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FHWA-MT-EIS-95-01-F

F 5-1(9)6, U.S. HIGHWAY 93
EVARO - POLSON
MISSOULA AND LAKE COUNTIES, MONTANA

FINAL

ENVIRONMENTAL IMPACT STATEMENT

AND

SECTION 4(f) EVALUATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
STATE OF MONTANA
DEPARTMENT OF TRANSPORTATION

FHWA-MT-EIS-95-01-~~F~~D

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Evaro - Polson
Missoula and Lake Counties, Montana

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ENVIRONMENTAL IMPACT STATEMENT
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SECTION 4(f) EVALUATION

Submitted Pursuant To 42 U.S.C 4332(2)(C);
49 U.S.C. 303; MEPA 2-3-104 and 75-1-101
and Executive Order 11990

U.S. Department of Transportation
Federal Highway Administration
and
Montana Department of Transportation

Cooperating Agencies

U.S. Environmental Protection Agency
U.S. Department of Health and Human Services
Confederated Salish and Kootenai Tribes
Advisory Council on Historic Preservation
U.S. Department of Housing and Urban Development
U.S. Fish and Wildlife Service
U.S. Natural Resources Conservation Service
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs
U.S. Bureau of Reclamation

6/6/96
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This final environmental impact statement (EIS) is an examination of proposed improvements to U.S. Highway 93 from Evaro, Montana through Polson, Montana. This document discusses the purpose and need, alternatives, affected environment, environmental consequences, mitigation measures and comments, coordination and issues. It evaluates no action, alignment alternatives, lane configuration alternatives, transportation demand management measures, alternate highway routes and design options. A list of preparers and the final EIS circulation list are included in the document.

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2. SUMMARY

This document proposes and evaluates various alternatives to improve traffic operation and safety on U.S. Highway 93 (US 93) for a distance of 56.3 miles in Lake and Missoula counties, from Evaro, Montana (approximately 6.5 miles north of Interstate Highway 90) through Polson, Montana. Except for a one-half mile segment at the southern end in Evaro, the proposed action is contained within the Flathead Indian Reservation.

2.1. PURPOSE AND NEED FOR ~~THE PROPOSED~~ ACTION

The proposed action is needed to improve transportation on US 93, which is important to local, regional and nationwide travel. Transportation demand is high and is expected to continue to increase.

The high rate of population growth and increased tourism throughout western Montana are sources of growth in traffic on US 93. The highway is important to safety, social well-being and the economy. US 93 is the major north-south transportation route in western Montana. It provides interstate, regional and local access to natural resources-based industries such as agriculture, forestry, mining, tourism and recreation.

US 93 in the area of the proposed action, and for its entire length within Montana, is functionally classified as a principal arterial. It is part of the National Highway System (NHS)~~, as established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).~~

The highway is part of an extensive system of arterial routes: I-90; Montana highways (MT) 28, 35, 135, and 200 in Lake and Sanders counties; MT 83, which is east of the proposed action, in the Swan Valley of Lake and Missoula counties; and Montana secondaries (MTS)~~Federal Aid Secondary (FAS) routes~~ 211, 212, 382 and 559 in Lake and Sanders counties. (Figure 5.1-6)

Traffic is expected to continue to increase at the 1970-90 annual average rate of three percent, slightly more than doubling the existing volume by the design year 20202015. ~~In the design year, average daily traffic (ADT) will range from 10,510 at the permanent counter south of Ravalli to 13,110 in the Arlee area, 16,050 in the Ronan area and 21,700 in the Polson area.~~ Truck traffic is expected to continue to be 13.7% of total traffic south of MTS~~FAS~~ 212 and 10% north of MTS~~FAS~~ 212. (Figures 6.1-2 and 7.1-1)

The existing roadway has various geometric features that do not meet current standards for safety and design. Existing level-of-service (LOS) is poor, generally LOS D and E, compared with the desired standard of LOS B for rural highways. It is projected that by the design year 20202015 capacity of the existing facility will be exceeded, and the highway will be operating at LOS F in most sections. Accident numbers per mile are substantially higher than statewide averages. (Tables 6.1-15 and 7.1-2)

2.2. OTHER MAJOR PROPOSED ACTIONS BY GOVERNMENTAL AGENCIES

Planned improvements to other major highways in northwestern Montana will help ensure highway traffic is appropriately distributed throughout the region. Then the most direct, efficient routes can be used by local and regional traffic. These improvements include:

- Reconstruction of US 93 from Lolo to Hamilton and from Somers to Whitefish.
- Several recent and proposed future projects on MT 83 and 200, as described in Section 5.1.5.
- Reconstruction of US 2 from Columbia Heights to Hungry Horse.

- Various improvement projects on I-90.

- Mission Valley Power operations and maintenance facility on the west side of US 93 in Pablo.

2.3. ALTERNATIVES

2.3.1. Alternatives Under Consideration

Alternatives under consideration include No Action, alignment alternatives, lane configuration alternatives, transportation demand management (TDM) measures, alternate highway routes and design options. (Chapter 5)

No Action

No Action will continue the existing transportation system with no substantial improvement.

Alignment Alternatives

The existing alignment, also referred to as Alignment 1, consists of reconstructing the roadway with only minor adjustments to allow for widening, to improve horizontal curves and vertical grades and curves, and to avoid important features adjacent to the roadway. (Appendix A, aerial photographs and maps)

Arlee alignments: (Figure 5.1-1)

Alignment 1, the existing alignment.

Alignment 2, west of Arlee and passing between the town and the existing railroad tracks.

Alignment 3, east of Arlee passing west of the rodeo grounds, east of the schools and southwest of the fish hatchery.

Alignment 4, leaves US 93 at Dirty Corner (near the Missoula/Lake county line near Milepost 15.1), continues north across the Jocko River, then continues northwest to rejoin the existing highway approximately three miles north of Arlee.

Ronan alignments: (Figure 5.1-2)

Alignment 1 is the existing alignment.

Alignment 2 is a one-way couplet that will carry southbound traffic one block west of the existing alignment on First Avenue Southwest. Northbound traffic will remain on the existing alignment.

Alignment 3 passes along the west edge of the community, approximately 0.6 mile west of the existing alignment.

Alignment 4 passes along the west edge of the community, approximately one mile west of the existing alignment, west of the sewage treatment lagoons and, for a short distance, adjacent to the railroad and a community ballfield.

Polson alignments: (Figure 5.1-3)

Alignment 1 is the existing alignment, with a bridge over the Flathead River constructed adjacent to the existing bridge.

Alignment 2 passes along Caffrey Road south of Polson, connects with Kerr Dam Road, crosses the Flathead River with a new bridge and connects with the existing highway east of the fairgrounds.

Alignment 3 is identical to Alignment 2 along Caffrey Road, then veers west by one-third to one-half mile and crosses the Flathead River with a new bridge at a point approximately 3,500 feet downstream from the Alignment 2 bridge crossing. It continues north along an alignment that is west of the airport and connects with the existing highway 1.5 miles north of Polson.

Lane Configuration Alternatives

Lane configuration alternatives: (Figure 2.3-1)

Lane Configuration A is a two-lane, two-way highway with auxiliary lanes (Figure 5.1-5). Where needed, passing lanes will be added for short distances, designated left-turn bays will be constructed at important intersections and continuous two-way left-turn center medians will be constructed where there are high numbers of intersections and driveways.

Lane Configuration B is a four-lane highway with two traffic lanes in each direction. ~~A four-foot painted median will be included with this lane configuration.~~ Designated left-turn bays will be constructed at important intersections.

Lane Configuration C is a four-lane highway with a continuous two-way left-turn center median.

Lane Configuration D is a four-lane highway with a divided, unpaved center median. Designated left-turn bays will be constructed at important intersections.

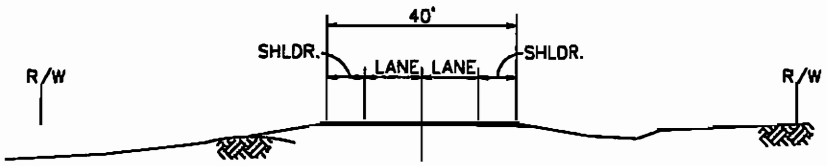
Transportation Demand Management

Transportation Demand Management (TDM) includes various measures that might help to reduce the traffic demand on the existing US 93 and thereby preserve or enhance traffic operation with highway improvement (Section 5.1.4). They include: 1) promotion and development of the use of railroads, airlines, and buslines for passenger and freight traffic; 2) development of facilities for and promotion of carpooling and ride-sharing; and 3) promoting shifts of existing and future traffic from US 93 to alternate highway routes, which are discussed in more detail in the next section.

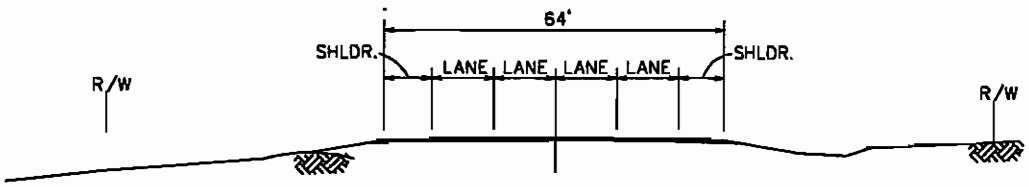
It is desirable to encourage more use of TDM, but analysis indicates TDM measures are not likely to substantially reduce existing and design year ~~2015~~2020 traffic demand and volume on US 93. Therefore they will not substantially reduce the need for highway improvement.

Implementation of TDM measures is a desirable, long-term goal, and any highway improvement should be designed to: 1) not reduce or adversely affect TDM activities already occurring; and 2) accommodate and promote increased use of TDM.

A Transit Development Plan (TDP) is being prepared ~~to identify TDM measures that will~~ by the Montana Department of Transportation (MDT) and Lake County. The TDP will determine and evaluate public transit needs and recommend measures to meet them. It is expected that measures such as park and ride facilities, bus turnouts



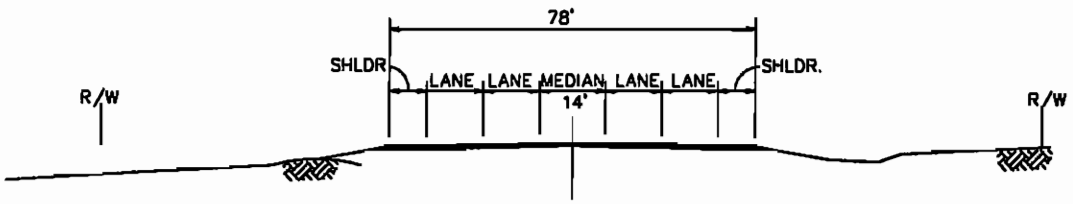
LANE CONFIGURATION A
2 LANE RDWY
MINIMUM RIGHT OF WAY WIDTH, 160 FT.



LANE CONFIGURATION B
4 LANE RDWY.
GENERAL RIGHT OF WAY WIDTH, APPROX. 180 FT.

NOTE:
EXCEPT WHERE OTHERWISE NOTED, LANES ARE 12.0' WIDE, SHOULDERS ARE 8.0' WIDE.

