3.0 EXISTING SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONDITIONS

This chapter presents an inventory of existing social, economic, and environmental conditions within the US 93 corridor.

3.1 Environmental, Cultural, and Aesthetic Resources

For full compliance with NEPA and MEPA regulations and permitting requirements, all state actions and all federally funded actions require some level of analysis to determine whether measures can be undertaken to avoid, minimize, or mitigate anticipated impacts to sensitive resources in a given project area. An Environmental Scan report was prepared for this Corridor Study and assessed the area between MP 68.25 to MP 90.9, an area larger than the study area defined for all other aspects of the Corridor Study, except where otherwise noted.

The information in this section is drawn from the Environmental Scan Report prepared for this study and is intended to be a planning-level overview of social, economic, and natural resources in the corridor. The analysis contained in this Corridor Study report is not intended to meet NEPA/MEPA requirements or provide a detailed accounting of all resources or potential impacts, but is intended to point out those resources or areas of cultural and environmental concern that would likely be a factor in future project decisions and permitting processes and, where possible, identify and accomplish advanced mitigation prior to further project development phases.

Land Ownership

Based on information collected for the US 93 Environmental Scan, land ownership in the corridor is predominantly private. Figure 3-1 shows land ownership in the area. As illustrated, there are state and federally-owned lands within a half mile of US 93 in some locations, including federal lands in the Bitterroot National Forest, the Lee Metcalf Wildlife Refuge, and the United States Forest Service (USFS) Blue Mountain Recreation Area and Trailhead. These areas would not be negatively impacted under any of the improvement options proposed in this Study.

Figure 3-1 Land Ownership

Public Lands

Section 4(f) of the Transportation Act provides protection of significant publicly owned public parks, recreation areas, or wildlife and waterfowl refuges and any land from an historic site of national, state, or local significance unless a determination is made that there is no feasible and prudent alternative to the use of land from the property and that the action includes all possible planning to minimize harm to the property resulting from such use. The Environmental Scan identified 17 potential Section 4(f) sites within the US 93 corridor, which are presented in Table 3.1. It should be noted that there may be additional Section 4(f) sites located within the study area, including culturally significant Tribal sites, that are not documented in Table 3.1.

Table 3.1 4(f) Resources within Project Area

Name	Type of 4(f) Resource	Town (Specific Location Relative to Corridor)
Bitterroot Corridor, Lewis and Clark National Historic Trail	Park/Recreational Site	Florence to Lolo (MP 68.25-83.4)
Whitetail Golf Course	Park/Recreational Site	Florence (MP 68.5)
Lee-Metcalf National Wildlife Refuge	Wildlife Refuge	Stevensville (MP 69-71)
Bass Creek Fishing Access Site	Park/Recreational Site	Florence (MP 70)
U.S. Forest Service Recreational Access	Park/Recreational Site	Florence (MP 70.5)
Sweeney Creek Trailhead	Park/Recreational Site	Florence (MP 73)
Playground	Park/Recreational Site	Florence (MP 75.4)
Chief Looking Glass Campground	Recreational Area	Florence (MP 77)
Ball fields (name unknown)	Park	Lolo (MP 83.1)
Travelers Rest State Park	Park	Lolo (MP 83.4)
Lolo School	Park	Lolo (MP 83.7)
USFS Blue Mountain Recreation Area and Trailhead	Recreational Site	Missoula (MP 89)
Linda Vista Public Golf Course	Recreational Site	Missoula (MP 89.8)
Pheasant Run Park	Park	Missoula (MP 90)
Garland Park	Park	Missoula (MP 90.5)
Fort Missoula Park	Park	Missoula (MP 90.75)
Wapikiya Park	Park	Missoula (MP 91)

The National Land and Water Conservation Fund Act (Section 6(f)) is intended to preserve, develop, and assure the quality and quantity of outdoor recreation resources for present and future generations. The Act established a funding source for both federal acquisition of park and

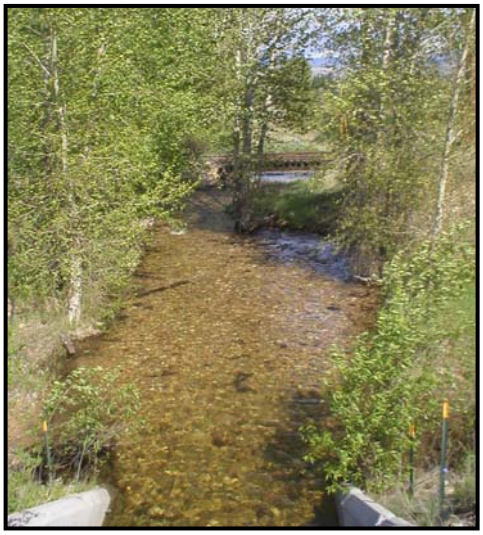
recreation lands, and matching grants to state and local governments for recreation planning, acquisition and development. Section 6(f) properties identified within the project area are presented in Table 3.2.

Table 3.2 6(f) Resources within Project Area

Name	Town
Florence Bridge Fishing Access Site	Florence (MP 74.7)
Poker Joe's Fishing Access Site	Florence (MP 71.3)
Chief Looking Glass Fishing Access Site	Florence (MP 76.9)
Missoula Co. Golf Course	Missoula
Missoula-Bikeway System*	Missoula
Missoula County Pineview Park*	Missoula
Chief Looking Glass Fishing Access Site	Missoula

*These sites are listed by MFWP as 6(f) sites in Missoula County – exact location is undetermined, but could be in study corridor

