable control measures in a State Implementation Plan (SIP), and if additional air quality analyses (i.e., hot-spot analysis) are necessary to determine conformity.

Because the Environmental Scan Area falls within the Metropolitan Planning Organization (MPO) administrative boundary, the Missoula Office of Planning and Grants Transportation Planning Division makes initial conformity determinations for plans and programs. This conformity analysis is subject to public and agency review, and requires the concurrence of the FHWA and Federal Transit Administration. The Long Range Transportation Plan (LRTP) for the Missoula area is typically used to demonstrate conformity with air quality regulations and includes an emissions analysis of the Recommended Projects that demonstrates the Plan conforms to the emission budgets for CO and PM10. The replacement of the Maclay Bridge was a project included in the 2008 Missoula LRTP and was considered in the associated conformity analysis.

Any regionally significant project (as defined in the conformity rule), even those that are not federally funded or approved, must be included in the regional emissions analysis of the MPO's transportation plan and TIP.

Mobile Source Air Toxics (MSAT). In 2001, EPA issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being hazardous air pollutants that required regulation. Several of these MSAT compounds—benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, diesel particulate matter plus diesel exhaust organic gases (diesel PM)—were identified as toxic compounds posing notable risks to health.

Should a project be advanced with federal or state funds, an evaluation of the project should occur to determine if it is exempt or if it has the potential for MSAT effects. If a potential for MSAT effects exists, the required level of analysis for such effects must be identified and performed. Should local funds be used to advance a project, there would be no applicable requirement to evaluate the potential for MSAT effects.

3.9. Noise

Highway projects can cause noise levels to increase for affected receivers, during project construction and/or from operation of the highway facility. Should a project be advanced with federal or state funds, it

will be necessary to establish whether the project is a “Type I Project” as defined in 23 CFR 772.5(h). Type I projects involve:

- construction of a highway on new location;
- the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes; or
- the potential for creating a traffic noise impact (e.g., idling vehicles at rest areas, weigh stations).

A detailed noise analysis would be required for a Type I project. The noise analysis includes measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes. Noise abatement measures would be considered for the project if noise levels *approach or substantially exceed* the FHWA’s Noise Abatement Criteria. If traffic noise impacts are shown to exist then feasible and reasonable noise abatement methods to reduce traffic noise impacts are considered.

If it is determined the project is not Type I, then it is considered a Type III project which does not require a noise analysis or consideration of noise abatement. (Note Type II projects are retro-fit noise abatement projects.)

Project construction activities associated with a future project may result in localized and temporary noise impacts. These impacts can be minimized by using standard MDT specifications for the control of noise sources during construction.

Should a project be advanced using only local funds, there is no legal requirement to review and assess the potential noise effects of the project. Addressing the issue would be at the discretion of local government during its project development activities.

4.0 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 Environmental Scan Area encompasses a wide variety of settings including low-density suburban and rural residential areas, agricultural lands, riparian habitat, and forested lands. Within these settings, an array of biological, historic, wildlife, ecological, and cultural resources contribute to the visual resources are present. The Bitterroot River riparian corridor, the Kelly Island Fishing Access Site, Lolo National Forest land, and a large conservation easement in the McCauley Butte area provide areas of natural open space and add to the visual resources present within the Environmental Scan Area.

Should a project be advanced with federal or state funds, the proposed project will need to be reviewed to assess its potential for visual quality impacts. Actions that may have visual impacts include projects on new location or that involve expansion, realignment or other changes that could alter the character of an existing facility. Residential areas, scenic areas, geological features, parks and recreation areas, historic or other culturally important resources, water bodies and public facilities are locations that may be sensitive to visual impacts.

If only local funds were used to advance a project, there would be no legal obligation to review and assess its potential visual effects. Addressing the issue would be at the discretion of local government during its project development activities.

5.0 BIOLOGICAL RESOURCES

Existing information on wildlife, fisheries and special status species known to occur or that may potentially occur in the Environmental Scan Area was reviewed from a variety of sources including the USFWS, MFWP, the Montana Natural Heritage Program (MNHP), and resource documents prepared for planning efforts by Missoula County, the City of Missoula, and the Target Range Neighborhood.

This review of biological resources is limited and intended only to provide a representation of the type and extent of wildlife, plants, and habitat found in the Environmental Scan Area. If a project is advanced, consultations with MFWP field biologists will occur and a biological resource survey of the project area will be conducted during the project development process. These activities will yield important wildlife and fisheries information that can be used to evaluate the project and its potential effects and identify appropriate mitigation measures.

5.1. WILDLIFE AND FISH

A diverse variety of wildlife inhabits the Environmental Scan Area. The variety of wildlife in the Environmental Scan area is largely a function of the diversity of habitat types found including riparian zones adjacent to the streams and rivers, grasslands, wetlands, agricultural lands, and forested mountains and foothills. Each of these locations provides suitable habitat types for several wildlife species. The wildlife and fisheries resources found within the Environmental Scan Area are discussed further in the following sections.

General fish and wildlife resources will need to be surveyed during any future project development process. MFWP should be contacted during the project development process for local expertise regarding the wildlife and fisheries resources of the area. If a project is forwarded from the improvement option(s), encroachment into the waterway and the associated riparian habitat should be minimized, to the extent practicable. Additionally, the potential for vehicle/wildlife collisions should be analyzed if travel speeds could increase as a result of the project.

5.1.1. Wildlife Resources

The most common forms of wildlife found in the Environmental Scan Area are species adapted to suburban life and tolerant of some level of human disturbance as well as species that make use of the river and its riparian areas as permanent habitat and movement corridors. These include mule and white-tailed deer, small mammals (like coyote, red fox, squirrels, raccoons, skunks, beaver, mink), and a variety of rodents. Additionally, there are areas of winter range for elk, mule deer, and white-tailed deer located in the mountains and foothills in the Environmental Scan Area. Other species like moose, black bear, and mountain lion may occasionally pass through the riparian corridors and forested lands in the Environmental Scan Area.

According to the *Target Range Neighborhood Plan*, more than 100 species of birds occur in this portion of the Missoula area including ospreys, sandhill cranes, wild turkey, ringed-neck pheasant, a variety of raptors (osprey, bald eagles, falcons, and hawks), owls, woodpeckers, migratory waterfowl, and many neo-tropical migratory birds (flycatchers, warblers, vireos, grosbeaks, and orioles). The *Neighborhood Plan* also referenced occurrences of bald eagle nest sites in the Kelly Island and McCauley Butte areas.

Amphibians and reptiles occurring in the Environmental Scan Area include spotted frog, leopard frog, bull frog, western yellow-bellied racer, western garter snake, and western painted turtle.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) and Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” provide protection for migratory bird species including protection of their nests and eggs. Under the MBTA, 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.

Bald and Golden Eagle Protection Act. Bald eagles and golden eagles are among several raptor species that may occur throughout the Environmental Scan Area. Bald eagles may use the area for foraging, roosting, or nesting habitats. Bald eagle nest sites are known in the Kelly Island and McCauley Butte areas.

The bald eagle, listed under the Endangered Species Act (ESA) in 1973, has recovered in Montana and was officially delisted in 2007. Although no longer protected under the ESA, the species remains protected under the Bald and Golden Eagle Protection Act and the MBTA. While there is no formal process or requirement for consultation with the USFWS under the Bald and Golden Eagle Protection Act, agencies and others are encouraged to follow the *National Bald Eagle Management Guidelines* and the *Montana Bald Eagle Management Guidelines: An Addendum to Montana Bald Eagle Management Plan, 1994*. The Guidelines advise landowners, land managers and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the Eagle Act may apply to their activities. The Montana Guidelines should be followed to help prevent the disturbance of nesting eagles in the area.

Important Bird Areas. The National Audubon Society has taken the lead in implementing the Important Bird Area (IBA) Program in the U.S. IBAs are identified areas that sustain healthy populations of birds (usually species of concern) so that efforts can be directed to implementing conservation measures and habitat protection actions to help sustain the sites. As of fall 2010, the Montana IBA Committee has approved 39 IBAs in Montana. Clark Fork River-Grass Valley IBA encompasses the Clark Fork and Bitterroot River corridors and adjacent uplands within the Environmental Scan Area. The site supports a high diversity of birds, including a number of species of conservation priority. Habitats include cottonwood gallery forests, riparian willows, various wetland types, grasslands, woody draws, and agricultural crops and pasture lands. Most of the land within the IBA is privately owned.

5.1.2. Aquatic Resources

The major surface waters found within the Environmental Scan Area include the Bitterroot River, Clark Fork River, O'Brien Creek, and the Big Flat Ditch. All of these waters, except for the Big Flat Ditch, are managed as fisheries by the MFWP. The Bitterroot and Clark Fork Rivers have been rated as Outstanding for their fisheries resource value by MFWP. Both streams receive recreational angler use year-round for sport fishing although restrictions exist relative to fishing for certain species. O'Brien Creek has a Moderate rating for its fisheries resource value and is open to use by anglers on a seasonal basis.

According to maps developed by the USFWS, the Bitterroot and Clark Fork Rivers and O'Brien Creek are designated as Bull Trout Critical Habitat (BTCH).

Information about fish distribution in area streams was obtained during March 2012 from the MFWP's Montana Fisheries Information Database (MFISH). **Table 1** shows fish distribution data and indicates the abundance of each species within the Bitterroot and Clark Fork Rivers and O'Brien Creek. The fish distribution data is based on observations and multiple surveys and professional judgment about the potential occurrences of species if surveys have not been conducted.

Within the Environmental Scan Area, the Kelly Island Fishing Access Site (FAS), located at the confluence of the Bitterroot and Clark Fork Rivers, can be accessed via Spurgin Road and South Seventh Street. The existing Maclay Bridge area also offers an attractive location for anglers and other recreationists to access the Bitterroot River. Parking in the vicinity of the bridge is restricted.