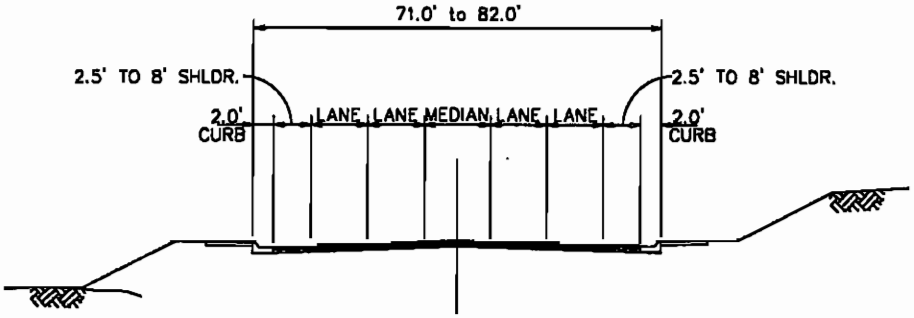
LANE CONFIGURATION ALTERNATIVES **FIGURE 2.3-1**



LANE CONFIGURATION C

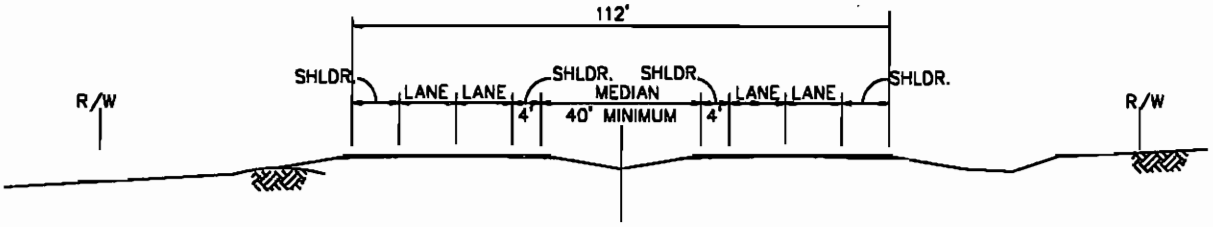
4 LANE WITH MEDIAN/LEFT TURN BAY

GENERAL RIGHT OF WAY WIDTH, APPROX. 200 FT.



LANE CONFIGURATION C

4 LANE WITH MEDIAN/LEFT TURN BAY WITH CURB & GUTTER



LANE CONFIGURATION D

4 LANE DIVIDED

GENERAL RIGHT OF WAY WIDTH, APPROX. 220 FT.

PAVEMENT WIDTH, 72' TOTAL(36' EACH SIDE)

NOTE:

EXCEPT WHERE OTHERWISE NOTED, LANES ARE 12.0' WIDE, SHOULDERS ARE 8.0' WIDE.

LANE CONFIGURATION ALTERNATIVES (CONT.) FIGURE 2.3-1

or other features may be recommended to be included in the final design of highway improvement. The results of the TDP will be available for use with the final environmental impact statement (EIS).

Alternate Highway Routes

Alternate highway routes might reduce highway traffic demand by promoting shifts of existing and future traffic from US 93 to other existing highway routes. Alternate routes that have been suggested include MT 83 in the Swan Valley and MT 200-382-28 in Lake and Sanders counties.

Alternate highway routes are not evaluated in detail in this document. Though it may be desirable to encourage more use of these alternate routes to take advantage of the better operating conditions, it is not likely enough traffic will shift to these routes to substantially reduce traffic demand on US 93.

It is likely that where substantially greater distances do not discourage them, drivers already are selecting, and will continue to select, these routes instead of using US 93. Current traffic volumes on these highways are less than one-fifth the volume on US 93, an indication of the importance of US 93 as the most direct route between Missoula and Kalispell/Glacier National Park.

Implementation of measures that will require, by law or regulation, vehicles to use these alternate routes and to improve these routes to multiple lane highways is not recommended because:

- No practical and acceptable method has been identified to shift the traffic, and
- Substantial improvement (such as additional traffic lanes) to these highways and substantially increased traffic volume may have environmental impacts equal to or greater than impacts that have been identified if US 93 is improved.

Design Options

Major design options include partial access control, wildlife crossings, frontage roads, pedestrian and bicycle facilities, truck routes and traffic signals. Section 5.1.6 presents detailed information about all design options considered with the alignment and lane configuration alternatives. After the final EIS is complete, it is recommended the participation of community teams (developed during the environmental analysis phases) be continued through project design phases. This will help ensure that local involvement is continued to help select the most appropriate design options for the proposed action.

2.3.2. The Preferred Alternatives ~~The Preferred Alternative~~

There are two preferred alternatives that have been identified. The alternative preferred by the Montana Department of Transportation is referred to in this document as the MDT Preferred Alternative. The alternative preferred by the Confederated Salish and Kootenai Tribes (CSKT) is referred to in this document as the CSKT Preferred Alternative.

2.3.2.1. The MDT Preferred Alternative

The following is a description of the MDT Preferred Alternative, which was recommended by the Interdisciplinary (ID) Team, MDT and the Federal Highway Administration (FHWA). ~~The Tribal Council of the Confederated Salish and Kootenai Tribes (CSKT) has not made a recommendation for a preferred alternative.~~

Alignment 1, the existing alignment, is recommended as the preferred alignment from Evaro to Polson. At Polson, Alignment 1 is recommended as the designated route for US 93, and Alignment 3, which is approximately 5.8 miles long and passes south and west of Polson, is recommended as a truck route and as an alternate route around Polson.

Preservation of a corridor of land for future highway construction is recommended on Alignment 2 through the Arlee area and Alignment 4 through the Ronan area. Corridor preservation will be accomplished by measures such as: 1) cooperative access control and land use planning and regulation with tribal and local governments; 2) purchase of easements, options or right-of-way (ROW) by MDT; and other public/private cooperative methods.

Table 2.3-1 and Figure 2.3-2 indicate specific locations for each of the lane configurations in the MDT Preferred Alternative.

Lane Configuration A (a two-lane highway with ~~passing lanes and other~~ auxiliary lanes in some areas) is recommended for 3.8 miles in the city of Polson, where a substantial portion of highway traffic is shifted to Alignment 3. Lane Configuration A also is recommended initially for Alignment 3 at Polson until further traffic volume requires a four-lane highway.

Lane Configuration A is not recommended for other sections of the highway because it does not adequately accommodate existing and projected future traffic volumes, and it does not meet the purpose and need for the proposed action.

Lane Configuration B (a four-lane highway), with ~~a four-foot-wide painted center median and~~ designated left-turn bays where appropriate, is recommended for most of the length of the proposed action (approximately 37.6 miles on the existing alignment and, when warranted by traffic volume, 5.8 miles on Alignment 3 at Polson).

Approximately 14.5 miles of the highway is recommended to be constructed as Lane Configuration C (a four-lane highway with a continuous two-way left-turn center median). Recommendations for Lane Configuration C generally have been made where the highway passes through existing communities and where high concentrations of highway intersections and driveways occur.

Lane Configuration D (a four-lane highway with a divided, unpaved center median approximately 40-feet wide), is recommended for a short distance (0.4 mile) in the area of the Evaro wildlife corridor. As indicated by project biologists, it provides better opportunities for constructing safe and effective wildlife crossings.

Lane Configurations B, C and D, each providing four lanes for highway traffic, will increase the highway's capacity to several times the capacity of a two-lane highway (the existing roadway or Lane Configuration A) and will ensure the highway will accommodate projected traffic volume through the design year ~~2015~~2020.

2.3.2.2 The CSKT Preferred Alternative

Details of the CSKT Preferred Alternative are presented in Section 5.4. Following is a summary of major features of the CSKT Preferred Alternative:

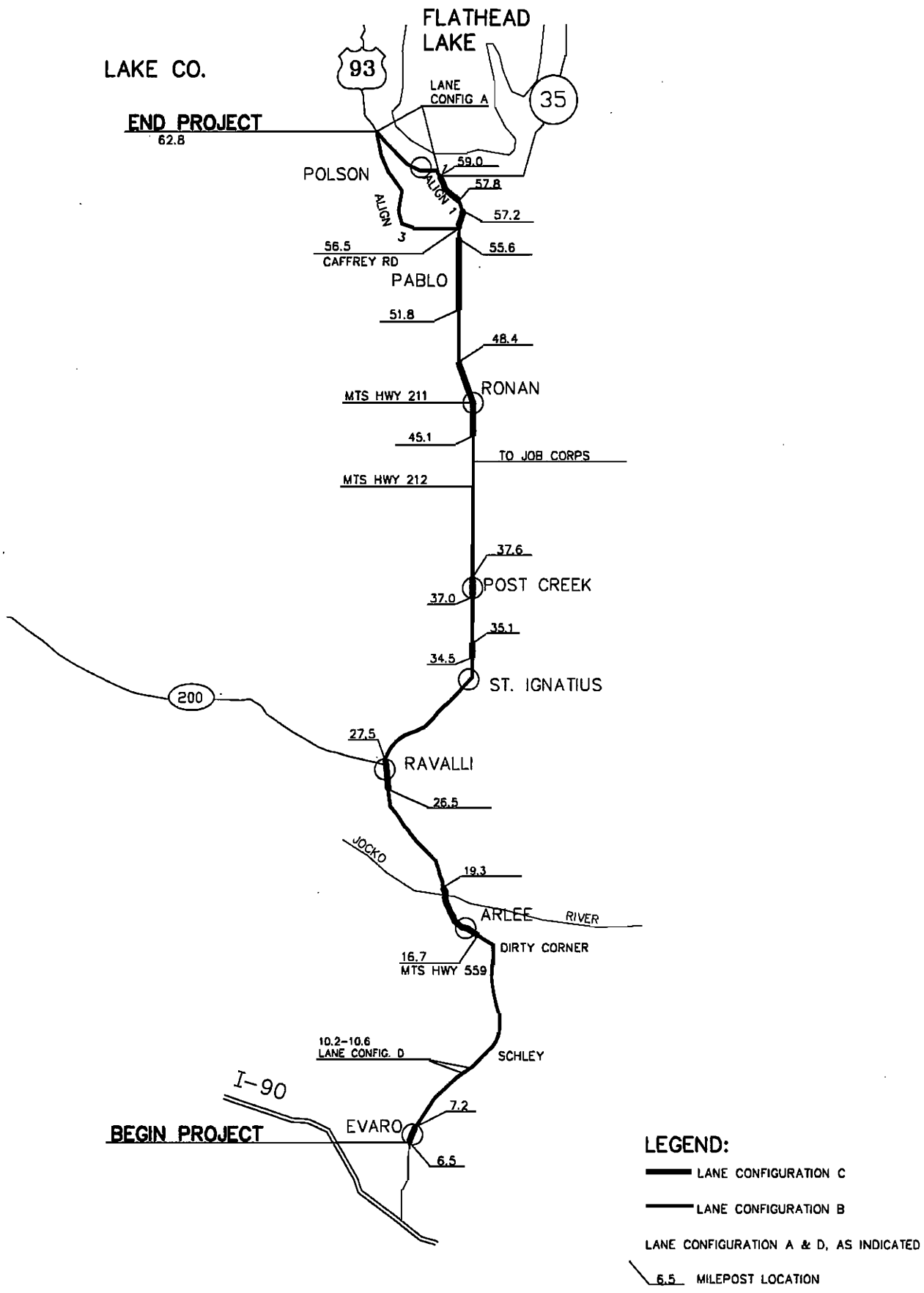
With this alternative, the existing alignment, Alignment 1, is recommended throughout the length of the proposed action. Preservation of a corridor for future highway construction is recommended in the Ronan area but not in the Arlee area. Neither an alternative route nor preservation of a corridor for future highway construction around Polson is recommended.

Lane Configuration A is recommended throughout the length of this alternative with continuous two-way left-turn lanes, truck climbing lanes, slow moving vehicle lanes, left-turn lanes and right-turn lanes where appropriate.