Land Use

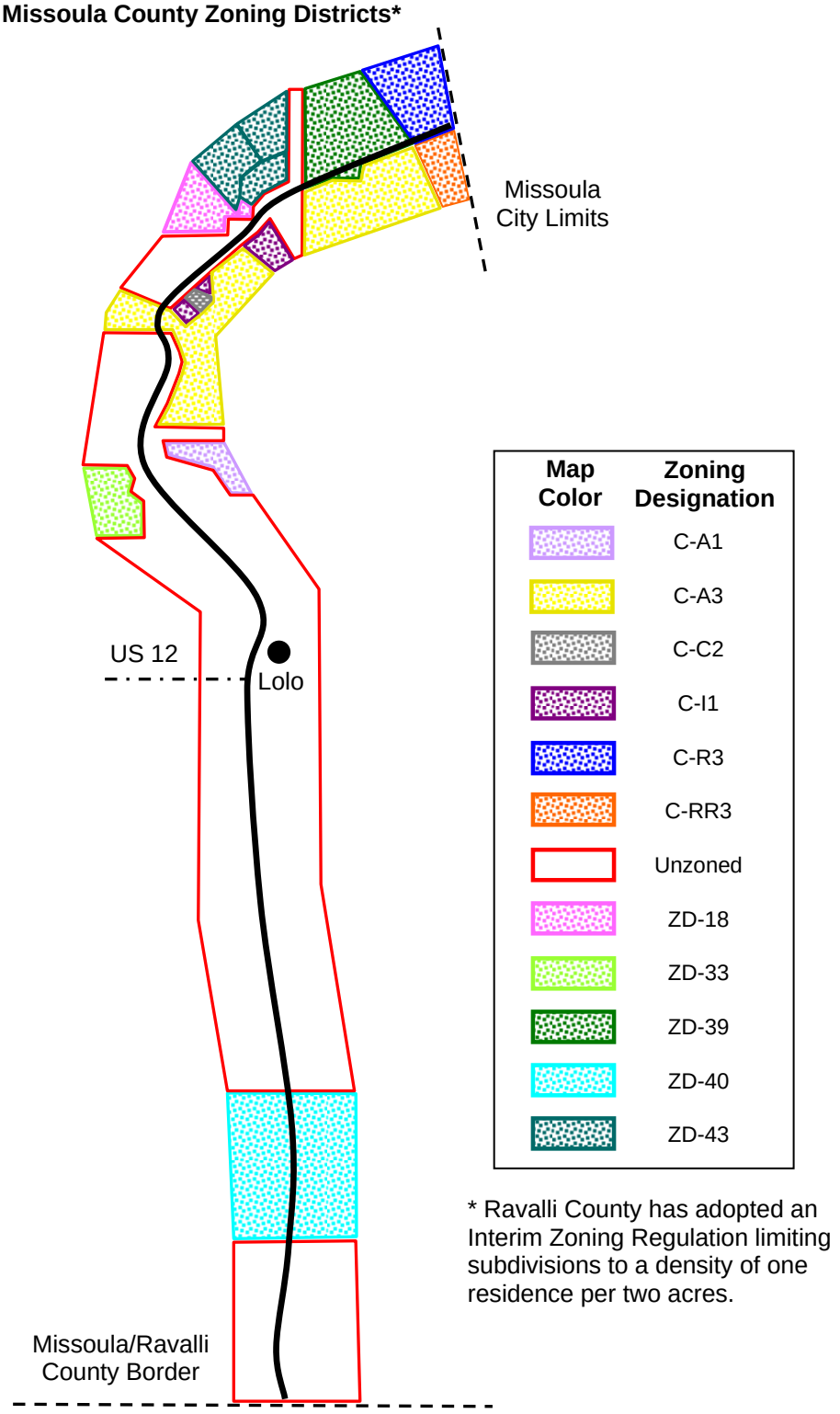


Land use in the southern portion of the corridor from Florence to Lolo is generally mixed-use commercial and residential. The Bitterroot River is located east of US 93 in this portion of the corridor. North of Lolo, the area becomes agricultural with the Bitterroot River still to the east. At approximately MP 86±, the highway is set high on a hill, with steep topography up to the west, and steep embankments to the Bitterroot River to the east. This topography continues until approximately MP 87.5±. As the highway approaches the City of Missoula, commercial and industrial development is more prevalent along the corridor, interspersed with agricultural areas. The highway crosses the Bitterroot River near MP 90.1±. From this point north to MP 91±, the area to the west is primarily commercial and land along the east side of the highway is mixed-use commercial and residential.

Missoula County Zoning Regulations

The majority of the study area is outside the Missoula city limits, and falls under the jurisdiction of county zoning ordinances. According to the Missoula County Zoning maps, there are 12 different zoning districts adjacent to or within one mile of US 93 between MP 74± and MP 91±, which include residential, commercial, industrial, and open space uses, as well as citizen initiated zoning districts. As seen in Figure 3-2, the majority of land adjacent to US 93 is unzoned.

Figure 3-2 Missoula County Zoning Districts*



* Ravalli County has adopted an Interim Zoning Regulation limiting subdivisions to a density of one residence per two acres.

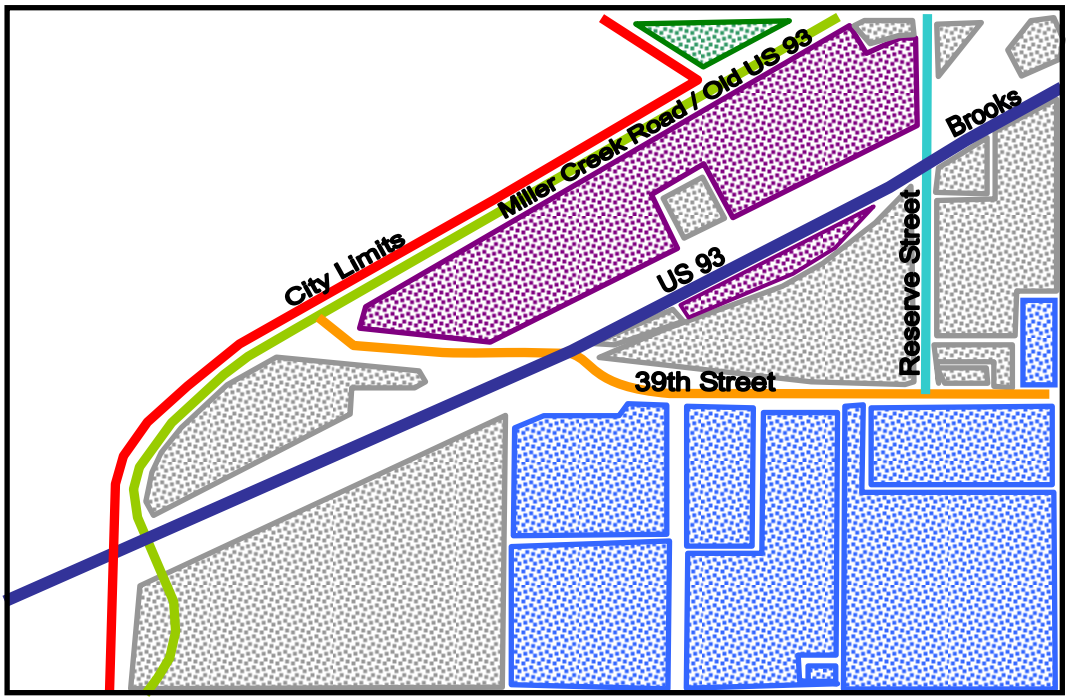
A short summary of zoning districts follows:

- C-A1 is classified as an open and resource lands zone encouraging recreational uses and natural resource production.
- C-A3 denotes a residential zoning district that provides for low density residential development of an open and rural character.
- C-C2 denotes a general commercial zone provided for uses of low intensity services which may require large areas of land.
- C-I1 is a light industry zone.
- C-R3 denotes a residential zone with a high density, multi-family development and potential for limited commercial use.
- C-RR3 is classified as a residential zone with a moderate density, single-family housing area.
- ZD-18 is a citizen initiated zoning district which is classified as a mixed use zone. This zone permits residential and commercial growth but excludes industrial uses.
- ZD-33 is a citizen initiated zoning district classified as a residential zone that includes parks and other recreational uses.
- ZD-39 is a mixed use citizen initiated zoning district. This zone permits residential uses and public buildings, such as libraries and community halls.
- ZD-40 is a citizen initiated zoning district classified as a single family residential zone.
- ZD-43 is a mixed use citizen initiated zoning district that permits residential and commercial uses.