Table 1: Fish Distribution in Environmental Scan Area Streams

Common Name	Scientific Name	Use Type	Abundance by River or Stream		
			Bitterroot River	Clark Fork River	O'Brien Creek
Brook Trout	<i>Salvelinus fontinalis</i>	Year-round resident	Rare		Rare
Brown Trout	<i>Salmo trutta</i>	Year-round resident	Common	Rare	Abundant
Bull Trout	<i>Salvelinus confluentus</i>	Fluvial/Adfluvial population, Spawning elsewhere	Rare	Rare	
Largemouth Bass	<i>Micropterus salmoides</i>	Year-round resident	Incidental	Rare	
Largescale Sucker	<i>Catostomus macrocheilus</i>	Year-round resident	Abundant	Abundant	
Longnose Dace	<i>Rhinichthys cataractae</i>	Year-round resident	Common	Common	
Longnose Sucker	<i>Catostomus catostomus</i>	Year-round resident	Abundant	Abundant	
Mountain Whitefish	<i>Prosopium williamsoni</i>	Year-round resident	Abundant	Common	Abundant
Northern Pike	<i>Esox lucius</i>	Year-round resident	Incidental	Rare	
Northern Pike Minnow	<i>Ptychocheilus oregonensis</i>	Year-round resident	Common		
Peamouth	<i>Mylocheilus caurinus</i>	Year-round resident	Rare		
Pumpkinseed	<i>Lepomis gibbosus</i>	Year-round resident	Incidental	Rare	
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Year-round resident	Abundant	Abundant	Abundant
Redside Shiner	<i>Richardsonius balteatus</i>	Year-round resident	Common		
Slimy Sculpin	<i>Cottus cognatus</i>	Year-round resident	Unknown		
Westslope Cutthroat Trout	<i>Oncorhynchus clarki lewisi</i>	Year-round resident	Rare	Rare	Common
Sculpin	<i>Cottidae spp.</i>	Year-round resident			Rare
Westslope X Rainbow Trout	--	Year-round resident			Common
Yellow Perch	<i>Perca flavescens</i>	Year-round resident		Rare	

Source: Montana Fish, Wildlife and Parks, Montana Fisheries Information Database (MFISH).

5.2. THREATENED AND ENDANGERED WILDLIFE SPECIES

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) protects listed threatened, endangered, proposed, and candidate plant and animal species and their critical habitats. The purpose of Endangered Species Act (ESA) is to protect and recover imperiled species and the ecosystems upon which they depend.

A species listed as "endangered" 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 within the foreseeable future throughout all or a significant portion of its range. Proposed species are those species that are proposed in the Federal Register to be listed under the ESA. Candidate species are species for which the USFWS has sufficient information on biological status and threats to propose to list them as threatened or endangered. However, none of the substantive or procedural provisions of the ESA applies to candidate species.

Under the ESA, *critical habitat* is defined as a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management considerations or protection.

The USFWS maintains an online database of currently listed species for Montana counties, and National Forests, National Parks, and Indian Reservations within the state. The database was accessed in March 2012 to identify the listed wildlife species that could potentially occur within Missoula County. **Table 2** identifies the 5 listed wildlife species potentially occurring in Missoula County and provides information about habitats where these species typically occur.

Table 2: USFWS Endangered, Threatened, Proposed, and Candidate Wildlife Species in Missoula County (as of February 2012)

Common Name	Scientific Name	USFWS Status	Habitat Requirements
Bull Trout	<i>Salvelinus confluentus</i>	Threatened, Critical Habitat Designated	Bull trout are found in the Clark Fork and Flathead drainages of western Montana. Sub-adult and adult fluvial bull trout reside in larger streams and rivers and spawn in smaller tributary streams, whereas adfluvial bull trout reside in lakes and spawn in tributaries. Within the Environmental Scan Area, the Bitterroot River, Clark Fork River, and O'Brien Creek are designated as Critical Habitat for bull trout.
Grizzly Bear	<i>Ursus arctos horribilis</i>	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. Grizzly bear habitat and recovery zones in Missoula County include the Seeley, Swan, and Jocko Valleys, lower Mission Valley, and portions of the upper Rattlesnake watershed.
Canada Lynx	<i>Lynx canadensis</i>	Threatened, Critical Habitat Designated	West of the Divide, Canada Lynx generally occur in subalpine forests at elevations between 4,000 to 7,000 feet in stands composed of pure lodgepole pine but also mixed stands of fir, pine, larch, and hardwoods. Habitat for the species does not exist in the Environmental Scan Area.
Wolverine	<i>Gulo gulo luscus</i>	Candidate	Wolverines live in remote and inhospitable places away from human populations. In the northern Rocky Mountains, wolverines are restricted to high mountain environments near the treeline, where conditions are cold year-round and snow cover persists well into the month of May. Habitat for the species does not exist in the Environmental Scan Area.
Yellow Billed Cuckoo (Western Population)	<i>Coccyzus americanus</i>	Candidate	Western cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods and willows. This candidate species requires patches of at least 25 acres of dense, riparian forest with a canopy cover. This habitat may be present in the Environmental Scan Area.

Source: USFWS, List of Endangered, Threatened, Proposed and Candidate Species Montana Counties.

Based on habitat requirements, the most likely listed species to occur within the Environmental Scan Area are bull trout and the Yellow Billed Cuckoo (Western Population). As noted previously, the Bitterroot and Clark Fork Rivers and O'Brien Creek are designated Bull Trout Critical Habitat (BTCH).

Section 7 of the ESA requires that actions authorized, funded, or carried out by federal agencies are not likely to jeopardize the continued existence of proposed, candidate, threatened, or endangered species, or result in the destruction or adverse modification of their critical habitats. This process ensures that federally listed, candidate, and proposed species receive full consideration in the decision-making process prior to project implementation. If a project is forwarded, consultation with the USFWS will be necessary and an evaluation of potential impacts to all listed species will need to be completed as part of the project development process.

5.3. MONTANA ANIMAL SPECIES OF CONCERN

Wildlife species of concern are native Montana animals that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution. The Montana Natural Heritage Program (MNHP) serves as the state’s information source for animals, plants, and plant communities that are rare, threatened and are at risk or potentially at risk of extinction in Montana.

Designation of a species as a Montana Animal Species of Concern (or Potential Species of Concern) is not a statutory or regulatory classification. The designation as a Species of Concern provides a basis for resource managers and decision-makers to make proactive decisions regarding species conservation and data collection priorities. Each Species of Concern is assigned a state numeric rank ranging from S1 (highest risk, greatest concern) to S5 (demonstrably secure, least concern) reflecting the degree of risk to each species based on available information. Other state ranks applied to Species of Concern 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), N (non-breeding), or M (migratory).

Table 3 lists the animal species of concern within the Environmental Scan Area. **Appendix B** contains a graphic with occurrence data for these species.

Table 3: Montana Animal Species of Concern in the Environmental Scan Area

Common Name	Scientific Name	State Rank	MNHP Occurrences in General Area by Township and Range	MNHP Known Occurrences in Environmental Scan Area
Westslope Cutthroat Trout	<i>Oncorhynchus clarkia lewisi</i>	S2	T13N, R20W T12N, R20W	Yes
Hoary Bat	<i>Laslurus cinereus</i>	S3	T13N, R20W T12N, R20W	Yes
Fisher	<i>Martes pennanti</i>	S3	T13N, R20W	Possible on Lolo National Forest
Black-backed Woodpecker	<i>Picoides arcticus</i>	S3	T13N, R20W T12N, R20W	Yes
Western Skink	<i>Eumeces skiltonianus</i>	S3	T13N, R20W	Yes
Fringed Myotis	<i>Myotis thysanodes</i>	S3	T12N, R20W	Yes
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S3B	T12N, R20W	Yes
Cassin's Finch	<i>Carpodacus cassini</i>	S3	T12N, R20W	Yes
Pileated Woodpecker	<i>Dryocopus pileatus</i>	S3	T12N, R20W	Yes
Lewis's Woodpecker	<i>Melanerpes lewis</i>	S2B	T12N, R20W	Yes
Flammulated Owl	<i>Otus flammmeolus</i>	S3B	T12N, R20W	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>		T13N, R20W T12N, R20W	Yes
Great Blue Heron	<i>Ardea herodias</i>	S3	T13N, R20W T12N, R20W	Yes

Source: Montana Natural Heritage Program, Animal and Plant Species of Concern Searchable Database.

The data presented above reflects the current status of data collection efforts by the Montana Natural Heritage Program. These results of the database search conducted for this Environmental Scan are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. If a project is forwarded, a determination will need to be made if there is a need for any on-site surveys for wildlife species of concern during the project development process.

5.4. CRUCIAL AREA PLANNING SYSTEM (CAPS) REPORT

The MFWP recently implemented a web-based tool to help identify and evaluate the fish, wildlife and recreational resources of Montana. The Crucial Areas Planning System (CAPS) is a mapping service intended to provide useful and non-regulatory information about highly valued fish and wildlife resources and recreation areas during the early planning stages of projects. The CAPS can provide information for specific areas of interest.

In May 2012, MFWP Data Services personnel generated a CAPS report for lands including the Environmental Scan Area. The CAPS summary report (found in **Appendix C**) provides information for both terrestrial and aquatic species/habitats. Notable highlights from the report are provided below:

Terrestrial Species and Habitat

- Highest-value habitat shows up for conservation species, biodiversity (“species richness”), riparian area, and wetlands.
- Moderate-value habitat shows up for game quality.
- Twenty-two (22) conservation species occur, or are predicted to occur, in the CAPS summary area. Conservation species include listed threatened or endangered species, other Species of Concern, and a several additional species identified in Montana’s 2005 Comprehensive Fish and Wildlife Conservation Strategy as being in greatest need of conservation.