Table 2.3-1 Lane Configuration of the MDT Preferred Alternative

LOCATION (Mileposts)		LANE CONFIGURATION				LOCATION DESCRIPTION
FROM	TO	A	B	C	D	
6.5	7.2			0.7		Evaro
7.2	10.2		3.0			Evaro to vicinity of Joe's Smoke Ring
10.2	10.6				0.4	Evaro wildlife corridor (Joe's Smoke Ring to Schley homesites)
10.6	16.7		6.1			Schley homesites to Jocko Road (MTSFAS 559)
16.7	17.3			0.6		Jocko Road (MTSFAS 559) to Arlee
17.3	18.4			1.1		Arlee
18.4	19.3			0.9		Arlee to north of Dumontier Road
19.3	26.5		7.2			North of Dumontier Road to Ravalli
26.5	27.5			1.0		Ravalli
27.5	34.5		7.0			Ravalli to north of St. Ignatius
34.5	35.1			0.6		Vicinity of Lemery/Pinsoneault roads, north of St. Ignatius
35.1	37.0		1.9			North of St. Ignatius to Post Creek area
37.0	37.6			0.6		Post Creek area
37.6	45.1		7.5			Post Creek area to area south of Ronan
45.1	46.1			1.0		Area south of Ronan
46.1	47.9			1.8		Ronan
47.9	48.4			0.5		Ronan to vicinity of Baptiste/Spring Creek roads, north of Ronan
48.4	51.8		3.4			North of Ronan to Pablo
51.8	53.6			1.8		Pablo
53.6	55.6			2.0		North of Pablo, vicinity of Courville/Light roads to North Reservoir Road/Minesinger Trail
55.6	56.5		0.9			North Reservoir Road/Minesinger Trail to Caffrey/Ford roads
56.5	57.2			0.7		Caffrey/Ford roads to highway segment with narrow width due to hill and railroad tracks
57.2	57.8		0.6			Highway segment with narrow width
57.8	59.0			1.2		Highway segment with narrow width to MT 35
59.0	61.1	2.1*				MT 35 to Flathead River bridge, Polson
61.1	62.8	1.7**				Flathead River bridge to end of proposed action, Polson
SUBTOTAL: EXISTING ALIGNMENT		3.8	37.6	14.5	0.4	
56.5	62.8		5.8			Alignment 3 around Polson
TOTALS		3.8	43.4	14.5	0.4	

Morrison-Maierle and Carter Burgess, 1994.
* No change in existing lane configuration. ** Addition of a continuous two-way left-turn center median.



LANE CONFIGURATION OF THE MDT PREFERRED ALTERNATIVE FIGURE 2.3-2

2.4. SUMMARY OF IMPACTS OF THE MDT PREFERRED ALTERNATIVE

Tables 5.2-1 through 5.2-4 present a comparison of environmental impacts for No Action and each of the alignment alternatives and lane configuration alternatives under consideration. Major environmental impacts of the MDT Preferred Alternative are summarized in following paragraphs.

- The capacity of the highway will be increased substantially, which will result in traffic operation at LOS B in the design year, instead of LOS F with No Action. Operating efficiency will be improved substantially, reducing congestion ~~and congestion will be eliminated.~~

- ~~Accident rates and frequencies are expected to decline. In particular, b~~Based on ~~similar~~ experience near the proposed action, serious accidents involving injuries and fatalities are expected to decline substantially.

- With the implementation of partial access control and land use planning and regulation, strip development and other highway-related development can be better controlled.

- Approximately 360~~370~~ acres of land will be converted to new highway ROW.

- Approximately 46 acres of farmland that is prime or unique farmland or farmland of statewide or local importance will be converted to highway ROW. Most of this conversion is caused by Alignment 3 in Polson.

- The physical prominence of the highway will increase with related barrier effects and visual effects.

- The highway will be more desirable for commuters, which may encourage population growth.

- Carbon monoxide (CO) will be substantially less and PM_{10} concentrations will be slightly less than for No Action ~~emissions will decrease. PM_{10} emissions will not differ substantially from No Action except in Polson.~~ In Polson, with construction of Alignment 3, traffic volumes in the city, as compared with No Action will be substantially reduced. Traffic operation and safety in and through Polson will be improved. Impacts on businesses during construction will be less severe, and PM_{10} emissions will be reduced in the Polson non-attainment area.

- Approximately 40 acres of wetlands will be filled or otherwise destroyed by construction of the MDT Preferred Alternative. These wetlands will be replaced by wetlands developed to provide similar or better functions and values. Replacement wetlands generally will be farther from the highway, which will be beneficial to wildlife.

- Special wildlife crossings will be constructed in the Evaro area and other areas of the proposed action. Wildlife crossings may benefit grizzly bear and other wildlife species by improving migration routes and decreasing or avoiding highway mortality.

- Direct use of land from several Section 4(f) properties will be required.

- Relocation of several buildings, including approximately five~~eight~~ residences, will be required on the existing alignment. Relocation of approximately three residences will be required on Polson Alignment 3.

- Continuation of major highway traffic through Arlee and Ronan will continue adverse traffic operation and safety conditions. Short-term impact to some businesses will occur during construction.

- Approximately 40.42 wetland acres and 7.65 acres of non-wetland riparian vegetation would be lost to construction over the 15 to 20 year construction period. Additionally, approximately 0.18 acre of non-wetland waters of the U.S. would be filled during construction of the new bridge over the Flathead River on Polson Alignment 3.

2.5. AREAS OF CONTROVERSY

Areas of controversy related to the proposed action include:

- Whether the benefits of the construction of a four-lane highway, which will improve safety and increase traffic carrying capacity by several times, outweigh environmental impacts, such as contributing to increased numbers of commuters in the growing population. A survey conducted in 1994 for CSKT, of both tribal members and non-tribal members living on the Flathead Indian Reservation, indicates agreement that serious problems exist with driving conditions on many sections and overall on the highway. Approximately 55% of both groups rated overall driving conditions as having serious problems. The survey also indicated that 63% of tribal members and 63% of non-tribal members either supported or strongly supported converting US 93 to an undivided four-lane highway with turn bays at intersections (Lane Configuration B). Overall, there was more support for a four-lane highway than a two-lane highway, but tribal members indicated more support than non-tribal members for a two-lane highway. Approximately 47% of tribal members, compared with 31% of non-tribal members, either supported or strongly supported maintaining US 93 as a two-lane highway and adding turn bays and passing lanes[1].

- Concern that construction of a substantially improved highway will contribute to changes in the rural character of the Flathead Indian Reservation.

- Concern that construction of a substantially improved highway will adversely impact traditional cultural values of the Flathead Indian Reservation.

- Whether the benefits of improved safety and traffic operation, which will occur if new highway routes are constructed around the communities of Arlee, Ronan and Polson, outweigh the adverse economic impacts that may occur to existing highway-oriented businesses.

2.6. UNRESOLVED ISSUES WITH OTHER AGENCIES

~~Major unresolved i~~Issues that require resolution include:

- A final~~draft~~ Section 4(f) evaluation has been completed (Chapter 12). A determination has been made that there are no feasible and prudent alternatives that will avoid Section 4(f) use~~; has not yet been made. This item will be completed in the final Section 4(f) evaluation that will be included with the final EIS.~~

[1]Bioeconomics, Inc. and Boyer Consulting Services, Draft, U.S. Highway 93 Corridor Use and Opinion Survey, Summary Results and Survey Methodology, 10 November 1994, Pages 10-11. The percentages do not add to 100% because some respondents indicated support or strong support for both improvement alternatives and some indicated support for neither.

- A land use study is being completed by CSKT and Lake and Missoula counties, with support from MDT, to better define existing and future land use concerns. ~~Information and recommendations from this study will be included in the final EIS.~~

- A TDP is being completed by MDT for Lake County~~; results and recommendations related to the TDP will be included in the final EIS.~~

- The proposed action has been coordinated with CSKT, which has recommended a preferred alternative that has some similarities and some differences with the MDT Preferred Alternative~~, which has not yet expressed an opinion for a preferred alternative.~~ Section 2.3.2 presents details about the MDT Preferred Alternative and the CSKT Preferred Alternative.

~~An Aquatic Lands Conservation Ordinance (ALCO) 87-A permit will be required for all stream and drainage crossings of the proposed action. The CSKT Shoreline Protection Office (SPO) will administer the ALCO permit process.~~

2.7. OTHER FEDERAL AND TRIBAL ACTIONS REQUIRED

Other federal actions that must be completed include the following:

- A Section 404 (of the Clean Water Act) permit will be required from the U.S. Army Corps of Engineers for areas where construction of the proposed action will result in discharge of dredged or fill material into streams or wetlands. A draft Section 404(b)(1) evaluation has been included in Appendix C~~, and a final Section 404(b)(1) evaluation will be included in the final EIS.~~

~~Air quality conformance evaluations and determinations, as required by the December 1993 regulations promulgated by the U.S. Environmental Protection Agency, have not yet been completed for the Ronan and Polson PM_{10} non-attainment areas. They will be completed and discussed in the final EIS.~~ The required regional analysis and conformity determination for the MDT Preferred Alternative in the Polson and Ronan PM_{10} nonattainment areas, has been completed by the Montana Department of Transportaion and approved by the Federal Highway Administration. It is included in Appendix F of this final EIS. The analyses show that, in both Polson and Ronan, the MDT Preferred Alternative (also referred to in the regional analysis as the "Action Scenario") will result in a reduction in PM_{10} emissions compared to the Baseline Scenario and therefore fulfills the requirements for conformity determinations for included projects.

- Floodplain permits from the local floodplain coordinators and the Federal Emergency Management Agency will be required for all stream crossings located in delineated floodplains.

- Water quality standards by the state of Montana do not apply on the Flathead Indian Reservation. On 27 February 1995, the U.S. Environmental Protection Agency (EPA) approved the application from CSKT for "treatment as a state" (TAS) to administer Section 303 of the Clean Water Act. CSKT has adopted water quality standards of reservation-wide applicability, effective 27 April 1995.

- An Aquatic Lands Conservation Ordinance (ALCO) 87-A permit will be required for all stream and drainage crossings of the proposed action. The CSKT Shoreline Protection Office (SPO) will administer the ALCO permit process. A separate ALCO permit will be needed for each action considered to be a project by the tribal SPO.

2.8. SUMMARY OF MITIGATION MEASURES

Right-of-Way and Access Control

Property that is required for construction will be subject to the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Air Quality

- Gravel and dirt shoulders will be surfaced.
- Curbs and gutters will be added in Arlee, Ravalli, Ronan, Pablo, and Polson.
- Gravel and dirt approaches will be consolidated wherever possible and surfaced from the edge of the highway ROW.
- The proposed action will provide new surfacing throughout.

Water Quality

Where necessary to clean bridge decks, as part of construction or during maintenance after construction, the decks will be swept, and the debris will be collected and taken to a proper disposal site. This will be done in lieu of hosing the bridge decks with water, which carries the debris into the streams.

Wetlands

Replacement will be done according to the following priorities:

1. On-site replacement or enhancement is the preferred type of mitigation.
2. When on-site mitigation is not practical, off-site replacement or enhancement will be considered.
3. When the above are not practical, "wetland banking" will be considered; this allows the highway agency to develop wetland complexes in the general area, and then, as wetland losses occur, the acreage will be subtracted.

A wetland mitigation plan has been prepared which demonstrates that losses of wetland functions and values anticipated with the proposed action will be replaced. Mitigation of the unavoidable wetland losses resulting from the improvement of the highway will be accomplished using a combination of on-site and off-site mitigation.

Riparian Areas

Mitigation for loss of riparian areas primarily will be achieved through protective purchase and enhancement of a parcel of land that contains Post Creek and is adjacent to US 93. The wetland/riparian zone bordering Post Creek is considered an extremely high value corridor for grizzly bears and other wildlife. Existing riparian and wetland vegetation along the creek will be enhanced through planting of woody vegetation and exclusion of grazing.

Fish and Wildlife

- Culverts in streams will be designed and constructed to not inhibit fish passage.

- Site specific designs will be developed for key stream crossings.

- Wildlife crossing structures are planned to help reduce impacts to wildlife, including grizzly bear and grey wolf.

Cultural Resources

A consultation process for design engineers and representatives of the Flathead and Kootenai culture committees will address culturally significant areas. Coordination with representatives of the culture committees will occur prior to the beginning of each design project and continue through the construction phase.