Missoula City Zoning Regulations

The very northern end of the US 93 corridor study area between approximately the US 93 intersection with Miller Creek Road at MP 90± and the south side of the US 93 intersection with Reserve Street at MP 91± lies within the Missoula city limits. According to the Missoula City Zoning maps, there are four types of zoning districts adjacent to or within one mile of US 93 between the Missoula city limits and Reserve Street, including residential, commercial, industrial, and public lands uses, as depicted in Figure 3-3.

Figure 3-3 Missoula City Zoning Districts



Commercial areas are zoned C (Commercial), C-I (Commercial), C-II (Commercial), CLB (Commercial on-premise wine/beer establishment district), CLB-I (Commercial on-premise liquor/beer establishment district), CG (Commercial Gasoline Station District), BC (Restricted Commercial), SC (Shopping Center District), Wal-Mart Planned Commercial District, or a combination thereof.

Industrial areas are zoned D (industrial).

Residential areas are zoned R-I (Residential), RR-I (Restricted One-family residential), RLD-4 (Residential Low Density), PUD (Planned Unit Development District, Residential), A (Residential), or a combination thereof.

Public Lands are zoned P-II (Public Lands and Institutional Districts).

Lolo Regional Plan

The City of Lolo does not have specific zoning regulations; however, the overall goal of the Lolo Regional Plan is to "guide development, redevelopment, and community projects in a manner that will enhance the planning region as a place to live, work and recreate while preserving the region's unique character and natural resources." The Lolo Regional Plan features a map illustrating land uses in the Plan's Study Area including residential densities in terms of the number of dwelling units per acre. This map is included in Appendix D.

Ravalli County Zoning

Ravalli County has adopted an Interim Zoning Regulation limiting subdivisions to a density of one residence per two acres.. The County intends to create permanent countywide zoning in a two-phased process. The first phase will include density, land use, and height restrictions, as well as residential setback requirements. The second phase will address streamside setbacks and corridor zoning. At this time, Ravalli County is conducting a series of public meetings about the zoning process, and their goal is to have phase one in place by November 2008.

Prime Farmland

According to the Farmland Protection Policy Act of 1981, federal programs are required to minimize the unnecessary and irreversible conversion of farmland to nonagricultural uses and should be compatible with policies to protect farmland. Farmlands are classified as prime, unique, or of statewide or local importance.

The Environmental Scan compiled information regarding areas of prime farmland in the corridor area from the US Department of Agriculture, Natural Resource Conservation Service. As illustrated in Figure 3-4, there are a number of areas of Prime Farmland and Farmland of Statewide Importance directly adjacent and within one mile of the northern portion of the US 93 corridor. Many of the areas on the east side of the corridor north of MP 89± are now developed into residential areas and can no longer be used as farmland. Due to the perpendicular orientation of some areas in relation to the existing roadway alignment, no avoidance of these areas is feasible. An AD - 1006 Farmland Conversion Impact Rating Form would need to be prepared during an environmental review process if projects are forwarded following this Corridor Study, but it is unlikely that any detailed analysis would be required.

Soil surveys have not been completed for the majority of the southern portion of the corridor between MP 74 – 83±.

Figure 3-4 Prime Farmland & Geology

Surface Water

Based on available GIS data and field observations, the Environmental Scan identified the location of surface water bodies within the corridor study area. The largest surface water feature is the Bitterroot River, which flows from south to north on the east side of US 93 through most of the study area until crossing the roadway near MP 90±. Additionally, there are a number of Bitterroot River tributaries within the corridor. Surface water resources are listed in Table 3.3 and illustrated in Figures 3-5 and 3-6.

Table 3.3 Surface Water Resources in the US 93 Study Area

Approximate MP	Description
68.25 – 70.8	Bitterroot River is within ½ mile of US 93 corridor on east side
68.8	Crossing of unnamed intermittent stream
69.6	Crossing of unnamed intermittent stream (near location of Dawn's Crossing)
70.5	Crossing of Bass Creek
70.8 – 71	Bitterroot River is between ½ - 1 mile east of US 93 corridor
71.3	Crossing of Larry Creek (intermittent)
71.6	Crossing of intermittent creek that drains into Larry Creek on east side of highway
73	Crossing of Sweeney Creek
74	Crossing of One Horse Creek
75 – 76.5	Bitterroot River is between ½ mile and 1 mile east of US 93 corridor
75 – 90	Several intermittent and permanent streams, including Eight Mile Creek, Woodchuck Creek, Davis Creek, Miller Creek, and Moose Can Gully, drain from the east
75.5	Crossing of Tie Chute Creek (intermittent)
76.5 – 81	Squaw Creek and an unnamed tributary is within ½ mile of east side of US 93 and includes three highway crossings
77.8	Crossing of Carlton Creek, which drains into Squaw Creek on east side of US 93
79 – 79.4	Bitterroot River is between ½ mile and 1 mile east of US 93 corridor
79	Crossing of Maple Creek (intermittent)
79.5	Crossing of McClain Creek
81 – 82.1	Squaw Creek is between ½ mile and 1 mile east of US 93 corridor
81.7	Crossing of unnamed intermittent stream
82 – 84.8	Bitterroot River is between ½ mile and 1 mile east of US 93 corridor
82.9	Crossing of Lolo Creek
84	Open water areas mapped ½ mile east of US 93 corridor (associated with residential development)
84.8 – 90.1	Bitterroot River is within ½ mile of US 93 corridor on east side
85.7	Worden Creek, an intermittent stream, drains from the west
87	Crossing of Deadman Gulch (intermittent)
87.8	Crossing of Hayes Creek (intermittent)
89 – 90	Bitterroot River is between ½ mile and 1 mile west of US 93 corridor
90.1	Crossing of Bitterroot River

Figure 3-5 Surface Water North Half

Figure 3-6 Surface Water South Half

Information on the Bitterroot River and its tributaries within the study area was obtained from the Montana Department of Environmental Quality (DEQ). Section 303, subsection "d" of the Clean Water Act requires the State of Montana to develop a list, subject to EPA approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, DEQ determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL).

The study corridor travels through the Bitterroot Watershed. The Bitterroot Watershed is listed in the 2006 Integrated 303(d) Water Quality Report for Montana by DEQ. The water bodies within the Bitterroot Watershed that are located in the study area are all Category 5 water bodies. Category 5 water bodies' beneficial uses are impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat. TMDLs have not yet been written for water bodies in this watershed. According to the Water Quality Report, the Bitterroot Watershed TMDLs are under development, with completion expected by 2009. When TMDLs are prepared and implementation plans are in place, any construction practices would have to comply with the requirements set forth in the plan.

303(d)-listed water bodies within the Bitterroot Watershed that are located in the study area are summarized in Table 3.4.