Aquatic Species and Habitat

- Highest-value habitat shows up for aquatic connectivity, biodiversity, and game fish quality.
- Moderate-value habitat shows up for Species of Concern and game fish life history.
- Two Species of Concern (including one threatened or endangered species), 10 native species, and 9 sport fish species occur in the CAPS summary area waters.
- The waters in the CAPS summary area provide important rearing, spawning, and thermal areas for cold water sport fish.

MFWP notes that the CAPS information is not a substitute for a site-specific evaluation of fish, wildlife, and recreational resources within the Environmental Scan Area and recommends follow-up consultations with MFWP field biologists should a project be advanced.

5.5. VEGETATION

The Bitterroot River complex within the Environmental Scan Area supports black cottonwood, paper birch, river hawthorne, willows, alder, red osier dogwood, rose and snowberry. Cattails and sedges are emergent species that dominate wetlands areas. Sage, rabbit brush and other low lying shrubs grow in the drier areas, as well as native grasses and introduced species (which range from tame grasses to noxious weeds). On foothills and mountain areas, common species include ponderosa pine, lodgepole pine, Douglas fir, grand fir, Engelmann spruce, subalpine fir, and alpine larch. Common shrubs and grasses found in these areas include snowberry, spirea and ninebark, wheatgrasses, fescues, pine grass, and introduced bluegrasses.

Vegetation in developed areas consists of ornamental trees and shrubs, lawns, and flowerbeds associated with residential landscapes. The Environmental Scan Area also contains areas of cultivated lands.

The *Target Range Neighborhood Plan* notes that this portion of the Missoula Valley contains isolated remnants of native vegetation. Areas of native dry grasslands, open ponderosa pine forest, and riparian deciduous forests and associated wetlands exist along the Bitterroot and Clark Fork Rivers.

5.5.1. Threatened and Endangered Plants

The online database of threatened, endangered, proposed, and candidate plant species maintained by the USFWS identifies two plants—Water Howelia and Whitebark Pine—as potentially occurring in Missoula County. Water Howelia is a threatened plant species and the Whitebark Pine is a candidate species for listing. **Table 4** presents habitat requirements for each of these species. Known occurrences and habitat requirements suggest these plants are unlikely to occur in the Environmental Scan Area.

Table 4: USFWS Endangered, Threatened, Proposed, and Candidate Plant Species

Common Name	Scientific Name	USFWS Status	Habitat Requirements
Water Howelia	<i>Howellia aquaticus</i>	Threatened	Water howelia is a winter annual aquatic plant that grows in small, vernal, freshwater wetlands that have an annual cycle of filling up with water over the fall, winter and early spring, followed by drying during the summer. The wetlands typically consist of small shallow ponds within a matrix of forest vegetation and are usually bordered in part by deciduous trees. Known occurrences of the species in Montana are all within the Swan River drainage in the northeastern portion of Missoula County.
Whitebark Pine	<i>Pinus albicaulis</i>	Candidate	Whitebark pine typically occurs in isolated stands on cold and windy high-elevation or high-latitude sites in western North America. This habitat does not exist in the Environmental Scan Area.

Source: USFWS, List of Endangered, Threatened, Proposed and Candidate Species Montana Counties.

As with listed wildlife species, consultation with the USFWS will be necessary and an evaluation of potential impacts to all listed, candidate, and proposed plant species must be completed if a project is forwarded.

5.5.2. Plant Species of Concern

A file search of the MNHP database did not identify any plant species of concern occurring in Township 13 North, Range 20 West which encompasses the majority of the Environmental Scan Area. The file search identified one plant species of concern—Toothcup (*Rotala ramosior*)—in Township 12 North, Range 20 West, a portion of which occurs in the Environmental Scan Area. Toothcup is a rare plant identified from only a limited number of wetland sites in western Montana.

The results of the MNHP database search are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys. If a project is forwarded, a determination will need to be made if there is a need for any on-site surveys for plant species of concern during the project development process.

5.5.3. Noxious Weeds

Noxious weeds cause the loss of wildlife habitat, displace native plant species, reduce forage production for livestock and crop production, contribute to soil erosion and soil sedimentation, and adversely affect recreational value and uses of Montana's lands. According to the Montana County Noxious Weed Control Law (MCA 7-2101 through 2153), noxious weeds are defined as being any exotic plant species that may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses, or that may harm native plant communities.

According to the Montana Noxious Weed List (September 2010) maintained by the Montana Department of Agriculture, there are 32 state-designated noxious weeds and 3 additional regulated plant species. These species have been assigned various priorities (1A, 1B, 2A, 2B, and 3) based on the number of acres infested and management criteria within the state. Counties may also designate other noxious species; however, there are no additional county-designated weeds in Missoula County.

The Montana Invaders Database lists documented occurrences of 20 noxious weed species in Missoula County since 1875. The Target Range Neighborhood Plan (adopted June 30, 2010) notes the widespread presence of spotted knapweed, leafy spurge, sulfur cinquefoil, houndstongue, Canada thistle, field bindweed, common tansy, and tall buttercup in this portion of the Missoula Valley. Several other weeds including dalmatian toadflax, yellow iris, orange hawkweed, and oxeye daisy are established but not widespread in the area.

If a project is forwarded with federal or state funds, field surveys for noxious weeds within the project area will need to be completed during the project development process. Coordination with the Missoula County Weed District Supervisor should begin during project development and continue through design activities to establish specific guidance for noxious weed control at the project site.

Should a project be forwarded using only local funds, the County would implement the project in a manner consistent with the *Missoula County Noxious Weeds Management Plan* adopted in 2010.

6.0 CULTURAL AND ARCHAEOLOGICAL RESOURCES

Section 106 of the National Historic Preservation Act (36 CFR 800) establishes requirements for taking into account 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). Other directives impose additional requirements that must be addressed regarding effects of proposed undertakings on historic and archaeological resources and paleontological sites including:

- Section 4(f) of the US Department of Transportation Act (23 USC 138, 49 USC 303);
- Archaeological Resources Protection Act (16 USC 470aa, et seq.);
- Native American Graves Protection and Repatriation Act (25 USC 3001-3013);
- Montana Antiquities Act (MCA 22-3-421 et seq.); and
- Montana Human Skeletal Remains and Burial Site Protection Act (MCA 22-3-800 et seq.).

Compliance with these applicable laws will be required if projects are forwarded. Applicable laws will vary depending upon the funding sources for the proposed project.

CRIS/CRABS File Search Results. A Cultural Resources Information System (CRIS) and Cultural Resources Annotated Bibliography (CRABS) file search was conducted for the Environmental Scan Area. The CRABS file search indicates that 26 cultural resource surveys have been conducted on lands that are within or near the Environmental Scan Area between 1978 and 2010. The CRIS file search identified 28 recorded properties within the Environmental Scan Area including one National Register-listed site—the Fort Missoula Complex (24MO0266). Complete file search results from SHPO can be found in **Appendix D**.

Table 5 lists the site name (where known), assigned Smithsonian Site Number, resource type, and National Register of Historic Places (NRHP) eligibility status for previously recorded cultural resource sites within the Environmental Scan Area. **Figure 13** shows the general location of these previously recorded sites. There may be additional unknown cultural sites located within the Environmental Scan Area that have not been identified and recorded.

Table 5: Summary of Cultural Resources in the Environmental Scan Area

Resource Name	Smithsonian Site #	Type of Resource	National Register Eligibility Status
Stettler Property	24MO05I6	Historic Residence	Ineligible
Rice Property	24MO05I7	Historic Residence and Outbuildings	Consensus determination of eligibility
Maxwell Property	24MO05I8	Historic Residence and Outbuildings	Ineligible
Maclay Property	24MO0519	Historic Residence and Outbuildings	Recommended as eligible for National Register
Missoula Irrigation District Ditches	24MO0520	Historic Irrigation System	Consensus determination of eligibility
Maclay Bridge	24MO0521	Historic Vehicular/Foot Bridge	Determined eligible for National Register
Big Flat Ditch	24MO0587	Historic Irrigation System	Consensus determination of eligibility
Maclay Ditch	24MO0954	Historic Irrigation System	Undetermined
Target Range Elementary School	24MO0589	Historic School	Listed on the National Register
Site in T13N, R20W, Sec. 35	24MO0209	Lithic Material Concentration	Undetermined
Site in T13N, R20W, NW 1/4 Sec. 35	24MO1388	Historic Residence	Undetermined

Source: Montana Historical Society, CRIS File Search Results, 3/21/2102.

If a project is forwarded from the Planning Study, a cultural resource survey of the Area of Potential Effect (APE) for the project as specified in Section 106 of the National Historic Preservation Act would need to be conducted. Section 106 outlines a process 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 previously recorded and newly discovered historic or archaeological resources. Special protections to these cultural resources are afforded protection under Section 4(f) of the Transportation Act. This is discussed further in the next section.

6.1. 4(F) RESOURCES

Section 4(f) of the Department of Transportation Act of 1966, which is codified and renumbered as 49 USC, Section 303(c), provides that “the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance or land from an historic site of national, State, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.”

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) does not apply to projects that do not use federal transportation funding.

Public Parks, Public Recreation Areas, and Wildlife and Waterfowl Refuges. Publicly owned land is considered to be a park, recreation area or wildlife and waterfowl refuge when the land has been officially designated as such by a Federal, State or local agency, and the officials with jurisdiction over the land determine that its primary purpose is as a park, recreation area, or refuge. The requirements of Section

4(f) apply if the entire public park or public recreation area permits visitation of the general public at any time during the normal operating hours.