Mitigation of long-term effects to traditional values of the Salish and Kootenai Tribes will be addressed with two types of action:

1. Using traditional Native American and English languages for highway signs:

   - Major highway signs entering and leaving the Flathead Indian Reservation

   - Community signs located on highway ROW for all major communities located on the Flathead Indian Reservation

2. Establishment of two visitor information centers to be located and designed in cooperation with tribal architects and the Flathead and Kootenai culture committees.

Hazardous Materials

Various potential hazardous material sites exist within or adjacent to the ROW of the existing highway. Where necessary, a Phase II hazardous materials assessment will be conducted so sites of concern will be further defined or evaluated and removal or mitigation plans will be completed and implemented.

Visual

Mitigation measures to mitigate impacts to visual resources will include:

- Retention of trees and natural vegetation except where removal is required for construction, for sight distance improvement, or for other safety requirements.

- Construction of the roadway with smooth, rounded excavation and embankment slopes to match and blend in with the adjacent natural terrain as much as possible.

- Excavation and embankment slopes will generally be constructed flat enough to allow re-establishment of natural vegetation.

Relocations

Federal highways are subject to provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended).

The Intermodal Surface Transportation Efficiency Act (ISTEA), H.R. 2950, includes all references to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. They require compliance with Title VI of the Civil Rights Act of 1960, H.R. 2950-34, Section 1017 Acquisition of Rights-of-Way. Relocation resources are available for all displaced residential and commercial buildings without discrimination.

Construction

An erosion control plan will be developed to avoid impacts to streams and other features during and after construction.

Inconvenience and delay to travelers on the highway will be minimized, to the extent practical, by developing and following a carefully planned traffic control plan.

U.S. HIGHWAY 93
FINAL ENVIRONMENTAL IMPACT STATEMENT

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4. PURPOSE AND NEED FOR ACTION

The purpose of the proposed action is to improve the transportation system on U.S. Highway 93 (US 93) from Evaro, Montana (approximately 6.5 miles north of Interstate Highway 90 near Missoula, Montana) through Polson, Montana (a distance of approximately 56.3 miles). It is anticipated the proposed action will be constructed with several separate construction projects.

Alternatives under consideration to improve the highway are described in Chapter 5 and are evaluated in detail in Chapters 6 and 7.

US 93 is important to local, regional and nationwide transportation; the volume of traffic is high, has been steadily increasing and is projected to continue to increase. The existing roadway has various geometric features that do not meet current guidelines and standards for safety and design. Existing level-of-service (LOS) is poor, and it is projected that traffic volume will exceed capacity by the design year ~~2015~~2020.[1] With the high volume of traffic, the accident rate is similar to the statewide accident rate, while accident numbers per mile are substantially higher than statewide averages.

The following sections provide additional detail and explain the need for improvement of the highway.

4.1. SYSTEM LINKAGE

Highway improvement that will preserve and enhance US 93 is needed because of its importance to the transportation system of Lake and Missoula counties, the Flathead Indian Reservation, western Montana, and the western United States.

Nationally, US 93 traverses the United States in generally a north-south direction from the Canadian border to near the Mexican border, passing through the states of Montana, Idaho, Nevada and Arizona.

US 93, which is the major north-south transportation route in western Montana, is functionally classified as a principal arterial and a rural primary highway. It is part of the National Highway System (NHS)~~, as established by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.~~ Prior to NHS~~ISTEA~~, this highway was part of Montana's Federal Aid Primary (FAP) highway system. The Confederated Salish and Kootenai Tribes (CSKT) have not agreed to the designation of US 93 as a part of the NHS.

US 93 is part of an extensive system of rural arterial routes that support the interstate highway system. Other highways in the region are: I-90; Montana highways (MT) 28, 35, 135, and 200 in Lake and Sanders counties; MT 83, which is east of US 93 across the Mission Mountains in the Swan Valley of Lake and Missoula counties; and Montana secondaries (MTS)~~Federal Aid Secondary (FAS) routes~~ 211, 212, 382 and 559 in Lake and Sanders counties. US 93 provides transportation services to an area that spans six major valleys in Montana: Flathead, Mission, Jocko, Missoula, Swan, and Bitterroot. US 93 is the major transportation route providing access to Flathead Lake and Glacier National Park. There are no north-south interstate highways in northwestern Montana. (Figure 5.1-6)

[1]It is anticipated that the earliest sections of highway improvements will be completed no sooner than the year ~~1995~~2000. It is considered desirable to design highway improvements to accommodate projected traffic demand for at least 20 years after the implementation. The year ~~2015~~2020 is, therefore, considered the "design year" for the proposed action.

~~The federal and state governments operate the primary and secondary highways as part of the transportation system.~~ Lake County operates approximately 1,200 miles of rural roads with mostly gravel surfaces. In the southern part of the area of the proposed action, Missoula County maintains rural roads with gravel surfaces.[2] The CSKT Roads Program~~Bureau of Indian Affairs (BIA)~~ maintains rural roads that interconnect with county and private roads on the Flathead Indian Reservation.

4.2. TRANSPORTATION DEMAND

Improvement to the existing transportation system along US 93 is needed to safely and efficiently accommodate existing and projected future transportation demand through the design year ~~2015~~2020.

Excluding the segments of highway in the incorporated cities Ronan and Polson, US 93 has average daily traffic (ADT) that ranges from ~~5,200 at the permanent counter south of Ravalli~~5,300 south of MTS 212 to more than ~~7,900~~10,000 between Pablo and Polson. The level of ADT from Evaro through Polson generally is between two- and three-times higher than ADT for other rural primary highways in Montana, and it is six-times higher than MT 83 in the Swan Valley. Other rural primary highways in the state generally operate at LOS A or B, compared with LOS D on US 93. (Sections 4.4 and 6.1 and Figure 4.2-1)

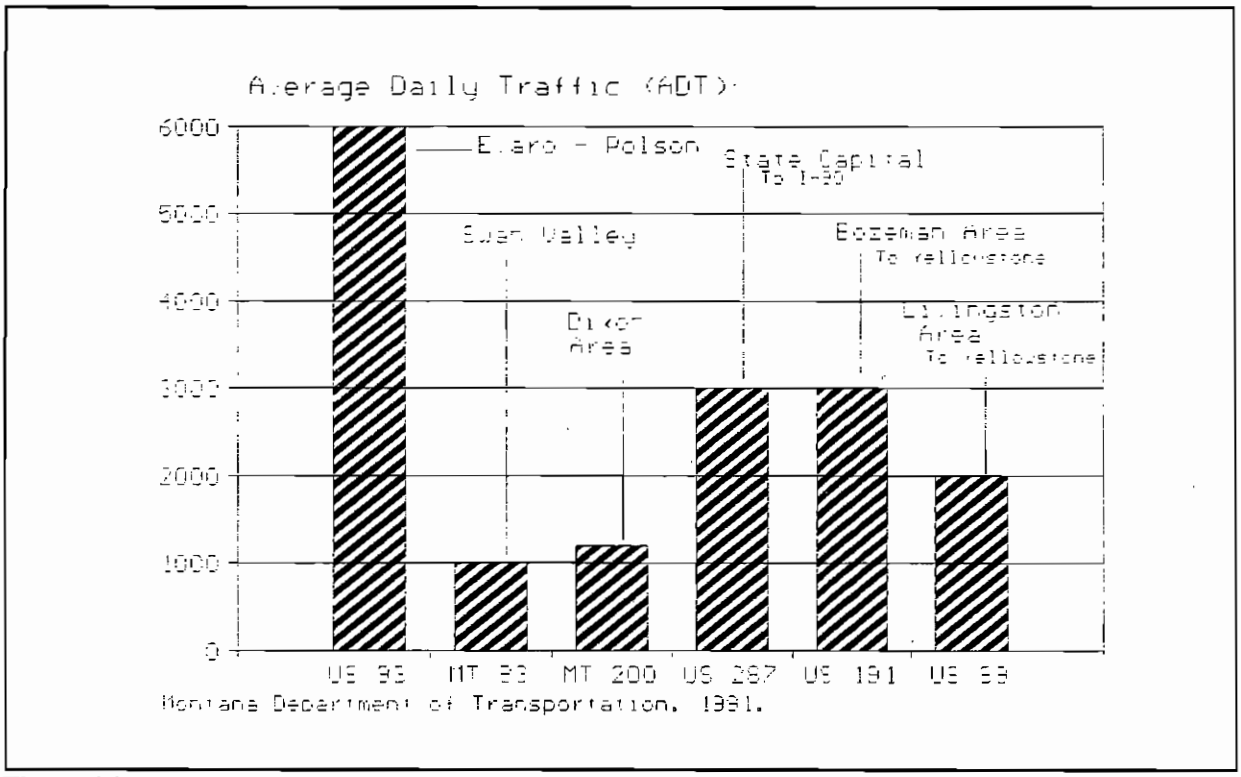

Figure 4.2-1 Average Daily Traffic (ADT) on Two-Lane Highways Outside Communities

As indicated in Section 6.1.4, average annual growth in traffic volume on US 93 has been approximately three percent during the past 20 years. Existing traffic demand is high and, as indicated in Section 7.1.1, this growth rate is projected to continue, with or without improvement of the highway, which means that traffic volume on the

[2]The Lake County Overall Economic Development Plan, 1990 Update; P. 13.

highway will approximately double by the design year ~~2015~~2020. As indicated in Section 4.4, this increasing traffic volume is currently straining the existing highway system and is projected to cause serious operational and congestion problems in the future.

The percentage of trucks in the traffic stream is between 10 and 13.7%. This percentage is expected to continue through the design year.

The increased traffic demand is a result of the growing population in the region. US 93 from Evaro through Polson provides transportation for the local area and the regional population throughout western Montana. The western part of the state has experienced a high rate of population growth since 1970. An eight-county area of western Montana, including Lake, Missoula, Flathead, Sanders, Ravalli, Mineral, Lincoln and Granite counties, had 52% of all population growth in Montana between 1970 and 1990. During that 20-year period, the population of the eight counties increased from 23 to 27% of the total population in the state.[3]

Between 1970 and 1990, the populations of Lake, Missoula and Flathead counties increased by 42%, while the overall population of Montana increased by 15%; during the 20-year period the population of the Flathead Indian Reservation increased by 37%.[4] (Figure 4.2-2 and Section 6.4)

4.3. ROADWAY DEFICIENCIES

Improvement of US 93 is needed to correct deficiencies in the existing highway to meet current design and safety standards for a design speed of 60 miles per hour (mph). As explained in Section 6.1.2, the existing highway fails to meet current safety and design standards for a design speed of 60 mph for a rural arterial highway in various categories including those described in following paragraphs. There are two horizontal curves that are