Table 3.4 303(d) Listed Water Bodies in Study Area

Water Body	Location
Bitterroot River	Skalkaho Creek to Eight Mile Creek
Bitterroot River	Eight Mile Creek to Clark Fork River mouth
Bass Creek	Selway-Bitterroot Wilderness boundary to confluence with Bitterroot River
Miller Creek	Headwaters to Bitterroot River mouth
McClain Creek	Headwaters to Bitterroot River mouth
North Burnt Fork Creek	Confluence with South Burnt Fork Creek to Bitterroot River mouth
Lolo Creek	Mormon Creek to Bitterroot River mouth

Ground Water

Water in the Missoula Valley Aquifer currently meets all minimum drinking water quality standards or is of better quality than required under these standards.

Much of the project area overlies the Missoula Valley Aquifer, which is a Sole Source Aquifer. A Sole Source Aquifer designation is intended to protect drinking water supplies in areas with few or no alternative sources to the ground water resource, and where if contamination occurred, using an alternative source would be extremely expensive. The designation protects an area's ground water resource by requiring EPA review of any proposed projects within the designated

area that are receiving federal financial assistance. All proposed projects receiving federal funds are subject to review to ensure they do not endanger the water source (EPA, 2006b).

In addition to consulting with EPA regarding the Missoula Valley Sole Source Aquifer during project development, it is recommended that the Missoula County Local Water Quality District (LWQD) also be consulted. Since this agency has the authorization to develop and implement water quality protection ordinances, it is probable that water quality protection measures may have to be addressed at the local level, in addition to the federal level and state level.

Floodplains

GIS-based floodplain information was used to identify mapped flood zones, which are presented in Figures 3-7 through 3-10. The Bitterroot River is located east of US 93 and the railroad for the majority of the study area. The railroad embankment on the east side of US 93 generally establishes the Zone AE floodway and Zone AE floodplain associated with the river for nearly the entire corridor length.

Figure 3-7 Floodplains MP 69 – 75

Figure 3-8 Floodplains MP 75 – 80

Figure 3-9 Floodplains MP 80 – 85

Figure 3-10 Floodplains MP 85 – 91

Wetlands

Table 3.5 presents a summary of wetlands identified through a review of National Wetland Inventory (NWI) mapping and field reconnaissance. Figures 3-11 through 3-14 present wetlands maps generated from GIS-based NWI information. It should be noted that formal wetland delineation in accordance with USACE regulations will need to be conducted during an environmental review process if projects are forwarded following this Corridor Study.

Table 3.5 Wetlands in the US 93 Corridor

MP±	Description
68.5 – 71	Mapped riverine and palustrine wetlands areas run along the east side of US 93
71 – 72	Mapped riverine wetlands occur within the western and eastern buffer zones
73	Mapped riverine wetlands shown around Sweeney Creek and for a mile to its north as it crosses US 93
74 – 76	Mapped large palustrine wetlands stretch along the east side of US 93
74.1 – 75	Observed wet area 0.1 to 0.3 miles east of US 93
75.6 – 76.6	Observed wet areas on east side of US 93
76 – 78	Mapped and observed Squaw Creek riverine wetlands run along the river
78 – 80	Maple Creek riverine wetlands run along US 93's east side
78.1 – 78.2	Observed wet area on west side of US 93
78.5 – 79	Observed wet area on west side of US 93
80	To the east of the highway, area mapped and observed as palustrine wetlands is farmed
80.8 – 82	Highway runs through large mapped and observed palustrine wetlands
83	Highway crosses Lolo Creek and its palustrine and riverine wetlands areas
84 – 85	Mapped and observed riverine and palustrine wetlands of Bitterroot run along east side of US 93
85 – 90	Riverine and palustrine wetlands of the Bitterroot run along east side of US 93
85.9 – 86	Wet area observed on west side of US 93
86	Palustrine wetlands mapped to the east side of US 93
89 – 90	Mapped and observed Bitterroot River palustrine and riverine wetlands cross with river to east side of US 93

Figure 3-11 Wetlands MP 69 – 75

Figure 3-12 Wetlands MP 75 – 80

Figure 3-13 Wetlands MP 80 – 85

Figure 3-14 Wetlands MP 85 – 91

Hazardous Waste Sites

EPA and DEQ database searches were conducted in preparation of the Environmental Scan Report. The information recovered from these databases is summarized in the following section and presented in Figures 3-15 and 3-16.

Resource Conservation and Recovery Act (RCRA) Sites

Facilities identified in the RCRA database within the US 93 study area are summarized in Table 3.6.

Table 3.6 RCRA Sites in Study Area

Handler Name	City	Description
BDL Radiator	Florence	No information provided
Dale Thompson Residence	Florence	No information provided
Dan Edens Residence	Florence	No information provided
Florence Carlton Schools	Florence	CESQG*
Promark Inc Florence	Florence	No information provided
Western RE MFG Inc	Florence	No information provided
Bitterroot Motors	Missoula	CESQG*
S & D Flooring Distributors	Missoula	No information provided

*Conditionally Exempt Small Quantity Generator

Figure 3-15 Hazardous Material

Figure 3-16 Hazardous Material – Missoula

Leaking Underground Storage Tank (LUST) Sites

Facilities identified in the LUST database within the US 93 study area are summarized in Table 3.7.

Table 3.7 LUST Sites in Study Area

Site Name	City	Active?	Confirmed Release Date	Resolved Date
Al's Automotive and Small Engine Repair	Florence	No	4/25/2002	3/11/2003
Big O Tires	Missoula	No	10/23/1991	2/24/1994
Big O Tires	Missoula	No	4/22/1994	10/13/1995
Bitterroot Motors Inc	Missoula	No	5/11/1992	6/11/2002
Bitterroot Motors Inc	Missoula	No	6/6/1995	4/17/2003
Bitterroot Motors Inc	Missoula	No	8/9/1994	6/11/2002
Bonita Work Center	Missoula	No	11/28/1989	12/7/1992
Ernest M Smith	Missoula	Yes	8/28/1995	Unresolved
J C Frazer	Missoula	No	9/3/1993	6/17/1998
Lolo Work Center	Missoula	No	10/13/1989	8/18/1993
Missoula Fire Dept 39th St	Missoula	No	5/3/1991	7/11/1991
Noons 26	Missoula	No	4/15/1994	9/20/1995
Oles Country Store 14	Lolo	No	1/31/2005	6/29/2005
Town Pump Inc Lolo 1	Lolo	No	12/29/1987	6/24/1991
Town Pump Inc Lolo 1	Lolo	No	10/21/1993	1/18/1996
Town Pump Inc Lolo 1	Lolo	No	12/12/2003	11/29/2005
Town Pump Inc Lolo 2	Lolo	No	4/23/1998	7/20/1998
Town Pump Inc Lolo 2	Lolo	Yes	6/16/2006	Unresolved
Two Bears	Lolo	No	11/20/1996	4/7/1997
Two Bears Inc	Lolo	No	10/2/1997	1/22/1998
Vernon Stirm	Lolo	No	12/8/1993	6/18/1994

Petroleum Tank Release Compensation Sites

Table 3.8 presents facilities identified in the Petroleum Tank Release Compensation Sites database within the study area.