The park classification system used in the *Missoula County Parks and Trails Master Plan* includes a category identified as “conservation parks.” Conservation parks include sites and park parcels that preserve sensitive natural and/or cultural resources. Such areas can include hillsides, wooded areas of native trees and flora, grasslands, riparian areas, historic sites, and more. Typically, conservation parks are a minimum of 5 acres in size in order to provide a habitat area of sufficient size to reasonably support native wildlife.

For purposes of Section 4(f), National Wildlife Refuges are always considered wildlife and waterfowl refuges by FHWA. In addition, any significant publicly owned property (including waters) where the primary purpose of such land is the conservation, restoration, or management of wildlife and waterfowl resources including, but not limited to, endangered species and their habitat is considered by FHWA to be a wildlife and waterfowl refuge for purposes of Section 4(f).

National Forest Lands. Section 4(f) applies only to those portions of a public multiple-use property designated by statute or identified in an official management plan of the administering agency as being primarily for public park, recreation, or wildlife and waterfowl refuge purposes, and are determined to be significant for such purposes.

The Environmental Scan Area contains Lolo National Forest lands that would be considered to be multiple-use public property. As noted earlier in this document, the existing (1986) *Lolo National Forest Plan* indicates these lands are managed for concentrated public use and dispersed recreation opportunities. Preliminary mapping prepared for an ongoing revision to the *Forest Plan* designates the Lolo National Forest lands in the Environmental Scan area as “Management Area 6.1— High Use Recreation Complexes or Use Areas” and identifies these forest lands as part of the Blue Mountain Recreation Area. Should a project be advanced that potentially affects these Lolo National Forest lands, coordination with the Missoula District Ranger and FHWA will be necessary to determine the applicability of Section 4(f).

Conservation Easements. The Environmental Scan Area contains sizable areas of private land along the Bitterroot River that are held under conservation easements by the Five Valleys Land Trust. Conservation easements exist for the purposes of preserving open space, protecting fish or wildlife habitat, or limiting the extent and density of development. The FHWA’s *Draft Section 4(f) Policy Paper* (November 2011) indicates that it is unlikely that a conservation easement would meet all of the requirements necessary to treat the property as a significant publicly-owned public park, recreation area, or wildlife and waterfowl refuge. However, FHWA notes that should the situation be encountered, the terms and conditions of the easement should be carefully reviewed to determine if Section 4(f) applies to the property. Therefore, if a project is advanced and may affect conservation easement lands, coordination with the private landowners, the conservation easement holder, and FHWA will be necessary to determine the applicability of Section 4(f).

Significant Historic Sites. Section 4(f) applies to all historic sites of national, state, or local significance and typically protects only historic or archeological properties on or eligible for inclusion on the National Register of Historic Places (NRHP). Within historic districts, Section 4(f) applies to the use of those properties that are considered contributing to the eligibility of the historic district, as well as any individually eligible property within the district.

Section 4(f) Resources in the Environmental Scan Area. Table 6 lists resources within the Environmental Scan Area that may potentially be subject to Section 4(f). These sites are shown of Figure 13.

Table 6: Summary of Potential Section 4(f) Resources in the Environmental Scan Area

Name	Type of 4(f) Resource	Comments /Location
Kelly Island FAS	Public Recreation Site	666-acres site located at confluence of Bitterroot and Clark Fork Rivers, owned and managed by MFWP
Rosecrest Park ^(a)	Neighborhood Park	9.6 acres located south Spurgin Road between Clement Road and 37th Avenue. County ownership
Schmautz Park ^(a)	Neighborhood Park	4.2 acre, undeveloped parcel located north of North Avenue and west of 42nd Avenue. County ownership
Target Range School Playground Target Range School (24MO0589)	Neighborhood Park Historic School	10 acre area containing sports fields, basketball courts, and play equipment. Target Range School is listed on National Register.
Dinsmore River Four	Conservation Park	Bitterroot River island habitat located south of existing Maclay Bridge County ownership
Double R Acres	Conservation Park	Clark Fork River riparian habitat adjoining Kelly Island FAS. County ownership
O'Brien Cr. Meadows Common Area	Conservation Park	O'Brien Creek riparian area located near intersection of Big Flat Road and O'Brien Creek Road. County ownership. Identified in Missoula County Parks and Conservation Lands Plan (1997)
Capi Court Park ^(a)	Unimproved County Park	North of Spurgin Road and east of Sierra Drive
Five Valley Land Trust Conservation Easements	Wildlife Habitat/Public Use	Various locations along Bitterroot River
Lolo National Forest Lands	Public Multiple-use Property	Southwestern portion of Environmental Scan Area, part of Blue Mountain Recreation Area
Rice Property (24MO0517)	Historic Residence and Outbuildings	Consensus determination of eligibility for National Register
Maclay Property (24MO0519)	Historic Residence and Outbuildings	Recommended as eligible for National Register
Maclay Bridge (24MO0521)	Historic Vehicular/Foot Bridge	Determined eligible for National Register. Owned by Missoula County
Big Flat Ditch (24MO0587) Missoula Irrigation District Ditches (24MO0520)	Historic Irrigation Systems	Consensus determination of eligibility for National Register

Sources: 1) Montana Historical Society, CRIS File Search Results, 3/21/2102; 2) Missoula County Parks and Conservation Lands Plan, 1997.; 3) Missoula County, Final Draft Parks and Trails Master Plan, 2012.

(a) Capi Court, Rosecrest Park, and Schmautz Park are county parks that are the result of subdivision park and open spaces requirements from the Missoula County Subdivision Regulations, section 3-080.

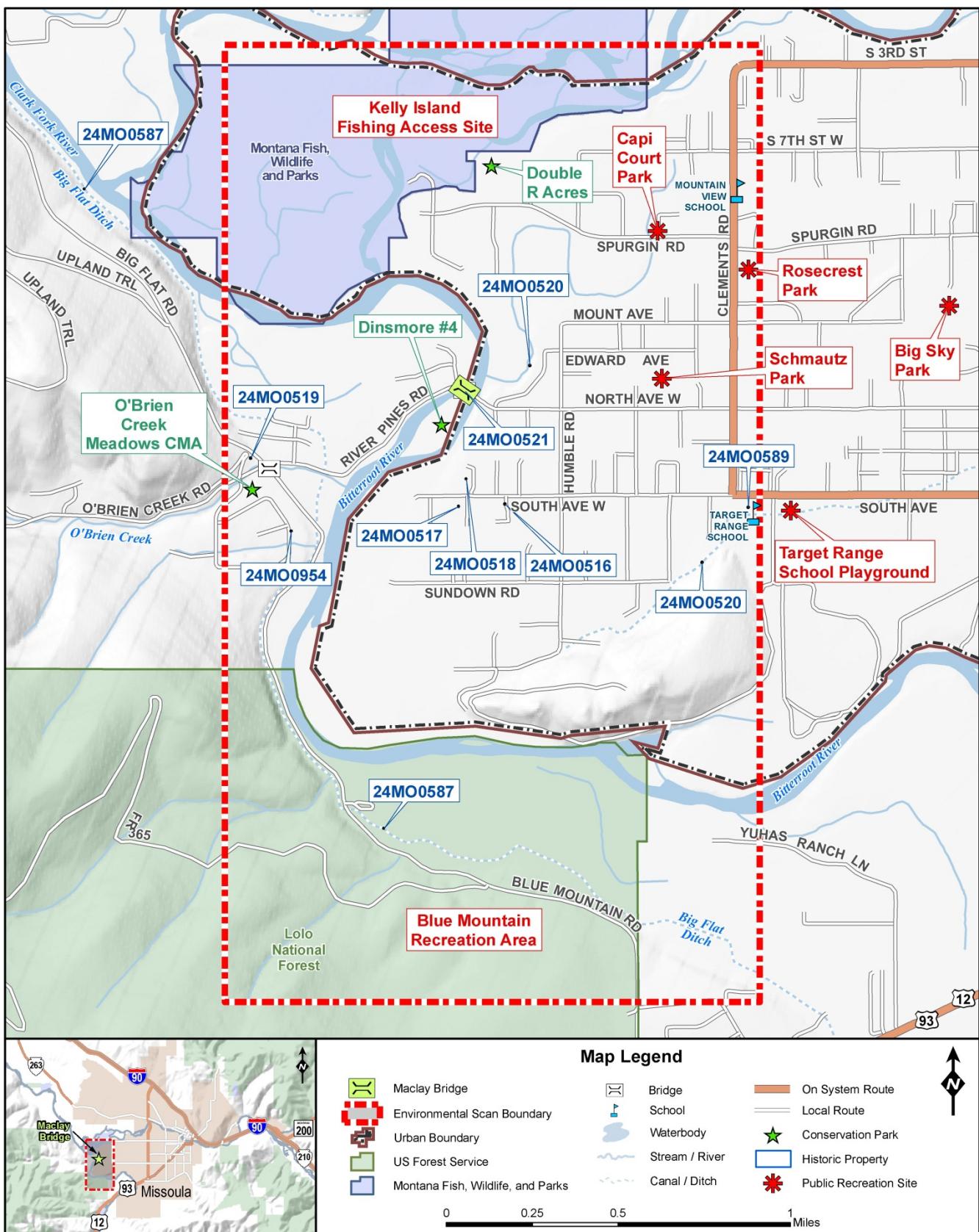


Figure 13: Cultural Resource Sites and Section 4(f) Resources in the Environmental Scan Area

Note that **Table 6** only includes historic properties that have been determined eligible for the National Register. There are other historic properties within the Environmental Scan Area for which their National Register eligibility status is undetermined or unresolved, including the existing Maclay Bridge. If a project is advanced using federal funds, further research and coordination with FHWA will be necessary to determine the applicability of Section 4(f) for any identified resources potentially affected by the project.