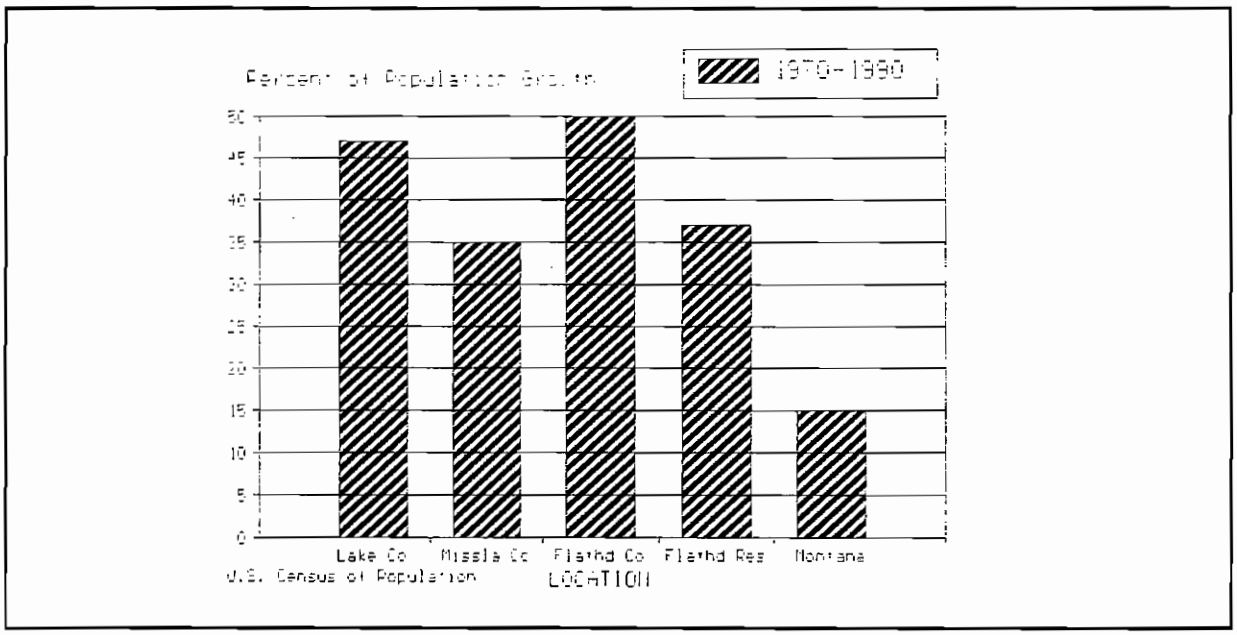

Figure 4.2-2 Rate of Population Growth

[3]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1970-1990.
[4]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1970-1990.

substandard.[5] These curves reduce sight distance, increase the possibility for vehicles going out of control and leaving the highway, create a speed differential in the traffic stream, increase chances for rear-end collisions~~, reduce capacity and LOS,~~ and reduce vehicle efficiency. (Table 6.1-3)

Vertical grades on four different sections of the roadway are substandard.[6] Vertical grades that are steeper than standard substantially reduce the speed of trucks, recreational vehicles (RVs) and other heavy vehicles, and they begin to reduce the speed of some passenger cars. This also affects safety by creating a speed differential in the traffic stream, increasing the potential for rear-end collisions. The speed differential also reduces capacity and LOS, and it increases driver frustration -- some drivers begin to pass where it is unsafe. (Table 6.1-4)

Twenty vertical curves do not provide adequate stopping sight distance for a 60 mph design speed.[7] Vertical curves that are inadequate for the design speed provide inadequate sight distance and therefore increase the possibility of accidents. (Table 6.1-5)

Paved roadway shoulder width (the paved area of the roadway outside the driving lanes) is generally substantially less than the eight-foot width considered standard and desirable for rural arterial highways with high traffic volumes. Space is therefore limited and not sufficient for 1) emergency stopping on the roadway; 2) farm equipment, wide loads or other equipment using the roadway; 3) pedestrians and bicyclists (Sections 6.6 and 7.6); 4) a recovery zone for errant or out-of-control vehicles; and 5) snow removal and storage. As a result, there is a decrease in safety and driving comfort, or convenience.

In Polson, an inadequate storm-runoff drainage system results in run-off directly into Flathead Lake, and inadequate bridge shoulders result in accidents as vehicles attempt to pass. The current bridge over the Flathead River at Polson doesn't have a passing lane.

4.4. CAPACITY AND LEVEL-OF-SERVICE

The proposed action is needed to improve the existing poor LOS and to attain a desirable LOS through the design year ~~2015~~2020 by: 1) improving the highway to adequately accommodate existing and future traffic demand, and; 2) by participation in development of transportation demand management (TDM) measures to manage the growth of traffic.

In rural areas, desirable operation is defined as LOS B or better. In communities such as Arlee, Ronan, Pablo and Polson, desirable operation is defined as LOS C or better.

The capacity of the highway is reached when traffic operation is represented by LOS E. As traffic demand exceeds the capacity (LOS E), congestion and unstable flow occurs and flow rate decreases (LOS F).

~~LOS on the existing highway is poor (LOS D and E) throughout most of the proposed action (Section 6.1.5). Unstable traffic flow begins to occur as LOS D is approached on a two lane highway. The two opposing traffic streams begin to operate separately, as passing becomes difficult. Passing demand is high, while passing capacity approaches zero. Average platoon sizes of five to 10 vehicles are common. Turning vehicles and/or roadside distractions cause major speed reductions in the traffic stream. The percentage of time motorists are delayed approaches 75% of overall travel time.~~The existing highway is generally operating at LOS D and E.

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[5]Three of the five horizontal curves listed on Table 6.1-3 are in developed areas in or near the city of Polson. These horizontal curves are not considered substandard because the travel speeds in this area are well below 60 mph.

[6]Four of the eight vertical grades listed on Table 6.1-4 are in developed areas in or near the city of Polson. These grades are not considered substandard because the travel speeds in this area are well below 60 mph.

[7]Eleven of the 31 vertical curves listed on Table 6.1-5 are in developed areas in or near the city of Polson. These vertical curves are not considered substandard because the travel speeds in this area are well below 60 mph.

At LOS D, passing demand is high while passing capacity is near zero. Platoons are forming in the traffic stream and the percentage of time motorists are delayed approaches 75%. At LOS E, passing is virtually impossible, platooning becomes intense and vehicles are delayed more than 75% of the time.

It is projected that, with no substantial improvement by the design year, traffic demand on the existing highway will exceed capacity and will be operating at LOS F. (Section 7.1.2.2) LOS F represents heavily congested flow with traffic demand exceeding capacity. Breakdowns in the flow of traffic, with related formation of queues and reductions in travel speed, occur frequently. Under these conditions, the capacity of the highway decreases.

Poor traffic operation and congestion on US 93 will result in the following types of conditions:

- As LOS deteriorates, frustration levels of drivers increase and some drivers begin to take chances, begin to follow other vehicles too closely and attempt to pass where it is unsafe. As a result, head-on and rear-end collisions increase.

- As indicated in Section 7.4, as the volume of traffic increases, US 93 will become more of a barrier. If the highway is not improved, there will be increased concentrations of traffic. Longer platoons of vehicles will further restrict the continuous flow of traffic. It will be increasingly difficult to have access to and from the highway for residential, commercial, industrial, agricultural, public and other open areas. Some alternatives for improvement of the highway will provide additional traffic lanes, including left-turn bays and continuous two-way left-turn center medians, to improve vehicle access to and from the highway.

- As indicated in Section 7.4, congestion caused by traffic volume that exceeds capacity disrupts neighborhoods, communities and rural areas outside communities by affecting residents' ability to meet casually and associate freely. Traffic congestion causes reduced association with neighbors, disruption of living patterns, and reduced efficiency of facilities/services.

- The increasing congestion and traffic volume that exceeds the capacity of US 93 disrupts the ability of Polson to function as a cohesive community and impedes local circulation for pedestrians and vehicles. Flathead Lake now serves as a major attribute for recreation and tourism, on which the city of Polson and CSKT are capitalizing with lake-related development such as lakeside hotels, boating and golfing. US 93 effectively bisects the central area of town from the lake, substantially reducing the ability of the town to tie into lake activities. This barrier effect of US 93 is projected to worsen as traffic volume increases. This will result in further disruption to the community, disrupting traffic and circulation, reducing the efficiency of the provision of facilities/services, and hampering the ability of Polson to capitalize on the potential of the lake for recreation and tourism.

- When traffic congestion occurs on the highway, access and travel by emergency vehicles (ambulances, fire trucks, police) are seriously hampered. Travel speeds are reduced substantially, flows are sporadic and excessive deceleration, stopping and acceleration occurs. It becomes difficult for vehicles to move off the roadway to let emergency vehicles pass. Emergency vehicles may often be forced to take less direct, alternate routes that may be substantially longer and also have low travel speeds, which could cause increases in emergency response times.

- As indicated in Section 7.5, as traffic demand increases and the highway becomes more congested, approaching unstable flows characteristic of LOS E and F, delivery of goods and services to the area and shipping of agricultural, timber and other products from the area will be hampered. The unstable flow and cyclic start and stop traffic operations will increase travel times and costs for shipping, resulting in more expensive and less reliable transportation services for the economy.

- As indicated in Section 7.7 and Appendix F, as traffic operations approach LOS E and F, air quality emissions will increase substantially because of the resulting increases in acceleration/deceleration, start/stop and vehicle idling time.

4.5. SAFETY

The proposed action is needed to improve safety and reduce the number of accidents and resulting property damage and, particularly, injuries and fatalities that have occurred on the highway in the past.

Experience with other highways near the proposed action has indicated highway improvement substantially reduces the number and severity of accidents. As indicated on Table 6.1-10, fatalities were eliminated in the first five years and injuries were reduced by two-thirds when the approximately six miles of US 93 between I-90 and Evaro was improved from two lanes to four lanes.

The accident history from Evaro through Polson, as described in Section 6.1.3 and based on information from accident reports submitted for the years ~~1987~~1990 through ~~1991~~1994, indicates that:

- Approximately ~~702~~750 accidents occurred during the five-year period.
- There were 16 fatal accidents that resulted in ~~17~~24 fatalities and ~~278~~320 accidents that resulted in injuries. ~~Seven of the fatalities were American Indians.~~
- There were substantially more accidents per mile on this roadway (~~2.49~~2.66) as compared with the statewide average (~~0.50~~.53). ~~(Figure 4.5-1)~~
- The accident rate (accidents per million vehicle miles) was slightly lower on this roadway (~~1.11~~.03) than the statewide average (~~1.26~~1.30).
- Though it is difficult to place an appropriate dollar value on a human life or a serious injury, the estimated monetary cost of accidents that occurred on the highway during the five-year period, based on average accident costs determined by the Federal Highway Administration (FHWA), is estimated to be ~~$64.7~~89.4 million, or ~~$12.9~~17.9 million per year.

As indicated in Section 6.1.3, research by the Montana Multi-Disciplinary Traffic Safety Task Force shows this section of US 93 as having a high number of traffic collisions and a large percentage of accidents involving older drivers.

Recommendations for improvement were made by the task force particularly to target and reduce accidents for elderly drivers that should, at the same time, benefit all drivers: Various measures for improving visibility of signs, pavement markings and signals; adding designated left-turn bays; removing or improving unsafe slopes and obstacles; reducing the number and improving the design of approaches to the highway; and other measures.

As listed on Table 6.2-4, there are approximately 681 approaches to the existing highway. These include highway and street intersections; residential, commercial and industrial driveways; farm field approaches; and others.

Junction density is particularly high in communities such as Arlee, Ronan and Polson. The number of private approaches to the highway is increasing steadily as population increases and development occurs in the area.

Some of these approaches have undesirable intersection angles with the highway, creating difficulty for drivers to see approaching vehicles and also encouraging improper turns and failure to stop or yield. Some of the approaches have grades that are too steep. This creates difficult and unsafe stopping conditions for vehicles approaching the

highway downhill and difficult starting and acceleration for vehicles approaching uphill, particularly on slick surfaces.

The density of junctions to a highway is an important contributor to the accident rate on a rural arterial highway. As indicated on Table 6.1-7, ~~241~~272 (~~34~~36%) of the recorded accidents on US 93, including the incorporated cities Ronan and Polson, involved approaches; they occurred at intersections of the highway with other roads; or they were related to intersection or driveway access.[8] ~~Excluding Ronan and Polson, 32% of accidents involved approaches, compared with 31% statewide. The percentage of accidents at intersections and related to intersections on US 93 is similar to statewide, but the percentage of accidents on US 93 involving driveway access, which primarily serves residential or business development, is more than 60% higher than statewide for rural primary highways. (Figure 4.5-2 and Sections 4.3 and 6.1)~~

It is likely that approaches contribute to other types of accidents by distracting drivers or by causing them to veer away from the approach and move closer to the roadway centerline. High junction density also contributes to substantial reductions in the capacity, service level and driving comfort of the highway.

[8]Montana Department of Transportation and Montana Department of Justice. Accident Records System. 1987-91.