Table 3.8 Tank Release Sites in the Missoula County section of the US 93 Study Area

Facility Name	City	No. of Releases
Bitterroot Motors Inc	Missoula	1
Ole's Country Store 14	Lolo	1
Mini Mart 704 026	Missoula	1
Town Pump Inc Lolo 1	Lolo	2
Missoula Burger King	Missoula	1
Big O Tires	Missoula	2

Mine Sites

A summary of mines identified in the US 93 corridor is presented in Table 3.9.

Table 3.9 Mines in the US 93 Corridor

MP±	Description
81	Mine on the east edge of the buffer zone.
84	Mine just abutting the east buffer zone.
89-90	Mine on the east side of the buffer zone.
90-91	Mine on the west side of the buffer zone.

Further evaluation of hazardous waste sites would be needed to determine what level of impact they may have on the project corridor.

Air Quality

The City of Missoula as well as a portion of Missoula County are designated as non-attainment areas for particulate matter less than 10 microns in diameter (PM_{10}) under National Ambient Air Quality Standards (NAAQS). Since Missoula is currently meeting (PM_{10}) standards, the Missoula City and County Health Department has been preparing the documents necessary for the Environmental Protection Agency to redesignate the Missoula area from a "non-attainment area" to a "maintenance area" for particulate matter (PM_{10}). A map of the PM_{10} non-attainment area boundary may be found in Appendix E. The northern half-mile of the US 93 study corridor is within this non-attainment area (NRIS, 1998).

The City of Missoula and a portion of Missoula County are designated as a carbon monoxide attainment area subject to a carbon monoxide maintenance plan. The carbon monoxide maintenance plan includes transportation conformity motor vehicle emission budgets for 2000, 2010, and 2020 and demonstrates that Missoula will continue to meet the NAAQS through the year 2020. A map of the attainment area subject to the maintenance plan is included in Appendix E. The northern half-mile of the US 93 study corridor is within this attainment area.

In accordance with the federal Clean Air Act, proposed projects must be found to conform to the State Implementation Plan before they may be funded by FHWA.

Noise

A noise analysis was not conducted for this study. Based on a review of aerial photographs, there appear to be approximately 160 residential receptors directly adjacent to the US 93 corridor. Noise impacts to these receptors would require a detailed noise analysis prior to the initiation of an improvement project in the corridor.

Fish and Wildlife Resources

Signs of wildlife observed in the field are summarized in Table 3.10.

Table 3.10 Signs of Wildlife Observed During Field Reconnaissance

MP±	Description
69.5	Dawn's Crossing – a wildlife crossing
70	Bass Creek Fishing Access Site
71	Poker Joe's Fishing Access Site

Wildlife Habitat/Reserves

According to data from the Montana Comprehensive Fish & Wildlife Conservation Strategy and the American Wildlands Corridors of Life Project, the study area lies within a Wildlife Corridor from MP 74± to 82±. The majority of the area west of the study area is a Wildlife Core Area, as depicted in Figure 3-17. Core Areas are those areas where human contact is limited, ecosystem functions are still intact, and wildlife populations are able to flourish.

According to the Montana Natural Resource Information System (NRIS) and MFWP, the US 93 corridor passes through moose range from MP 83± to 90±. The entire study area is encompassed by whitetail deer range, and most is encompassed by mule deer range.

The Lee-Metcalf National Wildlife Refuge (Refuge) is located approximately 0.1 mile east of US 93 near MP 69.5±. The Refuge stretches along the Bitterroot River from south of the project area to near MP 72±. Songbirds, raptors, waterfowl, and other waterbirds are common within the Refuge. White-tailed deer, pheasants, and northern harriers are often seen in the upland fields. The ponds are home to muskrat, painted turtles, osprey, and bald eagles. Great-horned owls, pileated woodpeckers, and western terrestrial garter snakes can be found in the river bottom woodlands.

The Selway-Bitterroot Wilderness is located along the western edge of the study area and is part of the Bitterroot National Forest. Few visitors travel to certain portions of this Wilderness, which makes it appealing for elk, deer, moose, black bears, bighorn sheep, and mountain lions.

The 2004 report An Assessment of Wildlife and Fish Habitat Linkages on Highway 93 – Western Montana detailed fish and wildlife linkages along US 93. Within the project corridor,

the report identifies three fish and wildlife linkage areas, including the areas near Lolo Creek (MP 82±), Miller Creek (MP 85±, also known as the S-curves), and the Bitterroot River (MP 89±).

Wildlife habitat and linkage areas have been identified in this document based on existing wildlife travel patterns and land uses within the US 93 corridor. As development continues, the location of these wildlife habitat and linkage areas may change. For example, the construction of major residential subdivision developments within the corridor could impact the habitat and migratory routes of wildlife along US 93. Development trends and wildlife travel patterns would need to be reviewed over the planning horizon to determine if any substantive changes have occurred prior to any major construction project in this corridor.

Figure 3-17 Wildlife Corridor Areas

Given the wetlands and fish habitat associated with the Bitterroot River and the widespread ungulate distribution in the study area, it is anticipated that bald eagles occur in the corridor. According to the Miller Creek Road Environmental Impact Statement (EIS), the Bitterroot River in the project area serves as foraging and wintering habitat for bald eagles. Suitable nesting habitat is also present. A documented nest site is located along the Bitterroot River, near Lolo Creek. Data from the Montana Natural Heritage Program (MNHP) also shows bald eagles on the Bitterroot River in the area of MP 80±, 73±, and 70±. According to the Wildlife List for the Lee-Metcalf NWR, the bald eagle has been known to nest on the Refuge and is most likely to be seen on the Refuge in the winter.

Threatened and Endangered Species

The February 2008 USFWS list of endangered, threatened, proposed, and candidate species for Montana counties generally identifies counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed. Federally listed endangered, threatened, proposed, and candidate species are summarized in Table 3.11. It should be noted that the status of certain species may have changed since February 2008 and will be reviewed again during any subsequent NEPA / MEPA analysis for projects within the corridor.

Table 3.11 Federally Listed ESA Species

Common Name	Scientific Name	Status
Bull Trout	*Salvelinus confluentus*	Listed Threatened, Designated Critical Habitat
Canada Lynx	*Lynx Canadensis*	Listed Threatened
Gray Wolf	*Canis lupus*	Non-essential Experimental population
Grizzly Bear	*Ursus arctos horribilis*	Listed Threatened
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate

The USFWS has designated the portion of the Bitterroot River within the study area as critical habitat for bull trout. Migratory riverine bull trout are now rare in the mainstem Bitterroot River. Bull trout abundance in the project area typically averages one to two fish per mile.