6.2. 6(F) PROPERTIES

Section 6(f) of the Land and Water Conservation Fund Act (LWCF) (16 USC, Section 4601 et. seq.) provides funds for buying or developing public use recreational lands through grants to local and state governments. 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 (DOI), through the National Park Service (NPS), approves the conversion. Conversion may only be approved if the conversion is consistent with comprehensive statewide outdoor recreation plan in force when the approval occurs, and the converted property is replaced with other recreation property of reasonably equivalent usefulness and location and at least equal fair market value.

A review of LWCF grants in Missoula County maintained by MFWP shows that the Kelly Island Fishing Access Site (FAS) is the only property in the Environmental Scan Area acquired/improved under Section 6(f) of the LWCF. Records show three grants were awarded the MFWP for the acquisition and development of the FAS.

7.0 DEMOGRAPHICS

A brief review of demographics and socioeconomic information within the Environmental Scan Area was conducted in an effort to gain an understanding of recent trends in population, age, race and ethnicity, and the economic status of area residents. Understanding the composition of the population is necessary, as the data may influence the types of improvements that are identified. For example, an aging population may indicate a need for specific types of transportation improvements such as transit services and/or non-motorized infrastructure improvements. Additionally, the presence of a disadvantaged population may warrant other considerations.

7.1. POPULATION AND GROWTH

Table 7 presents population and growth statistics for Missoula County and the City of Missoula and compares them with similar data for the State of Montana and the United States. Over the last decade, the population in Missoula County has increased by more than 14 percent and the City of Missoula's population has grown by 17 percent. This is in contrast to the 9.7 percent growth experienced over the last decade in the State of Montana and the entire United States. According to the 2010 Census, Missoula County has a density of 42.1 persons per square mile. This is well above the population density for the State of Montana as a whole.

Table 7: Population Growth Trends and Density

Area	Population (2010)	Population (2000)	Percent Growth	Persons per Square Mile (2010)
Missoula County	109,299	95,799	14.10%	42.1
City of Missoula	66,788	57,053	17.00%	2,428.70
State of Montana	989,415	902,195	9.70%	6.8
United States	308,745,538	281,421,906	9.70%	87.4

Source: US Bureau of the Census, *Census of the Population*.

7.2. RACE AND ETHNIC COMPOSITION

In addition to population growth characteristics and density, it is desirable to understand the racial composition of residents in Missoula County and the City of Missoula. **Table 8** depicts the race and ethnicity characteristics in Missoula County, the City of Missoula, the State of Montana, and the United States according to the 2010 US Census.

Table 8: Population Race and Ethnicity Data - In Persons and Percent of Total (2010)

Area	Missoula County		City of Missoula		State of Montana		United States	
Total Population	109,299		66,788		989,415		308,745,538	
White	101,320	92.7%	61,534	92.1%	884,961	89.4%	223,553,265	72.4%
Black or African American	445	0.4%	352	0.5%	4,027	0.4%	38,929,319	12.6%
American Indian and Alaska Native	2,872	2.6%	1,838	2.8%	62,555	6.3%	2,932,248	0.9%
Asian	1,236	1.1%	809	1.2%	6,253	0.6%	14,674,252	4.8%
Native Hawaiian and Other Pacific Islander	105	0.1%	69	0.1%	668	0.1%	540,013	0.2%
Some Other Race	478	0.4%	334	0.5%	5,975	0.6%	19,107,368	6.2%
Two or More Races	2,843	2.6%	1,852	2.8%	24,976	2.5%	9,009,073	2.9%
Hispanic or Latino (of any race)	2,861	2.6%	1,943	2.9%	28,565	2.9%	50,477,594	16.3%

Source: US Bureau of the Census, *Census of the Population*.

It is apparent from the data in **Table 8** that minority populations in Missoula County and the City of Missoula are well below corresponding populations for the State of Montana and the United States.

7.3. AGE AND INCOME CHARACTERISTICS

To provide a general indication of the age and income characteristics of residents in Missoula County and the City of Missoula, **Table 9** presents several key statistics which are commonly used to define these characteristics.

Table 9: Other Socio-Economic Statistics for Missoula County and the City of Missoula

Area	Median Age	65 years and over (%)	Median Household Income (2010)	Per Capita Income (2010)	Persons Below Poverty Level (%)
Missoula County	34.3	10.90%	\$42,887	\$24,343	17.30%
City of Missoula	30.9	10.70%	\$36,547	\$22,543	22.10%
State of Montana	39.8	14.80%	\$43,872	\$23,836	14.50%
United States	37.2	13.00%	\$51,914	\$27,334	13.80%

Source: American Community Survey 2006-2010, US Bureau of the Census, *Census of the Population*.

The table above shows the populations of both Missoula County and the City of Missoula are notably younger than that of the State and Nation. Both geographic areas also have a lower percentage of elderly residents (age 65 and over) than seen in populations for the State of Montana or the United States.

A review of income statistics showed median household incomes levels for County and City residents were below State and National averages, while per capita income levels were near the State average but below the National average. However, County residents had higher income levels than residents in the City of Missoula. The percentage of Missoula County and City of Missoula residents living below poverty levels was well above that of the State and Nation.

7.4. ENVIRONMENTAL JUSTICE

Title VI of the US Civil Rights Act of 1964, as amended (USC 2000(d)) and Executive Order (EO) 12898 require that no minority, or, by extension, low-income person shall be disproportionately adversely impacted by any project receiving federal funds. For transportation projects, this means that no particular minority or low-income person may be disproportionately isolated, displaced, or otherwise subjected to adverse effects.

If a project is forwarded from the improvement option(s) considered using federal or state funds, the potential for affecting Environmental Justice populations will need to be further evaluated during the project development process.

If only local funds were used to advance a project, there would be no legal obligation to review and assess its potential effects to Environmental Justice populations. Addressing the issue would be at the discretion of local government during its project development activities.

8.0 CONCLUSION

This Environmental Scan Report is intended to identify the existing environmental resources and conditions within the Environmental Scan Area that may be potentially affected by transportation-related improvements or that may influence the identification of improvement options associated for the Maclay Bridge Planning Study. As a planning level scan, the information is obtained from various reports, websites and other documentation. This scan is not a detailed environmental investigation.

Information contained in this Environmental Scan will be reviewed with resource agency representatives during a future workshop. Applicable information will be incorporated into the Existing and Projected Conditions Report, which is currently under development and is a deliverable as per MDT's corridor study process.

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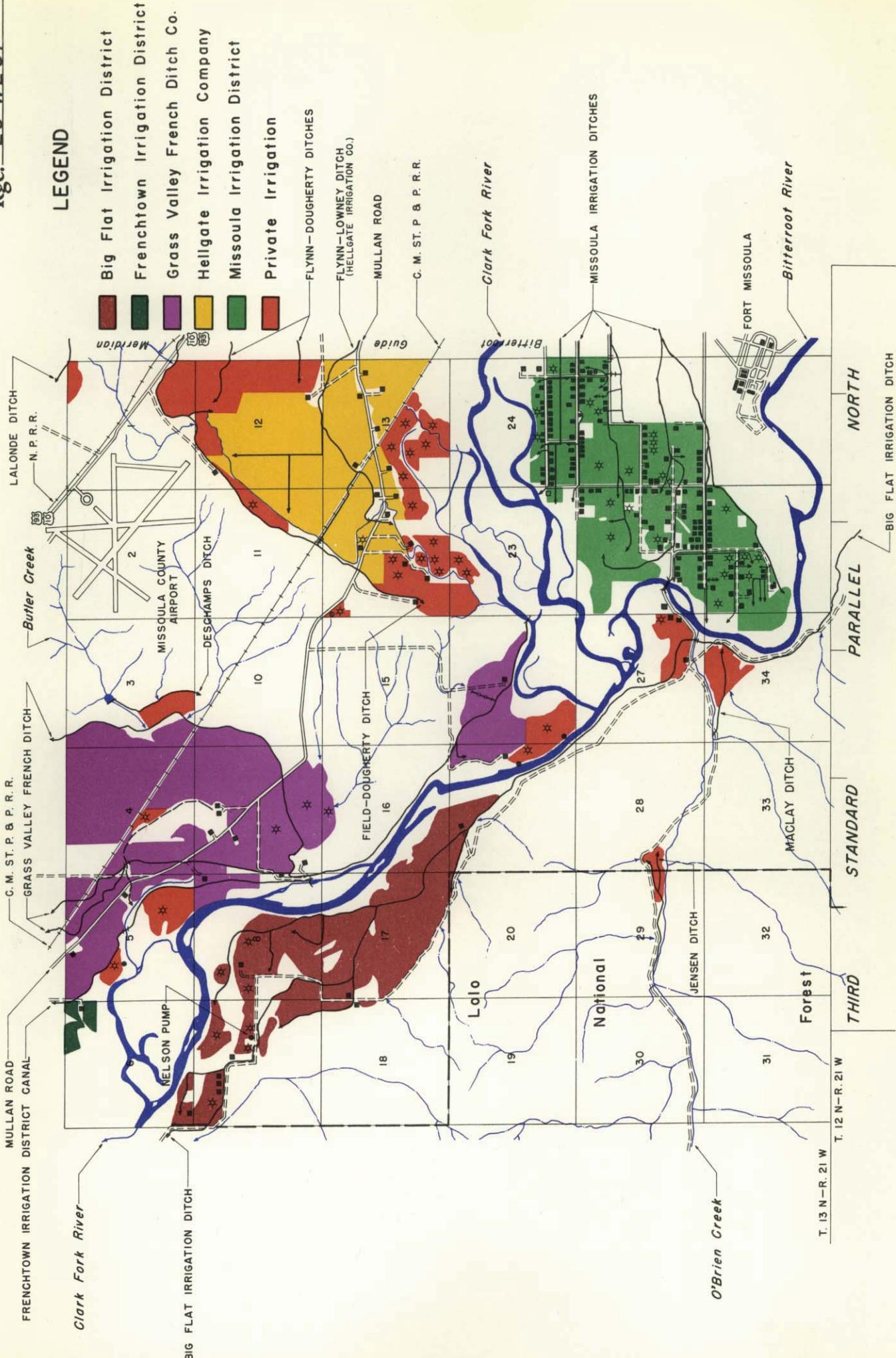
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APPENDIX A