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5. ALTERNATIVES

This section of the ~~draft~~final environmental impact statement (EIS) describes alternatives under consideration for the proposed action and identifies alternatives that will be evaluated in detail in later sections of the document (Section 5.1); summarizes and compares the alternatives (Section 5.2); and identifies the Montana Department of Transportation's (MDT) Preferred Alternative and the Confederated Salish and Kootenai Tribes' (CSKT) Preferred Alternative~~preferred alternative~~ and explains reasons for selection (Section 5.3).

5.1. ALTERNATIVES UNDER CONSIDERATION

The National Environmental Policy Act of 1969, as amended, (NEPA) requires evaluation of reasonable alternatives related to the proposed action, including No Action.

Alternatives were developed for the proposed action based on written and oral comments received during the public scoping process, on coordination by MDT with CSKT, local, state and federal agencies interested in the proposed action, and on engineering and environmental studies. (Chapter 10)

Alternatives that have been developed are described in the following sections and include No Action (Section 5.1.1), alignment alternatives (Section 5.1.2), lane configuration alternatives (Section 5.1.3), Transportation Demand Management (TDM) alternatives (Section 5.1.4), and alternate highway routes (Section 5.1.5). Design options that can be applied to each of the alternatives under consideration are described in Section 5.1.6.

5.1.1. No Action

With this alternative, the existing highway transportation system will receive no substantial improvement.

Although this alternative will not meet the purpose and need for the proposed action, it is evaluated in detail in accordance with NEPA and the Council on Environmental Quality (CEQ) Regulations.[1] (Chapter 4)

5.1.2. Alignment Alternatives

Various alignment alternatives are under consideration as described in the following paragraphs. Except where otherwise noted, all alignment alternatives are evaluated in detail.

5.1.2.1. Existing Alignment

This alternative consists of reconstructing the roadway in its existing corridor with only minor adjustments to allow for widening, to improve horizontal curves and vertical grades and curves, and to avoid important features adjacent to the roadway. The existing alignment, also referred to as Alignment 1, is shown on aerial photographs and maps in Appendix A.

5.1.2.2. Arlee Alignments

Five alignment alternatives, as shown on Figure 5.1-1 and Appendix A, are under consideration in the Arlee area:

Alignment 1, the existing alignment.

Alignment 2, an alignment west of Arlee and passing between the town and the existing railroad tracks.

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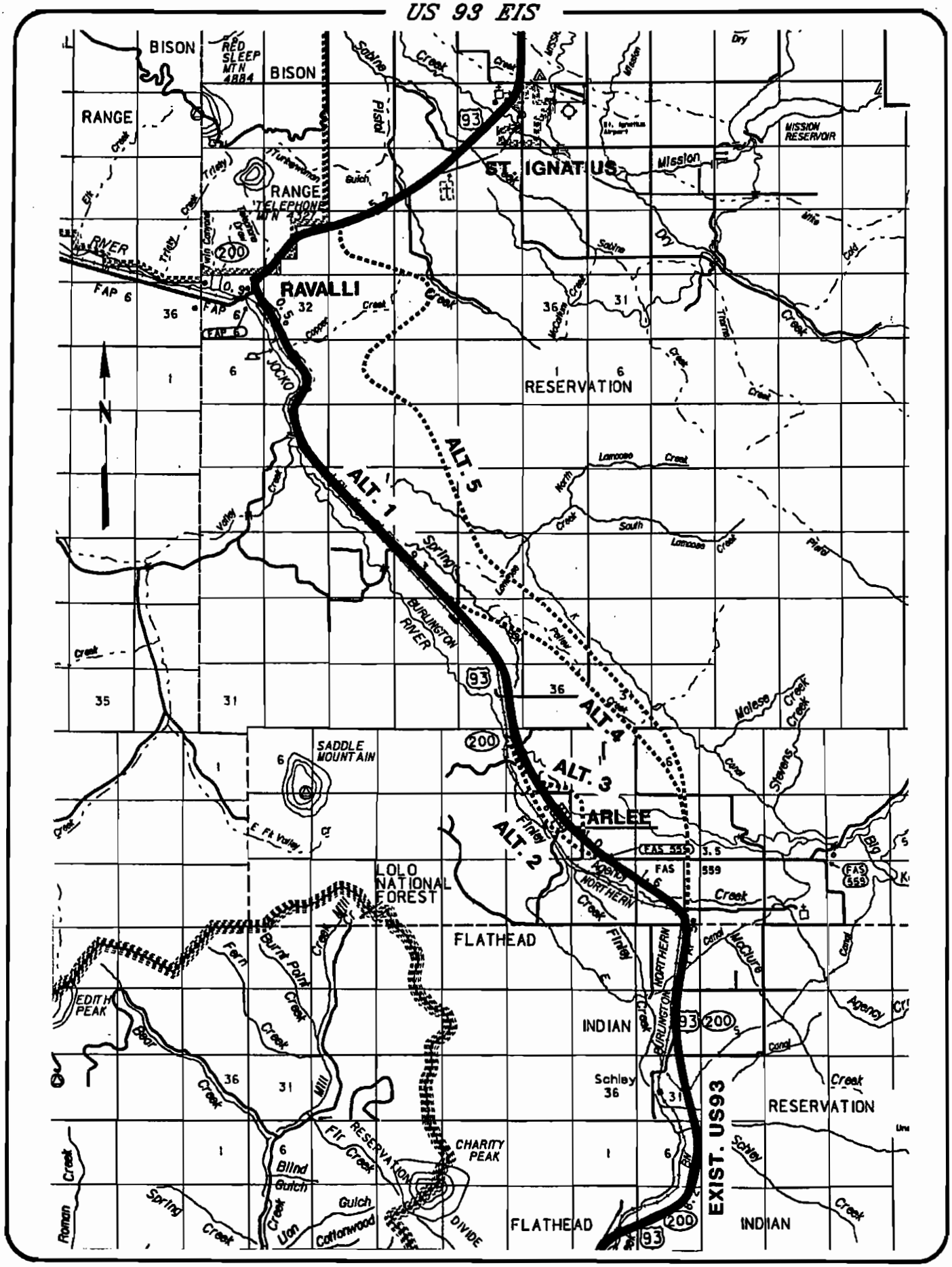
[1]Council on Environmental Quality, Executive Office of the President, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 01 July 1986.



ARLEE ALIGNMENT ALTERNATIVES FIGURE 5.1-1

Alignment 3, an alignment east of Arlee passing west of the rodeo grounds, east of the schools and southwest of the fish hatchery.

Alignment 4, an alignment that leaves U.S. Highway 93 (US 93) at Dirty Corner (near the Missoula/Lake County line near Milepost 15.1), continues north across the Jocko River, then continues northwest to rejoin the existing highway approximately three miles north of Arlee.

Alignment 5, an alignment that, similar to Alignment 4, leaves US 93 at Dirty Corner (near the Missoula/Lake County line near Milepost 15.1), continues north across the Jocko River to the base of the Mission Mountains on the east side of the valley, then follows the base of the mountains to rejoin the existing highway between Ravalli and St. Ignatius. This alignment is not evaluated in detail because:

- It received substantial public opposition and only minor public support.
- It will cause substantial environmental impacts related to introducing highway traffic in an area that currently has little vehicle traffic. Related impacts will include noise, safety, visual, air quality, social and cultural resources.
- There will be substantial wetland and wildlife impacts.
- New crossings of the Jocko River and of several streams will be required.
- Large amounts of farmland will be converted to highway right-of-way (ROW). A substantial number of irrigation laterals and systems will be disrupted.
- Implementation of this alternative will create two highways through this portion of the Mission Valley -- the existing US 93 will still require maintenance to serve residences, business and communities located along its route.
- This alignment will cross hills east of Ravalli approximately 1,300 feet higher than the existing alignment. Grades will be steeper, and snow and ice accumulations will be greater.

5.1.2.3. Ronan Alignments

Four alignment alternatives, as shown on Figure 5.1-2 and Appendix A, are under consideration in the Ronan area:

Alignment 1, the existing alignment.

Alignment 2, an alignment approximately one block west of the existing alignment on First Avenue Southwest. This alignment is part of a one-way couplet and will carry southbound traffic while northbound traffic will remain on the existing alignment.

Alignment 3, passes along the west edge of the community, approximately 0.6 mile west of the existing alignment.

Alignment 4, is located approximately one mile west of the existing alignment, west of the sewage treatment lagoons and, for a short distance, adjacent to the railroad and a community ballfield.

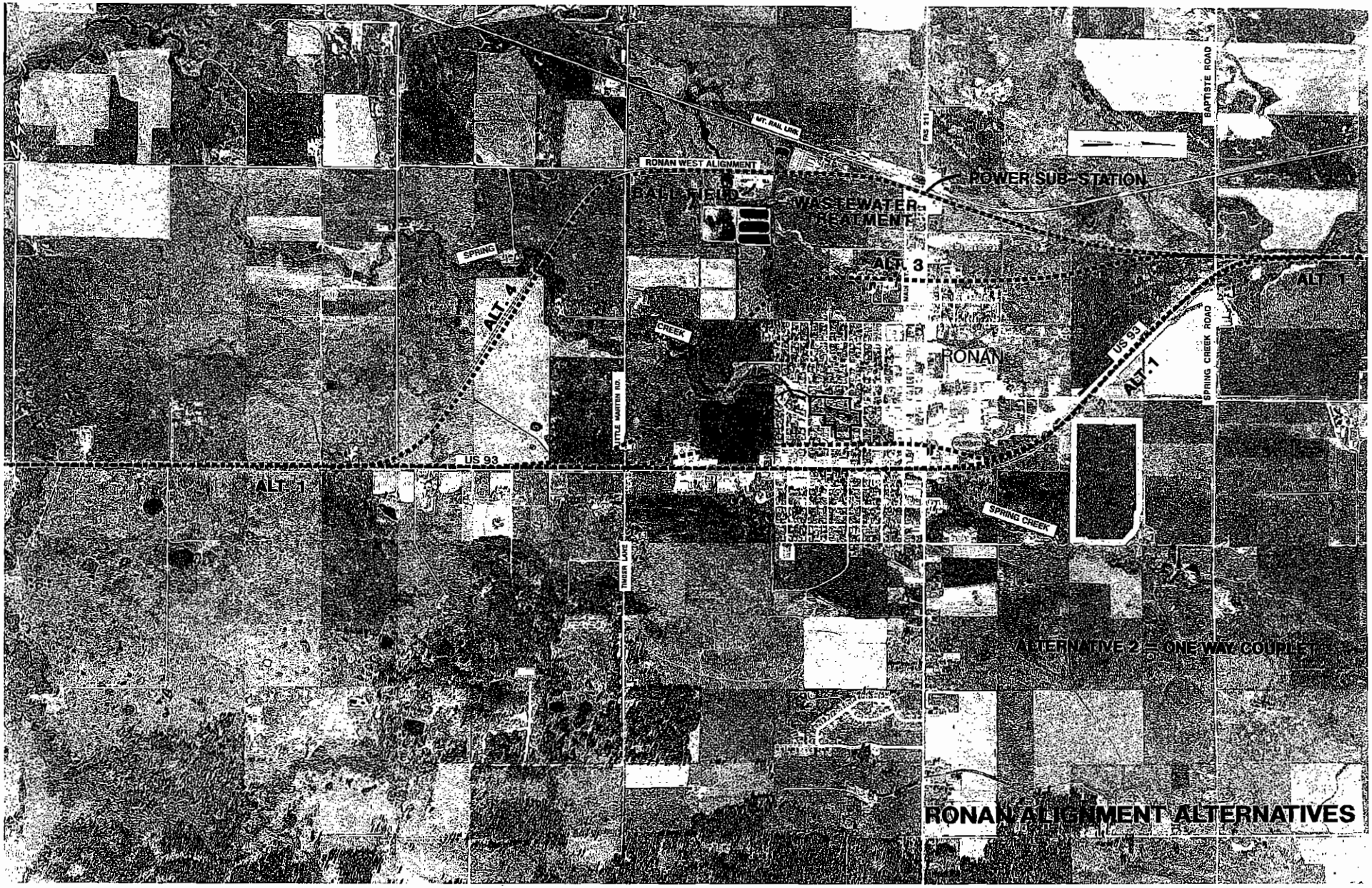

MT. RAIL LINK
RONAN WEST ALIGNMENT
POWER SUB-STATION
BALL FIELD
WASTEWATER TREATMENT
SPRING
ALT. 4
ALT. 3
ALT. 1
CREEK
RONAN
US 93
ALT. 1
SPRING CREEK ROAD
BAPTISTE ROAD
US 93
ALT. 1
SPRING CREEK
ALTERNATIVE 2 — ONE WAY COUPLET
RONAN ALIGNMENT ALTERNATIVES

FIGURE 5.1-2

5.1.2.4. Polson Alignments

In Polson, objectives were developed which reflected public and agency concerns and were then used to guide the development of alternatives:

1. Maintain and enhance traffic flow.
2. Improve the safety of the transportation system.
3. Minimize negative impacts to existing residential neighborhoods.
4. Minimize negative impacts to the business community.
5. Limit construction disruption as much as possible.
6. Minimize impacts to important natural resources in the Flathead Valley.
7. Enhance and preserve recreational resources.
8. Minimize impacts of property acquisition.
9. Be responsive to long-term maintenance requirements.
10. Be responsive to future land use plans and transportation needs.