Potential linkage for lynx exists just south of Lolo where the Bitterroot Valley narrows for approximately two to five miles. Even though there is no record of lynx in this area, there remains the possibility for lynx to use the area to cross the US 93 corridor.

It is likely that the gray wolf is present in the corridor given the abundance of ungulate range in the study area. According to MFWP, potential linkage exists in the Lolo to Florence portion of the corridor for wolf. There is evidence that this species has been along the Bitterroot River.

Potential linkage for grizzly bear exists just south of Lolo where the Bitterroot Valley narrows for approximately two to five miles. There are no records of grizzly bears within this area; however, at the present time there is the remote possibility for grizzly bears to use the area to cross the US 93 corridor.

It is possible that the yellow-billed cuckoo could be present in the study area. The Refuge Wildlife List reports that yellow-billed cuckoo presence on the Refuge is only hypothetical, meaning that although the Refuge is within the species' normal range, it has never been documented.

Species of Concern

Montana Species of Concern are native animals breeding in the state that are considered to be "at risk" due to declining population trends, threats to their habitats, and/or restricted distribution. The MNHP database shows several animal Species of Concern in the study area, including the fringed myotis, peregrine falcon, Townsend's big-eared bat, and westslope cutthroat trout. The database also shows a bird rookery on the east side of US 93, near MP 71±. The MNHP database also shows several plant Species of Concern in the study area, including the pointed broom sedge, toothcup, and shining flatsedge. Potential impacts to these species would require further study and coordination with the USFWS and MFWP prior to the initiation of an improvement project in the corridor.

Species of Concern distribution in the project area is presented in Figures 3-18 and 3-19.

Figure 3-18 Species of Concern – Wildlife

Figure 3-19 Species of Concern - Plants

Noxious Weeds

Table 3.12 summarizes the noxious weed species known or reported to occur in the study area.

Table 3.12 Noxious Weed Species Known or Reported to Occur in the Study Area

Common Name	Scientific Name	Designation Jurisdiction	County of Occurrence
Dodder	*Cuscata*	Federal	Missoula
Broomrape	*Orobanche*	Federal	Ravalli
Canada Thistle	*Cirsium arvense*	State	Missoula, Ravalli
Common Tansy	*Tanacetum vulgare*	State	Missoula, Ravalli
Common Toadflax	*Linaria vulgaris*	County	Ravalli
Dalmatian Toadflax	*Linaria dalmatica*	State	Missoula, Ravalli
Diffuse Knapweed	*Centaurea diffusa*	State	Missoula, Ravalli
Dyers Woad	*Isatis tinctoria*	State	Missoula
Field Bindweed	*Convolvulus arvensis*	State	Missoula, Ravalli
Houndstongue	*Cynoglossum officinale* L.	State	Missoula, Ravalli
Leafy Spurge	*Euphorbia esula*	State	Missoula, Ravalli
Orange Hawkweed	*Hieracium aurantiacum* L.	State	Missoula, Ravalli
Purple Loosestrife	*Lythrum salicaria, L. virgatum*	State	Missoula
Rush Skeletonweed	*Chondrilla juncea*	State	Missoula
St. Johnswort	*Hypericum perforatum*	State	Missoula, Ravalli
Sulfur Cinquefoil	*Potentilla recta*	State	Missoula, Ravalli
Tall Buttercup	*Ranunculus acris* L.	State	Missoula, Ravalli
Viper's Bugloss	*Echium vulgare*	County	Ravalli
Whitetop	*Cardaria draba*	State	Missoula, Ravalli
Yellow Flag Iris	*Iris pseudacorus*	State	Missoula
Yellow Starthistle	*Centaurea solstitialis*	State	Ravalli
Yellow Toadflax	*Linaria vulgaris*	State	Missoula, Ravalli

County Weed Control Supervisors and MDT Missoula Division vegetation management personnel should be contacted prior to any construction activities regarding specific locations.

Visual Resources

The southern portion of the US 93 corridor is mixed-use commercial and residential in nature. North of Lolo, the area becomes agricultural and views of the mountains are generally unobstructed. At approximately MP 86± to MP 87.5±, the highway is set high on a hill, with steep topography up to the west, and steep embankments down to the Bitterroot River to the east. As the highway

approaches the City of Missoula, commercial and industrial development is more visible along the corridor, interspersed with agricultural areas. The Bitterroot River is located east of US 93 until the crossing near MP 90.1±. From this point north to MP 91±, the area to the west is primarily commercial and land along the east side of the highway is mixed-use commercial and residential.

Historic, Cultural, and Archaeological Resources

The cultural resource review consisted of a review of the records at the Montana State Historic Preservation Office (SHPO) for Missoula and Ravalli counties, receipt of comments from the MDT historian regarding cultural resources, review of the US Highway 93- Hamilton to Lolo Final EIS, review of the Miller Creek Road Draft EIS, and field reconnaissance to provide a preliminary overview of potential resources within the study corridor. Figures 3-20 and 3-21 present cultural resources in and near the study corridor.

Figure 3-20 Cultural Resources North Half

Figure 3-21 Cultural Resources South Half

Table 3.13 identifies properties listed on or previously identified as eligible for the NRHP in previous studies.

Table 3.13 NRHP Eligible Sites within the US 93 Corridor

Name	Approximate Location	NRHP Status
Bitterroot Branch of the Northern Pacific Railroad	Parallels entire corridor	Eligible under Criterion A
Vernacular Dwelling	MP 68.7	Wood dwelling eligible under Criterion C
Homestead	MP 81.9	Eligible under Criterion A; two buildings also eligible under Criterion C
Traveler's Rest	MP 82.8	Registered as a National Historic Landmark
Lolo Trail	MP 82.8 (extending west along Highway 12 to Weippe Prairie, Idaho)	Registered as a National Historic Landmark
Sons of Norway Nordic Pines Hall	MP 88	Could be eligible in 2009
Big Flat Canal	MP 89	Eligible under Criterion A
Miller-Kelley and Cave-Gannon Ditch (Missoula Irrigation District)	Approx ½ mile SSE of MP 90	Eligible under Criterion A
Fort Missoula Historic District	Approx ¾ mile N of MP 90	Listed on National Register of Historic Places
Williams Residence	MP 71.9	Eligible under Criteria A and C

The historic and cultural resources listed in Table 3.13 should not be considered an exhaustive list because no cultural resource inventory has been completed. Any improvements to this segment of the US 93 corridor could impact historic properties. A detailed cultural resource inventory would be required prior to the initiation of an improvement project in the corridor which required new right-of-way.

3.2 Existing Social and Economic Conditions

Existing Population Profile

Assessment of population patterns contributes to a general understanding of overall trends in growth and long-term transportation needs in the study area. For this study, demographic data was collected in terms of potential catchment areas within the corridor. A catchment area represents the geographic distance from a transit station that passengers are willing to travel to access transit. Nationally, the catchment area for high capacity transit (bus or rail that serves regional destinations) is two miles.