Water Resources Survey Map of Irrigation Systems

Twp. 13 NORTH
Rge. 20 WEST



APPENDIX B

NRIS Animal Species of Concern Occurrence Map

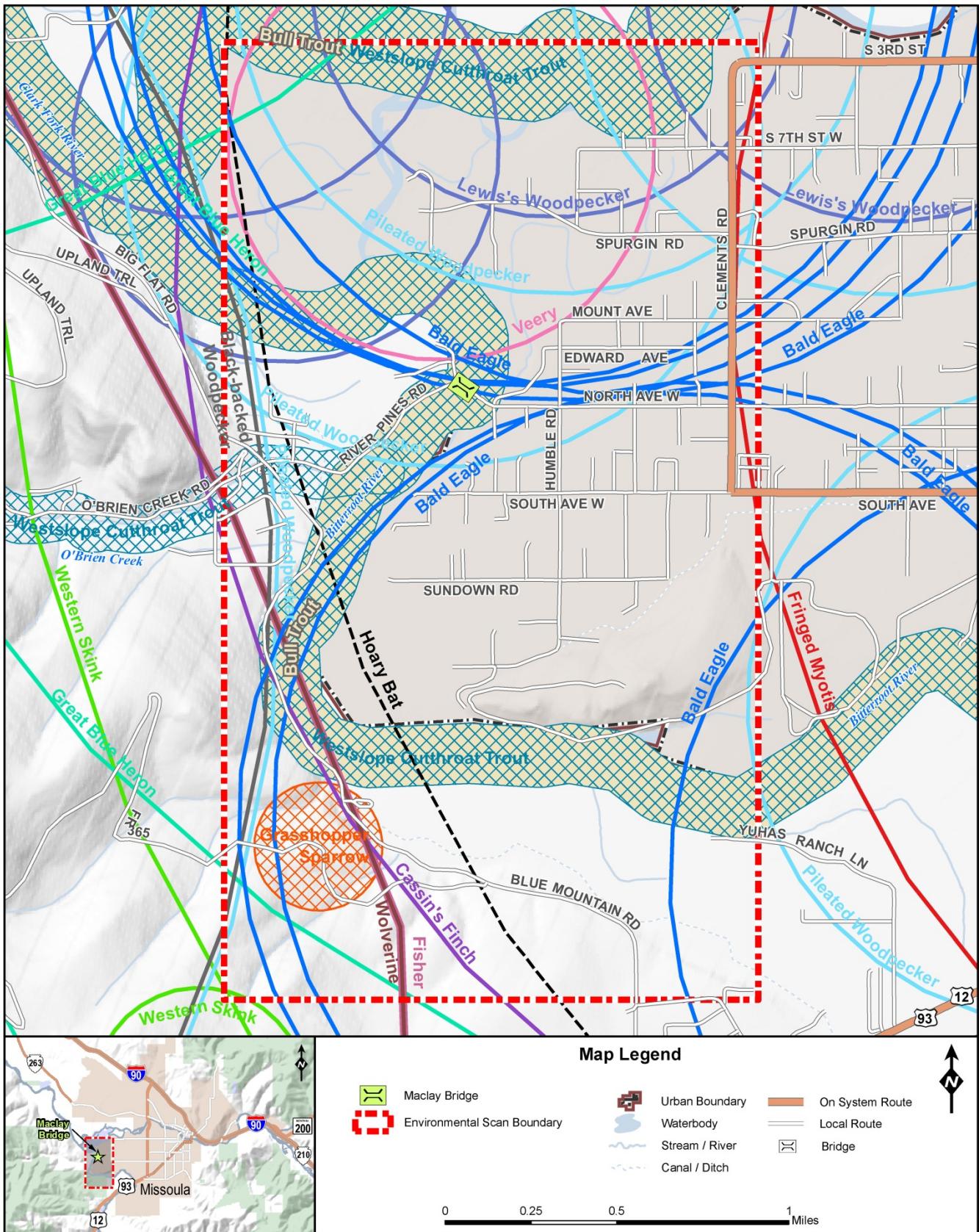


Figure A.1: Animal Species of Concern Occurrences within Study Area

APPENDIX C

Crucial Areas Planning System (CAPS) Report



**Montana Fish,
Wildlife & Parks**

CRUCIAL AREAS SUPPORTING LAYERS DATA DOWNLOAD AND REPORT – April 2011

The data and report you are receiving represent a subset of information publicly available online as part of the **Crucial Areas Planning System (CAPS) at** <http://fwp.mt.gov/wildthings/conservationInAction/crucialAreas.html>. Although the data are being provided to you in either a report and/or shapefile, the intended and appropriate use of the data are the same as if using the online application. ***Please read the following thoroughly:***

- CAPS data are intended to provide information during the planning stages of development projects; it is not intended for final decision making nor are the data intended to replace consultation with Montana Fish, Wildlife & Parks (FWP) staff.
- The finest data resolution is at the square mile section scale; use of these data layers at a more localized scale is not appropriate and may lead to inaccurate interpretations.
- The data have been provided to you at the section level even if your project covers only part of a section.
- If your project is within an Indian Reservation, no data will be provided for that area.
- Much of the data are based on expert knowledge, predicted habitat suitability and/or extrapolation. It is your responsibility to confirm a species presence or absence based on field sampling methods following FWP protocols.
- All overall values are scaled from 1 (highest) to 4 (lowest) EXCEPT for the Terrestrial Game Quality Contributing Data Layers which reflect a summary of points where the higher the number, the greater the value.
- An overall “Crucial Area” value has not been completed at this time.
- FWP requests that you acknowledge the agency as the source whenever you use FWP data in reports, papers, publications or in maps.

THE LAYERS

In addition to the metadata provided with the shapefile download, we encourage you to download and read the Crucial Areas Assessment Layer Documentation Summary from <http://fwpiis.mt.gov/content/getItem.aspx?id=42958> for additional information about the creation of the data.

AQUATIC SPECIES LAYERS

Aquatic Connectivity

Important stream corridors for fish species that require connected habitats to complete all/portion of their life history.

Game Fish Quality

44 Species

Areas recognized as important to fish species regulated by harvest. Valued for: species abundance, size and sport fish tier; other unique angling opportunities.

<u>Game Fish Life History</u>	<u>44 species</u>
Areas depicting habitats that support a game fish species spawning, rearing or thermal refuge areas.	
<u>Species of Concern</u>	<u>19 Species</u>
Montana's Fish Species of Concern (SOC); ranked according SOC status.	
<u>Native Fish Species Richness</u>	<u>85 Species</u>
Areas recognized as important to native fish assemblages.	

TERRESTRIAL SPECIES LAYERS

<u>Conservation Species</u>	<u>85 Species</u>
Conservation species were ranked based on the Species of Concern State Rank/Global Rank and their ESA status. Most species occurrences were based on a predictive habitat suitability model using a threshold rule that can be automatically generated from MaxEnt and used to convert continuous model output into two classes. The threshold that was used balances training omission, fractional predicted area, and the cumulative threshold value. The resulting output is a species distribution which is relatively "liberal" relative to other possible thresholds.	
<u>Species Richness</u>	<u>366 Species</u>
Species Richness represents the average number of species associated with each ecological systems in a square mile section.	
<u>Game Quality</u>	<u>12 Species</u>
Areas recognized as important to species with regulated harvest including: big game winter range, forest carnivores, prairie grouse, and Bighorn Sheep/Mountain Goat. Data based on expert knowledge.	

HABITAT

Riparian Areas and Wetland Areas

Habitat areas considered separately based upon their uniqueness, complexity and the diversity of species they support.