Several alignments have been developed and are under consideration as shown on Figure 5.1-3 and Appendix A:

Alignment 1, consisting of reconstructing the roadway in its existing corridor with adjustments to allow for widening, improving horizontal curves, reconstructing substandard intersections, improving vertical alignment (includes removing the road surface from the floodplain), and avoiding any important feature adjacent to the roadway. The bridge over the Flathead River will be improved or replaced.

Alignment 2, consisting of a new alignment along Caffrey Road south of Polson, then along Kerr Dam Road, across the river just east of the fairgrounds. A new bridge across the Flathead River will be constructed to continue the general Kerr Dam Road alignment straight north over the river. New intersection configurations will be needed for the intersections with Caffrey Road and US 93.

Alignment 3, which is identical to Alignment 2 for the eastern approximately 3.25 miles of the alignment along Caffrey Road. It then veers west of Alignment 2 by one-third to one-half mile, crosses the river at a point approximately 3,500 feet downstream from the Alignment 2 bridge crossing, then continues north along an alignment that is west of the airport. A new bridge across the Flathead River will be constructed.

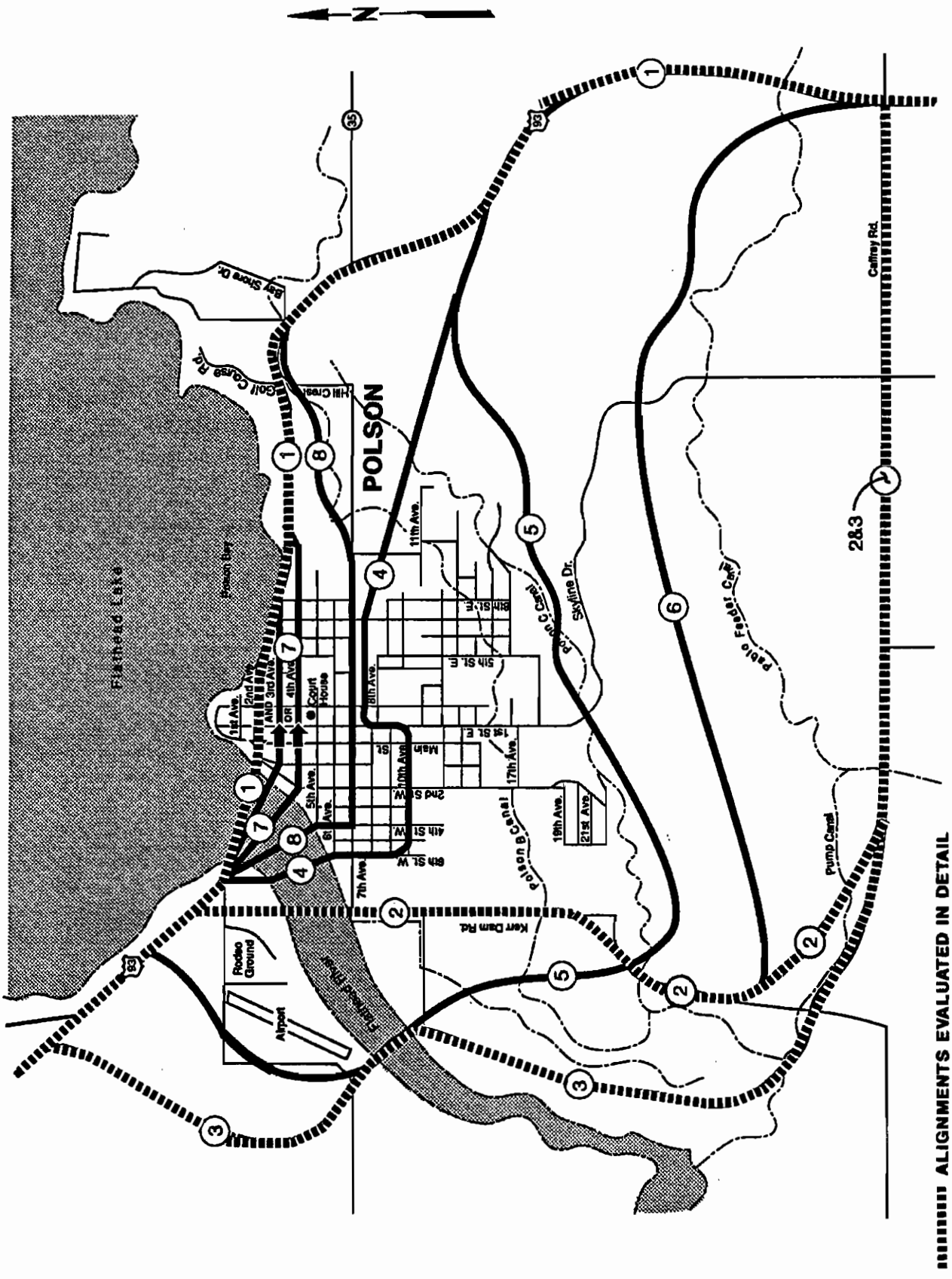
Alignment 4 (Old Mill to Eighth Avenue) is not evaluated in detail because of its circuitous, forced alignment, which will likely not meet the purpose and need; its socioeconomic impacts to residential areas on the hillside; its effects on the elementary and junior high schools; and its noise impacts. It did not meet objectives one, three and 10.

Alignment 5 (North Base of Hill) is not evaluated in detail because of its circuitous, forced alignment and six-percent grades, which will not meet the purpose and need; potential icing problems in the winter; socioeconomic impacts to residential areas; and conflict with the airport. It did not meet objectives one, two, three, nine and 10.

Alignment 6 (Top of Polson Hill) is not evaluated in detail because of its requirement for almost a mile of six-percent grade, which will not meet the purpose and need. It also would have potential icing problems. It did not meet objectives one, two and nine.

Alignment 7 (Third/Fourth Couplet) is not evaluated in detail because of its impacts on sensitive community resources such as schools, churches and the courthouse; its potential for increased pedestrian conflicts, including accidents; and its noise impacts. It did not meet objectives two, three and 10.

Alignment 8 (Railroad Alignment to Seventh Avenue) is not evaluated in detail because it will not operate well as a one-way couplet and will thus not meet the purpose and need; its impacts to the elementary and junior high schools; its effect on the fairgrounds; and its noise impacts. It did not meet objectives one, three, seven and 10.



POLSON ALIGNMENT ALTERNATIVES

FIGURE 5.1-3

5.1.2.5. Old Freight Route

This alternative (shown on the map of the proposed action in Appendix A) would consist of constructing a new roadway approximately four miles west of and generally parallel with the existing roadway along the "Old Freight Road." This alternative leaves the existing roadway near Ravalli or near St. Ignatius and passes either east or west of the National Bison Range, then continues north to the city of Polson.

This alternative is not evaluated in detail because:

- It received substantial public opposition and only minor public support.
- It will cause substantial environmental impacts related to introducing substantial highway traffic into an area that currently has little vehicle traffic. Related impacts will include noise, safety, visual, air quality and cultural resources.
- Wetland impacts will be at least equal to and possibly greater than impacts along the existing roadway.
- Large amounts of farmland will be converted to highway ROW.
- Implementation of this alternative will create two highways through this portion of the Mission Valley. Existing US 93 will still require maintenance to serve residences, business and communities along its route.
- This alternative will divert motor vehicle traffic on the existing highway away from the towns of St. Ignatius, Ronan, Pablo and Polson. St. Ignatius and Ronan have indicated opposition to any highway relocation that will divert highway traffic. As a result of and in accordance with Montana Code Annotated (MCA 60-2-211 Bypassing of Municipalities -- Consent of Municipal Governing Body), these alignments cannot be constructed by MDT without approval of the municipality.

5.1.3. Lane Configuration Alternatives

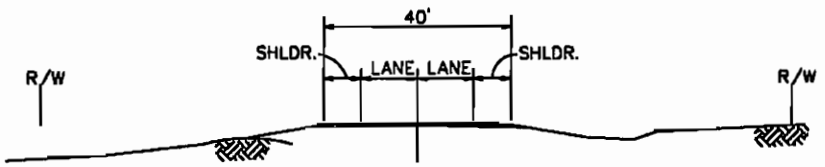
The following sections and Figure 5.1-4 describe and show lane configuration alternatives that are under consideration for each segment of the highway.

5.1.3.1. Lane Configuration A is a two-lane, two-way highway. Where needed, passing lanes will be added for short distances, designated left-turn bays will be constructed at selected intersections and continuous two-way left-turn center medians will be constructed where there are high numbers of intersections and driveways. (Figure 5.1-5)

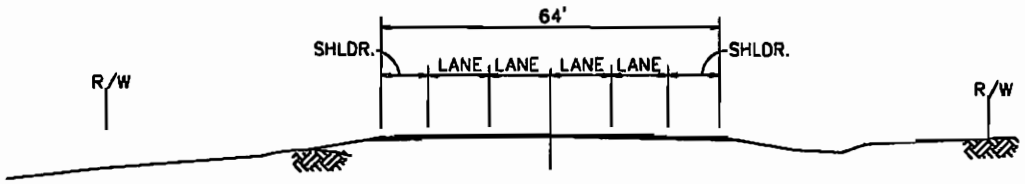
Slow-vehicle turnouts have been suggested for inclusion with this lane configuration to allow large, slow-moving trucks and recreational vehicles (RVs) to pull off the roadway and allow long traffic queues to clear. This option is not considered with this lane configuration because traffic volume is too high to allow them to operate properly.

When slow-moving vehicles pull off and stop, the high traffic volume will make it difficult and unsafe for them to reenter the highway and accelerate to reasonable highway speeds. The state of Oregon has used this concept in the past and has determined that it is not appropriate for high volume arterial highways.[2]

[2]Tabeary, Vern. Oregon Department of Transportation. Telephone Conversation. November 1993.



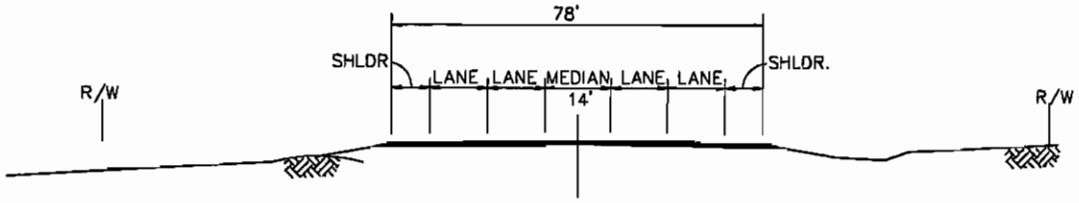
LANE CONFIGURATION A
2 LANE RDWY
MINIMUM RIGHT OF WAY WIDTH, 160 FT.