For transit planning, it is important to understand both general population patterns as well as the employment distribution that surrounds potential stops or stations. Information about population patterns contributes to an understanding of the overall transportation needs in the Bitterroot Valley while information about employment distribution helps determine the potential travel demand for commuter trips and serves as a basis for determining regional travel patterns during the most congested travel periods. Table 3.14 presents household and population data in the region.

Table 3.14 Regional Population Profile (2005)

	Households 2005	Population 2005
US 93 Corridor (within 2 miles of US 93)	30,280	70,031
Bitterroot Valley (within 5 miles of US 93)	36,558	86,011

Source: US Bureau of Census Block Group Data, Montana Department of Labor & Industry for year 2005, and Montana Department of Revenue for year 2005

Table 3.15 presents the population within a two mile catchment of the downtown centers of each town in the study area.

Table 3.15 Catchment Area Population Profile (2005)

Town	Population 2005	Households 2005
Missoula	32,871	15,069
Lolo	3,796	1,412
Florence	1,629	634
Stevensville	2,745	1,228

2005 Source: US Census Bureau Block Group Data, 2000, and Montana Department of Revenue

Existing Employment Profile

It is also important to assess employment distribution within the study area to help determine the potential travel demand for commute trips and the regional travel patterns during the most congested travel periods. Table 3.16 presents employment within a two mile catchment of the downtown centers of each town in the study area.

Table 3.16 Catchment Area Employment Profile (2005)

Town	Retail Employees 2005	Non Retail Employees 2005	Total Employment 2005
Missoula	16,627	6,997	23,624
Lolo	492	363	855
Florence	346	207	553
Stevensville	925	238	1,163

Source: US Census Bureau Block Group Data, 2000, and Montana Department of Labor & Industry, 2005

Existing Density Profile

In transit planning, it is common to analyze population in terms of housing density. Nationally it has been shown that housing density, expressed as the number of housing units per acre, has a very high correlation to ridership on transit systems. For high capacity transit systems such as passenger rail, it is commonplace to find minimum housing densities of at least two units per acre within two miles of a station. Housing densities within the study area are presented in Table 3.17 and in Figure 3-22. The catchment area around each of the towns in the study area is shown in Figure 3-22 for reference purposes.

Table 3.17 Catchment Area Density Profile (2005)

Town	2005 Station Area Density (Dwelling Units/Acre)
Missoula	1.87
Lolo	0.18
Florence	0.08
Stevensville	0.15

Source: US Bureau of Census Block Group Data

Figure 3-22 Household Density within US 93 Catchment Area

Existing Land Use Profile

Current zoning, land use, and development patterns are good predictors of future population and employment concentrations. Figure 3-23 presents current land uses within two miles of the US 93 corridor. The catchment area around each of the towns in the study area is shown for reference purposes.

Figure 3-23 Land Use within US 93 Catchment Area

3.3 Plans and Regulations

This section summarizes relevant points from a number of local planning and regulatory documents.

Access Control Report (2006)

An Access Control Report was conducted for the portion of US 93 between Lolo and Missoula in 2006. The report identifies direct access points on US 93, which include residential, commercial, field, and public driveways. The report recommends the elimination of existing and future direct access to US 93 for many properties with access to other intersecting public roads. Access Control Report recommendations are included in Appendix F.

Miller Creek Road EIS (2008)

An Environmental Impact Statement (EIS) was conducted for the portion of US 93 south of Missoula, from approximately MP 86 to MP 91. The Preferred Alternative is intended to improve safety at the "Y" intersection of Upper Miller Creek Road and Lower Miller Creek Road with the addition of a traffic signal and reconfiguration of the intersection. The Preferred Alternative would not include a new connection to US 93, but the southbound approach to Miller Creek Road would add a second left-turn lane.

Hamilton to Lolo EIS (1997)

An Environmental Impact Statement (EIS) was conducted for the portion of US 93 between MP 49.0 at the northern end of Hamilton to MP 83.2 at the southern end of Lolo. The Preferred Alternative from the EIS includes the following elements in that portion of the US 93 corridor:

- Reconstruction of the highway along the existing alignment using a four-lane undivided section in rural areas with left turn and auxiliary lanes where appropriate, and a five-lane section with a center turn lane in developed areas.
- Construction of park-and-ride lots in or near the major population centers within the corridor to facilitate and encourage car pooling and use of public transportation.
- Establishment of a transportation management association (TMA) to provide public education, promote local efforts, and encourage methods to reduce traffic on the highway.
- Construction of turning lanes, traffic signals, wider shoulders, and bicycle facilities to enhance traffic flow and safety and to provide for pedestrian/bicycle movement.
- Realignment at Bass Creek Hill to improve grades and at Silver Bridge to provide a new crossing of the Bitterroot River.
- Use of curb, gutter, and sidewalk in urban areas to improve drainage, better define accesses, and provide for pedestrian and bicycle movement.

- Utilization of a combination of restrictive, permissive, and situational access control policies to encourage densification of existing growth areas and to discourage growth elsewhere.

Five Valleys Regional Transit Study (2008)

MDT completed a regional transit study in January 2008 for the rural areas of Missoula, Granite, Lake, Mineral, Ravalli, and Sanders Counties. The study was intended to identify the intercity bus transportation needs in the area and to develop a service plan for meeting these needs. Recommendations from the study include strengthening the rideshare and vanpool programs currently operated by MR TMA and offering limited bus service in the region, including phased service in the US 93 corridor. Phasing is recommended to ensure sufficient demand and adequate funding. Phase I would offer commuter service from Lolo to Missoula; Phase 2 would extend commuter services to Hamilton; Phase 3 would offer all-day service from Lolo to Missoula; and Phase 4 would extend all-day service from Hamilton to Missoula.

Missoula Urban Transportation Plan Update (2004)

The 2004 Missoula Urban Transportation Plan Update provides a multi-modal approach for addressing the current and anticipated future transportation needs for roadways/highways, transit, non-motorized facilities, and freight movement within and through the Missoula Metropolitan Planning Area. The following goals from the Plan are pertinent to this study.

1. Develop an interconnected, intermodal transportation network that provides reliability, equity, efficiency, choice, safety, and opportunity for all potential users.
2. Promote efficiency in land use and development patterns.
3. Enhance the natural and social environment.
4. Develop a transportation system that will maintain or improve air quality.
5. Formalize intergovernmental (primarily City, County, and MDT) and public/private partnerships in the development of the proposed system.
6. Promote and implement transportation system improvements that minimize the occurrence of and the potential for crashes that might result in the loss of health, life, and property.
7. Implement and promote transportation system improvements that provide effective movement of people and goods.

The Plan identifies US 93 as a principal arterial with 2000 daily traffic volumes in the range of 24,000 – 25,000 between Blue Mountain Road and Cochise Drive. The Plan also identifies US 93 as “Approaching Capacity” with a volume to capacity ratio between 0.8 and 1.0 for existing conditions (2000) as well as future conditions (2025).
Under the Current Transportation Issues section, the Plan identifies transit improvement needs

on US 93 between Blue Mountain Road and Cochise Drive and suggests extension of bus and trail systems as well as consideration of passenger rail service over the US 93 corridor.