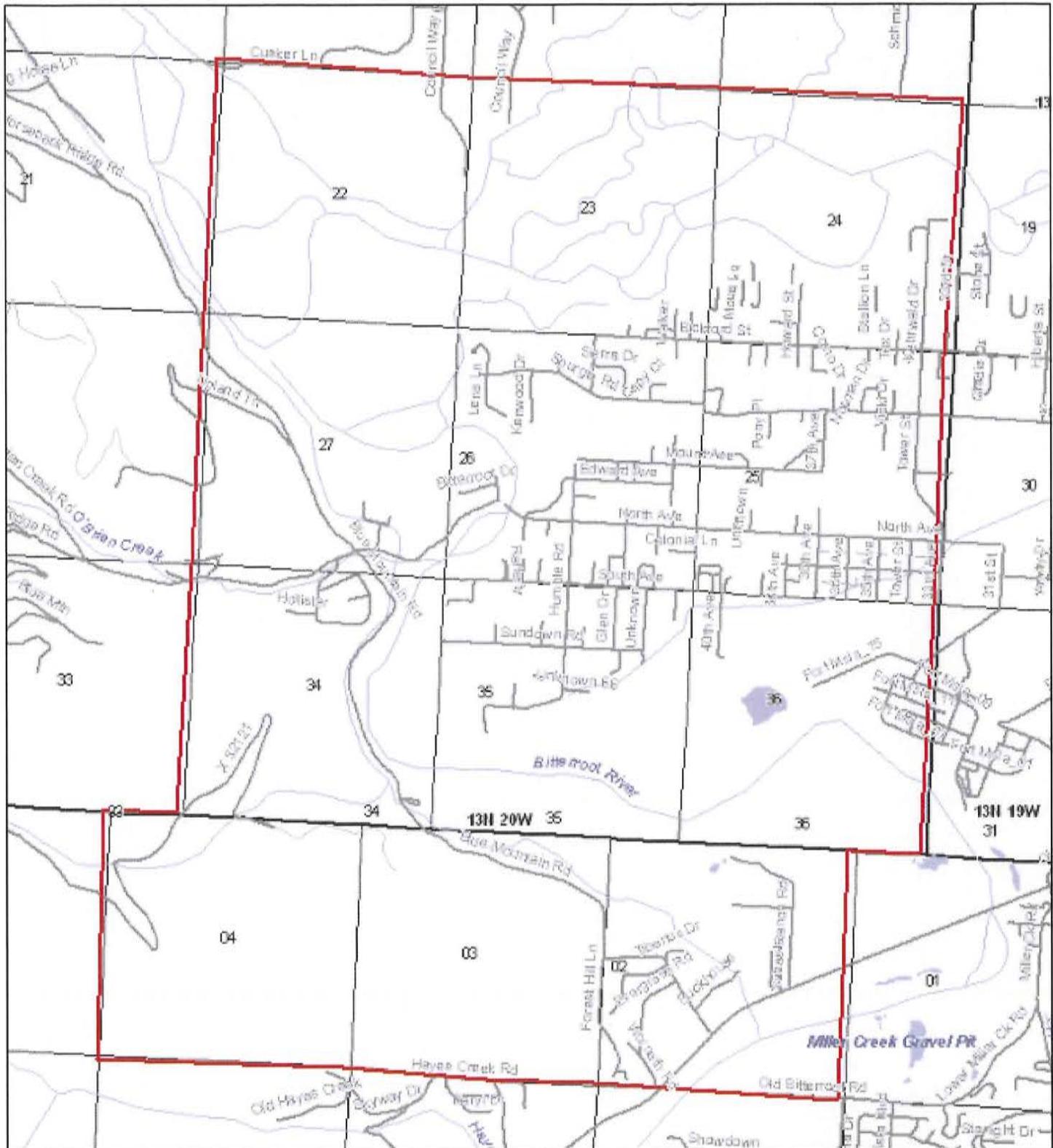
CONTACT INFORMATION

Data Services

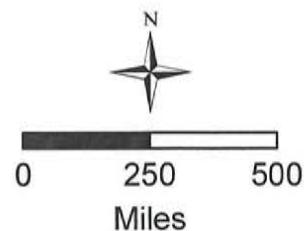
Lydia Bailey, Data Services GIS Manager (406) 444-5365 lbaily@mt.gov

Planning Services

Rob Brooks, Supervisor/Energy Coordination (406) 444-5786 robrooks@mt.gov
Doris Fischer, Land use Planning Specialist (406) 842-7467 dofischer@mt.gov



Maclay Bridge Study Area



**MacLay Bridge Study Area -
Crucial Areas Planning System
Analysis Report Terrestrial
Summary**

Number of sections in study area: 22

05/15/12

<http://fwp.mt.gov/gis/maps/caps/>

CAPS Category	Count of Section Classes			
	1	2	3	4
Terrestrial Conservation Species	6	9	7	0
Terrestrial Species Richness	17	2	0	3
Terrestrial Game Quality	0	8	0	14
Riparian Area	14	1	3	0
Wetland Area	7	5	0	9
Class Values: Highest = 1, Lowest = 4				

Summary of Conservation Species within Project Area			
Species	State and Global Rank	ESA Status	Count of Sections
Western Toad	S2G4		16
Northern Leopard Frog	S1,S4G5		8
Great Blue Heron	S3G5		2
Harlequin Duck	S2BG4		22
Bald Eagle	S3G5		22
Northern Goshawk	S3G5		5
Golden Eagle	S3G5		3
Peregrine Falcon	S3G4		21
Long-billed Curlew	S3BG5		1
Flammulated Owl	S3BG4		22
Lewis's Woodpecker	S2BG4		2
Pileated Woodpecker	S3G5		4
Clark's Nutcracker	S3G5		19
Brown Creeper	S3G5		17
Veery	S3BG5		22
Sage Thrasher	S3BG5		1
Brewer's Sparrow	S3BG5		15
Grasshopper Sparrow	S3BG5		21
Townsend's Big-eared Bat	S2G4		22
Western Spotted Skunk	S1S3G5		9
Northern Alligator Lizard	S3G5		1
Western Skink	S3G5		5

Summary of Species Richness within Project Area		
Ecological System	# of Species	Aproximate Acres
Aspen Forest and Woodland	169	2.9
Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest	180	1817.5

Summary of Species Richness within Project Area		
Ecological System	# of Species	Aproximate Acres
Rocky Mountain Mesic Montane Mixed Conifer Forest	161	1085.2
Rocky Mountain Ponderosa Pine Woodland and Savanna	187	125.6
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	152	4.3
Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland	144	0.4
Rocky Mountain Montane-Foothill Deciduous Shrubland	148	29.9
Rocky Mountain Subalpine Deciduous Shrubland	135	0.7
Rocky Mountain Lower Montane, Foothill, and Valley Grassland	159	3084.3
Rocky Mountain Subalpine-Upper Montane Grassland	126	0.4
Rocky Mountain Subalpine-Montane Mesic Meadow	146	10.6
Harvested forest-tree regeneration	143	37.2
Harvested forest-shrub regeneration	127	0.9
Harvested forest-grass regeneration	99	0.2
Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland	280	2520.3
Alpine-Montane Wet Meadow	194	174.6
Emergent Marsh	165	70.6
Rocky Mountain Subalpine-Montane Fen	107	2.9

Summary of Terrestrial Game Quality Values within Project Area							
Terrestrial Game Contributing Category	Count of Section Values						Highest Possible Value
	1	2	3	4	5	6	
Big Game Winter Range Habitat	1	8	0	0	0	0	2
Forest Carnivore Habitat	2	2	3	0	0	0	6

Maclay Bridge Study Area - Crucial Areas Planning System Analysis Report Aquatic Summary

05/15/12

fwp.mt.gov/gis/maps/caps/

Summary of CAPS Stream Values within Project Area					Summary of CAPS Lake Values within Project Area				
CAPS Category	Miles of Values				CAPS Category	Count of Lake Values			
	1	2	3	4		1	2	3	4
Aquatic Connectivity	10.0	0	0.9	0	Aquatic Connectivity	0	0	0	0
Species of Concern	0	10.9	0	0	Species of Concern	0	0	0	0
Native Species Richness	5.8	4.2	0.9	1.1	Native Species Richness	0	0	0	0
Game Fish Life History	0	12.0	0	0	Game Fish Life History	0	0	0	0
Game Fish Quality	5.8	1.1	5.1	0	Game Fish Quality	0	0	0	0
Class Values: Highest = 1, Lowest = 4					Class Values: Highest = 1, Lowest = 4				

Summary of Fish Species of Concern within Project Area		
Species	State Rank	Threatened or Endangered
Bull Trout	S2	Federally Threatened
Westslope Cutthroat Trout	S2	

Summary of Fish Native Species Richness within Project Area		
Species		
Bull Trout, Largescale Sucker, Longnose Dace, Longnose Sucker, Mountain Whitefish, Northern Pike Minnow, Peamouth, Redside Shiner, Slimy Sculpin, Westslope Cutthroat Trout		

Summary of Game Fish Life History within Project Area	
Life History	Species
Important rearing area for Cold Water Sport Fish	Rainbow Trout, Westslope Cutthroat Trout
Important spawning area for Cold Water Sport Fish	Rainbow Trout, Westslope Cutthroat Trout
Important thermal area for Cold Water Sport Fish	Brown Trout, Mountain Whitefish, Rainbow Trout, Westslope □ Rainbow

Summary of Game Fish Quality within Project Area		
Species		
Brook Trout, Brown Trout, Largemouth Bass, Mountain Whitefish, Northern Pike, Pumpkinseed, Rainbow Trout, Westslope Cutthroat Trout, Yellow Perch		

APPENDIX D

SHPO Research Files (03/21/2012)

Township:12 N Range:20W Section:2

PASSMANN DORI

1 / / 2003 2002 NRCS FIELD STAFF NEGATIVE FINDINGS REPORTS IN MISSOULA COUNTY MONTANA

CRABS Document Number: MO 6 25647 Agency Document Number:

Township:12 N Range:20W Section:2

PASSMANN DORI, ET AL.

1 / / 2002 2001 NRCS FIELD STAFF NEGATIVE FINDINGS REPORTS IN MISSOULA COUNTY MONTANA

CRABS Document Number: MO 6 25017 Agency Document Number:

Township:12 N Range:20W Section:2

BEERY DEREK S., ET AL.

12 / / 2003 FINAL CULTURAL RESOURCES REPORT FOR THE FEDERAL HIGHWAY ADMINISTRATION WESTERN FEDERAL LANDS , DTFH70-00-D- 00016 MILLER CREEK ROAD ENVIRONMENTAL IMPACT STATEMENT

CRABS Document Number: MO 4 26732 Agency Document Number: DTFH70-00-D-00016

Township:12 N Range:20W Section:3

WHISENNAND KRISTIN L., ET AL.