Missoula Urban Comprehensive Plan (1998)

The 1998 Urban Comprehensive Plan is intended to provide a general framework for decision making and further planning in relation to development within the Missoula urban area. The urban area, as defined in the Plan, is generally contained within the Missoula Valley and includes the community of Lolo at the south end of the Missoula Valley. The following action strategies from the Plan are pertinent to this study.

1. Identify where in Missoula County certain types of growth should or should not occur and how the integration of developed lands and open spaces can best be accomplished.
2. Identify those developed and developing areas that are served by inadequate infrastructure.

Missoula Non-Motorized Transportation Plan (2001)

The 2001 Non-Motorized Plan is intended to be an amendment to the Missoula Urban Comprehensive Plan. The following goals from the Plan are pertinent to this study.

1. Increase the percentage of non-motorized trips and increase the percentage of residents and visitors who choose non-motorized modes for all trips, including work and school commute, social, recreational, and utility.
2. Create an on-street and off-street non-motorized network that connects all major destinations with a safe, convenient, interesting, and well-maintained circulation system that is easily accessed by all residents and visitors including those with disabilities.
3. Protect the Missoula area's natural resources, including air and water quality, riparian areas, plants, and wildlife.
4. Identify and preserve important non-motorized transportation corridors for future public and private development.

Transit Development Plan (TDP) – Missoula Urban Transportation District (MUTD) / Mountain Line (2007)

The May 2007 TDP summarizes Mountain Line's current services, sets forth a series of goals, outlines anticipated capital projects over a five-year planning period (FY 2007 – 2011), and discusses potential funding sources for transit improvements. Current services include fixed route bus service on eleven routes, ADA Comparable Paratransit Services, as well as a number of special services including transportation to various community events. The TDP lists the following goals for the FY 2007 to 2011 period:

- Contribute to a seamless, safe, convenient and accessible transportation system for the Missoula community.
- Reduce air pollution and traffic congestion in the valley.
- Provide transportation options to improve the quality of life in Missoula.

MUTD also intends to expand outreach and education efforts to increase awareness of public transportation options in Missoula and to seek increases in transit funding and improved funding partnerships.

Capital projects proposed over the five-year planning period include facility expansion and renovation, expansion and gradual replacement of the vehicle fleet, passenger shelters and amenities, marketing and education programs, and IT system and office equipment expansion,

With regard to funding, the TDP notes that approximately 19 percent of Mountain Line's revenues are generated from operations. Remaining revenues are received through property tax mills and government agencies. The TDP notes that in the future, MUTD would like transit funding to receive consideration equal to that of highway funding.

Lolo Regional Plan (2002)

The Lolo Regional Plan is intended to guide development, redevelopment, and community projects in a manner that will enhance the planning region as a place to live, work, and recreate while preserving the region's unique character and natural resources. The following goals from the Plan are pertinent to this study.

1. Protect natural resources in the planning region including hillsides, agricultural soils, wildlife, wildlife habitat, surface water, groundwater, and air.
2. Efficiently integrate new development and infrastructure with existing land use patterns.
3. Enhance the small town development pattern of the community of Lolo in order to encourage a broad range of uses ranging from more intense uses closer to the community core and less intense uses further from the core.

4. Reinforce the existing rural development pattern in the Lolo planning region.
5. Ensure that transportation systems are adequate to meet the present and future needs of the Lolo planning region. Provide a safe, integrated, and efficient transportation system that allows people and products to travel through the region without negatively impacting adjacent uses and character.
6. Protect open space resources. Provide recreational opportunities for community residents.
7. Maintain the integrity of the Community of Lolo apart from the Missoula Urban Area and adjacent Development Areas.
8. Preserve the rural character of the area while also establishing areas for additional development.
9. Recommend a land use pattern that collectively contributes to the community and the region while retaining cultural and physical characteristics that make the Lolo planning region unique.

Ravalli County Growth Policy (2004)

The 2004 Ravalli County Growth Policy is intended to establish a comprehensive set of long-range goals and goal-related policies to guide future growth and development. It seeks to provide an increased level of predictability to land owners, neighbors, and developers about where and how growth can be accommodated in ways that are compatible with fiscal and environmental concerns. It is designed to guide growth toward areas where it is expected and where it can be accommodated.

The following goals and objectives from the Growth Policy are pertinent to this study.

1. Promote private open land, farm land, ranch land, and recognition of agriculture and forestry as valued land resources.
2. Protect the air quality of Ravalli County.
3. Provide necessary infrastructure and public services to accommodate population growth and new development without undue impacts on the quality, quantity, and cost of service to existing residents.
4. Protect and enhance natural resources and public open space.
5. Plan for residential and commercial development.

Missoula City / County Growth Policy (2005)

The 2005 Update of the Missoula County Growth Policy sets forth a series of principles, goals, objectives, and implementation measures that were derived from three previous documents – the Missoula Urban Comprehensive Plan 1998 Update, the 1996 Policy Document: Planning for Growth in Missoula County, and the 1975 Missoula County Comprehensive Plan. These

planning documents were adopted by the governing bodies after extensive public involvement and comment.

The following goals and objectives from the Growth Policy are pertinent to this study.

1. Integrate development patterns with preservation or enhancement of the environment.
2. Maintain and improve air quality in the urban area.
3. Identify where in Missoula County certain types of growth should or should not occur and how the integration of developed lands and open spaces can best be accomplished.
4. Preserve the diversity, integrity, and unique values of neighborhoods, communities, and rural areas.
5. Encourage development at appropriate densities within the urban growth area.
6. Conserve resources and minimize transportation demand in rural areas by structuring commercial centers around existing facilities.
7. Encourage development to locate in areas where facilities are available and where the public costs of providing needed facilities and public services are lowest.
8. Encourage a land use pattern that facilitates use of all modes of transportation and provides for safe, healthy, affordable, efficient and convenient access to transportation connections for residential, commercial, industrial, and emergency traffic.
9. Provide adequate infrastructure to ensure a healthy natural, economic, and social environment in Missoula County. Ensure the availability and affordability of infrastructure such as sewer, water, transportation, public safety, health and social services, public lands, parks and other open spaces, cultural resources, and education.
10. Improve, rather than extend, the present transportation system network for the conservation of natural resources, energy and public funds.
11. Concentrate commercial and residential development in activity centers where the transportation system can support it.
12. Provide accommodations for and promote the use of more sustainable modes of transportation, including public transit, bicycle, and pedestrian facilities. Expand the service of the transportation network by providing families, commuters, and senior citizens access to community and neighborhood centers. Promote the use of renewable energy and less reliance on fossil fuels.
13. Address noise, air quality, and safety impacts of major transportation facilities on adjacent land uses.
14. Encourage a land use pattern that facilitates provision of emergency services.
15. Continue interjurisdictional cooperation between public safety agencies.

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