2 / 25 / 1998 LOLO NATIONAL FOREST ANNUAL REPORT 1997 PROGRAMMATIC AGREEMENT REGARDING CULTURAL RESOURCE MANAGEMENT ON NATIONAL FORESTS IN THE STATE OF MONTANA

CRABS Document Number: ZZ 1 20165 Agency Document Number: 97-LC-01

Township:12 N Range:20W Section:3

BACON SYDNEY

3 / 2 / 2010 FY2010 LOLO NF BLUE MOUNTAIN FOLF PARKING LOT

CRABS Document Number: MO 1 32431 Agency Document Number:

Township:12 N Range:20W Section:4

WHISENNAND KRISTIN L., ET AL.

2 / 25 / 1998 LOLO NATIONAL FOREST ANNUAL REPORT 1997 PROGRAMMATIC AGREEMENT REGARDING CULTURAL RESOURCE MANAGEMENT ON NATIONAL FORESTS IN THE STATE OF MONTANA

CRABS Document Number: ZZ 1 20165 Agency Document Number: 97-LC-01

Township:13 N Range:20W Section:23

TILL BARBARA A., ET AL.

11 / 15 / 1978 ARCHAEOLOGICAL SURVEY AT KELLY ISLAND

CRABS Document Number: MO 6 6202 Agency Document Number:

Township:13 N Range:20W Section:24

O'BOYLE VIRGINIA MAE

7 / 31 / 2001 CULTURAL RESOURCE INVENTORY REPORT ON THE MULLAN ROAD GRAVEL SOURCE IN MISSOULA COUNTY MONTANA

CRABS Document Number: MO 6 26756 Agency Document Number:

Township:13 N Range: 20W Section: 25

KINGSBURY LAWRENCE A.

8 / 31 / 1987 BLM CITY LOT CLEANUP AND FUTURE SALE

CRABS Document Number: MO 2 6153 Agency Document Number: 87-MT-070-075-09

Township:13 N Range: 20W Section: 26

THOMPSON R. WAYNE

4 / / 1994 PHASE II MACLAY BRIDGE PROJECT AREA

CRABS Document Number: MO 4 15808 Agency Document Number:

Township:13 N Range: 20W Section: 26

CAYWOOD JANENE M.

12 / 22 / 1993 PHASE II CRI OF MACLAY BRIDGE PROJECT AREA

CRABS Document Number: MO 4 15672 Agency Document Number:

Township:13 N Range: 20W Section: 26

TILL BARBARA A., ET AL.

11 / 15 / 1978 ARCHAEOLOGICAL SURVEY AT KELLY ISLAND

CRABS Document Number: MO 6 6202 Agency Document Number:

Township:13 N Range: 20W Section: 27

PASSMANN DORI

7 / 30 / 1996 KELLY ISLAND EXCHANGE

CRABS Document Number: MO 6 17931 Agency Document Number:

Township:13 N Range: 20W Section: 27

CAYWOOD JANENE M.

12 / 22 / 1993 PHASE II CRI OF MACLAY BRIDGE PROJECT AREA

CRABS Document Number: MO 4 15672 Agency Document Number:

Township:13 N Range: 20W Section: 27

THOMPSON R. WAYNE

4 / / 1994 PHASE II MACLAY BRIDGE PROJECT AREA

CRABS Document Number: MO 4 15808 Agency Document Number:

Township:13 N Range: 20W Section: 34

BEERY DEREK & BRIAN HERBEL

5 / 10 / 2006 CULTURAL RESOURCES INVENTORY FOR THE MONTANA DEPARTMENT OF TRANSPORTATION PROJECTS
STPHS 32(47) SAFETY IMPROVEMENTS SOUTHWEST OF MISSOULA

CRABS Document Number: MO 4 28802 Agency Document Number: STPHS 32(47)

Township:13 N Range:20W Section:34

WHISENNAND KRISTIN L., ET AL.

2 / 25 / 1998 LOLO NATIONAL FOREST ANNUAL REPORT 1997 PROGRAMMATIC AGREEMENT REGARDING CULTURAL RESOURCE MANAGEMENT ON NATIONAL FORESTS IN THE STATE OF MONTANA

CRABS Document Number: ZZ 1 20165 Agency Document Number: 97-LC-01

Township:13 N Range:20W Section:35

MCLEOD C. MILO, ET AL.

7 / 9 / 1987 BLUE MOUNTAIN RECREATION AREA: MACLAY FLATS

CRABS Document Number: MO 1 6108 Agency Document Number: 87-LL-3-3

Township:13 N Range:20W Section:35

CAYWOOD JANENE M.

12 / 22 / 1993 PHASE II CRI OF MACLAY BRIDGE PROJECT AREA

CRABS Document Number: MO 4 15672 Agency Document Number:

Township:13 N Range:20W Section:36

KRIGBAUM DAGNY

7 / 2 / 2010 CULTURAL RESOURCE INVESTIGATIONS OF A FORMER STATE ARMY GUARD TRAINING SITE & LANDFILL LOCATED AT FORT MISSOULA, MONTANA

CRABS Document Number: MO 6 32134 Agency Document Number:

Township:13 N Range:20W Section:36

KINSER JOHN AND DOUGLAS MACDONALD

6 / 6 / 2008 SURVEY AND TESTING REPORT: PROPOSED ROAD PAVING, FENCE AND PARKING LOTS. GEOLOGY AND FIELD RESEARCH BUILDINGS, FT MISSOULA, MISSOULA, MONTANA

CRABS Document Number: MO 6 30215 Agency Document Number:

Township:13 N Range:20W Section:36

OGBORNE JENNIFER H ET. AL.

3 / 6 / 2008 FORT MISSOULA DATA RECOVERY EXCAVATIONS, MISSOULA MONTANA

CRABS Document Number: MO 1 30152 Agency Document Number:

Township:13 N Range:20W Section:36

TAYLOR DEE C.

8 / 11 / 1989 INVENTORY AND EVALUATION OF ARCHAEOLOGICAL RESOURCES WITHIN THE FORT MISSOULA HISTORIC DISTRICT, MONTANA.

CRABS Document Number: MO 6 12732 Agency Document Number:

Township:13 N Range:20W Section:36

LIGHT PATRICK

11 / / 2000 CLASS III CULTURAL RESOURCE INVENTORY AND ARCHAEOLOGICAL MONITOR OF CONSTRUCTION ACTIVITIES FOR THE MOUNTAIN WATER COMPANY, FORT MISSOULA WATER TIE MAIN PROJECT, MISSOULA COUNTY MONTANA

CRABS Document Number: MO 6 25075 Agency Document Number:

Township:13 N Range: 20W Section: 36

MCDONALD JAMES R., ET AL.

12 / 20 / 1983 FORT MISSOULA HISTORIC RESOURCES

CRABS Document Number: MO 6 20985 Agency Document Number:

Township:13 N Range: 20W Section: 36

HALL DANIEL S.

1 / 21 / 2003 RESULTS OF PRELIMINARY HISTORICAL AND HISTORICAL ARCHAEOLOGICAL INVESTIGATIONS,
FORT MISSOULA, MISSOULA COUNTY MONTANA

CRABS Document Number: MO 6 25382 Agency Document Number:

Site #	Twp	Rng	Sec	Qs	Site Type1	Site Type 2	Time Period	Owner	NR Status
24MO00587	12 N	20W	2	Comb	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00586	12 N	20W	2	SW	Historic Vehicular/Foot Bridge	Null	Historic Period	Private	undetermined
24MO00587	12 N	20W	3	NE	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00587	13 N	20W	22	SW	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00520	13 N	20W	23	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00520	13 N	20W	24	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00520	13 N	20W	25	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00518	13 N	20W	26	SW	Historic Residence	Historic Outbuildings	Historic More Than One Decade	Private	Ineligible
24MO00521	13 N	20W	26	SW	Historic Vehicular/Foot Bridge	Null	Historic More Than One Decade	State Owned	Unresolved
24MO00520	13 N	20W	26	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00587	13 N	20W	27	Comb	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00519	13 N	20W	27	SW	Historic Residence	Historic Outbuildings	1890-1899	Private	CD
24MO00587	13 N	20W	34	Comb	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00954	13 N	20W	34	NE	Historic Irrigation System	Null	No Data	Private	undetermined
24MO00954	13 N	20W	34	NE	Historic Irrigation System	Null	No Data	Private	undetermined
24MO00520	13 N	20W	34	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00209	13 N	20W	35	Comb	Lithic Material Concentration	Null	Prehistoric More Than One Period	Forest Service	undetermined
24MO00589	13 N	20W	35	NE	Historic School	Null	1900-1909	Other	undetermined
24MO00517	13 N	20W	35	NW	Historic Residence	Historic Outbuildings	Historic Period	Private	CD
24MO1388	13 N	20W	35	NW	Historic Residence	Null	1950 and later	Private	undetermined
24MO00516	13 N	20W	35	NW	Historic Residence	Null	Historic More Than One Decade	Private	Ineligible
24MO00587	13 N	20W	35	SW	Historic Irrigation System	Null	1950-1959	No Data	undetermined
24MO00520	13 N	20W	35	Unk	Historic Irrigation System	Null	Historic More Than One Decade	State Owned	CD
24MO00266	13 N	20W	36	Comb	Historic Military Site	Historic Fort Site	1870-1879	Combination	NR Listed
24MO00937	13 N	20W	36	NE	Lithic Material Concentration	Null	No Indication of Time	State Owned	undetermined
24MO00937	13 N	20W	36	NE	Lithic Material Concentration	Null	No Indication of Time	State Owned	undetermined
24MO00188	13 N	20W	36	NE	Historic Military Site	Historic Trash Dump	Historic More Than One Decade	State Owned	undetermined
24MO1616	13 N	20W	36	NE	Historic Trash Dump	Null	Historic Period	State Owned	undetermined