LANE CONFIGURATION B
4 LANE RDWY.
GENERAL RIGHT OF WAY WIDTH, APPROX. 180 FT.

NOTE:
EXCEPT WHERE OTHERWISE NOTED, LANES ARE 12.0' WIDE, SHOULDERS ARE 8.0' WIDE.

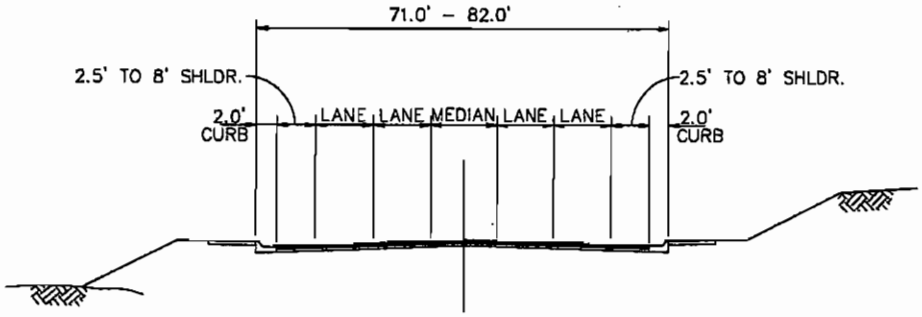
LANE CONFIGURATION ALTERNATIVES **FIGURE 5.1-4**



LANE CONFIGURATION C

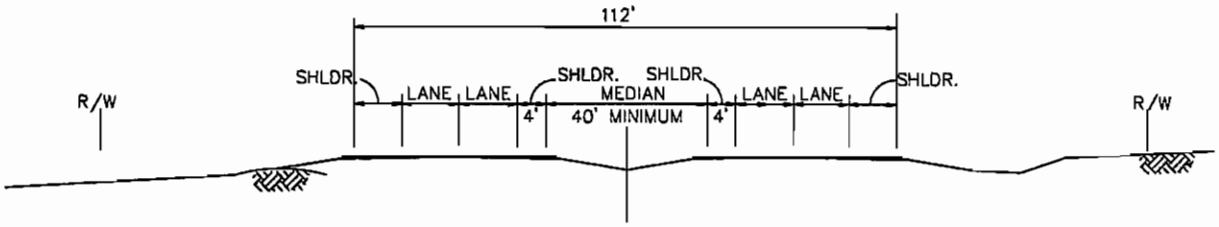
4 LANE WITH MEDIAN/LEFT TURN BAY

GENERAL RIGHT OF WAY WIDTH, APPROX. 200 FT.



LANE CONFIGURATION C

4 LANE WITH MEDIAN/LEFT TURN BAY WITH CURB & GUTTER



LANE CONFIGURATION D

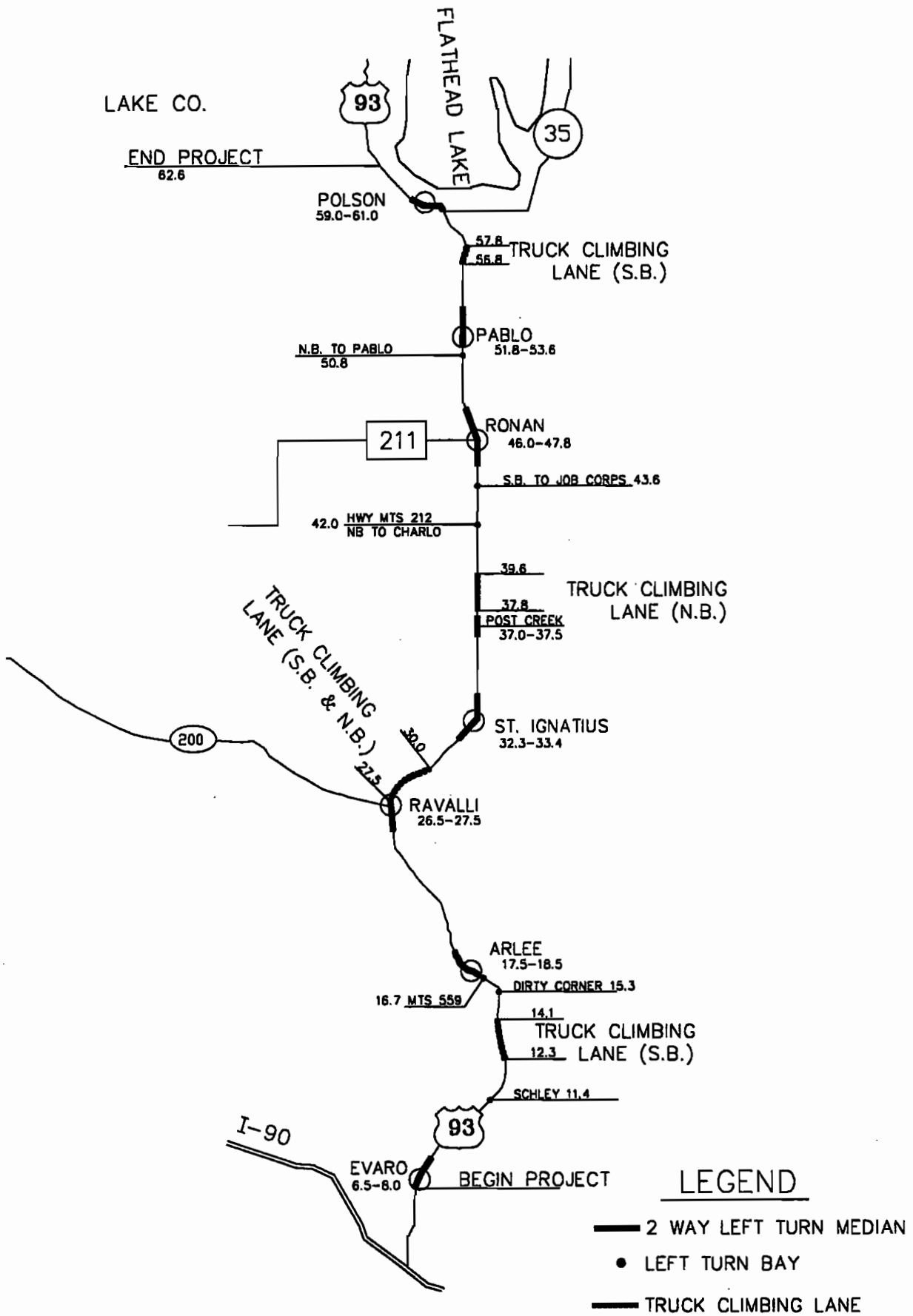
4 LANE DIVIDED

GENERAL RIGHT OF WAY WIDTH, APPROX. 220 FT.
PAVEMENT WIDTH, 72' TOTAL(36' EACH SIDE)

NOTE:

EXCEPT WHERE OTHERWISE NOTED, LANES ARE 12.0' WIDE, SHOULDERS ARE 8.0' WIDE.

LANE CONFIGURATION ALTERNATIVES (CONT.) FIGURE 5.1-4



LANE CONFIGURATION A **FIGURE 5.1-5**

5.1.3.2. Lane Configuration B is a four-lane highway with two traffic lanes in each direction. ~~As indicated in Section 5.1.6, a four-foot painted center median may be added to this configuration to separate opposing lanes of traffic.~~ Designated left-turn bays will be constructed at selected intersections.

5.1.3.3. Lane Configuration C is a four-lane highway with a continuous two-way left-turn center median.

5.1.3.4. Lane Configuration D is a four-lane highway with a divided, unpaved center median at least 40-feet wide. Designated left-turn bays will be constructed at important intersections.

5.1.4. Transportation Demand Management

Transportation Demand Management (TDM) alternatives will include various measures that might help to reduce the traffic demand on the existing US 93 and thereby preserve or enhance traffic operation with highway improvement. These alternatives also were evaluated to determine whether development of reasonable and cost-effective TDM measures will reduce or eliminate the need for highway improvement.

TDM measures could include ride-sharing (e.g., car pools and van pools), pedestrian/bicycle facilities, bus transit, rail transit (freight and passenger), air transit and alternate highway routes. Alternate highway routes are discussed in Section 5.1.5. An analysis of TDM alternatives for the proposed action has been completed[3] and is included in Appendix B.

Public comment has expressed interest in determining whether TDM alternatives could be effective in reducing traffic volume on the existing highway sufficient to eliminate the need for highway improvement, while providing adequate capacity ~~for~~and a desirable level-of-service (LOS).

TDM generally applies to traffic that uses the highway on a daily basis, primarily commuter travel or other travel that occurs on a regular basis. The Federal Highway Administration (FHWA) considers TDM alternatives to be most practical and effective in urban areas with a population of at least 200,000.[4] In 1990 the population of the immediate area served by US 93 from Evaro through Polson, with 21,100 people in Lake County and 820 in Missoula County, was approximately 10% of FHWA's base urban population for TDM.[5,6,7]

Residents of Lake County use similar means of travel to work as the overall Montana population. In 1990, the percentage of Lake County residents using a car, truck or van was slightly lower than the totals for Montana.

Fewer than one percent of workers in Lake County and the state use public transportation to ride to work.[8,9] College students (estimates of the numbers are not available) also travel on US 93 to the University of Montana in Missoula and Flathead Community College in Kalispell, either daily or several days each week. (Section 7.4.1)

Evaluation and public comment have indicated implementation of TDM options will be desirable where practical and feasible. However, even with optimum reductions ranging from 20 to 40% of vehicle traffic,[10] LOS using ~~1991~~1994 traffic volume will be improved only slightly and will generally be C and D. Currently LOS is mostly D and E (Table 6.1-15). In ~~2015~~2020, LOS with the 20 to 40% reduction of traffic will be ~~D and E~~E and F with

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[3]Matthew J. Delich, P.E., Analysis of Transportation Demand Management Alternatives, U.S. Highway 93, Evaro to Polson, February 1993.
[4]Federal Highway Administration. FHWA Technical Advisory T 6640.8A. October 30, 1987.
[5]Ibid.
[6]U.S. Department of Commerce, Bureau of the Census. Census of Population and Housing. 1990.
[7]It should be noted people from outside the immediate area drive US 93 on a daily basis. They are not included in the above numbers.
[8]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[9]Morrison-Maierle. Technical Report for Social Conditions: Supplement to U.S. Highway 93 Environmental Impact Statement. 1993.
[10]The 20 to 40% reduction in vehicle traffic volumes is considered very high. Research indicates areas with successful TDM programs typically are able to reduce traffic by a maximum of only 20%.

the existing highway or with an improved two-lane highway.[11] This is a slight improvement over projected LOS ~~E and~~ F in the design year ~~2015~~2020 without implementation of TDM options (Table 7.1-~~32~~), but does not provide the desired LOS B conditions.

5.1.5. Alternate Highway Routes

These alternatives will include measures that might reduce highway traffic demand by promoting shifts of existing and future motor vehicle traffic from US 93 to other existing highway routes. Alternate routes that have been suggested include Montana Highway (MT) 83 in the Swan Valley and MT 200-382-28 in Lake and Sanders counties (Figure 5.1-6).

Alternate highway routes are not evaluated in detail. Large portions of these routes have been recently improved or are scheduled for improvement, including widening shoulders, flattening slopes, removal of unsafe roadside obstructions, improved alignment and grade, new pavement and improved signing and stripinges. Construction has been completed or environmental impacts of these improvements have been or are being evaluated in studies and environmental documents prepared specifically for these projects, as summarized below:

- MT 83, Clearwater Junction - North, Mileposts 0 to 14.7, categorical exclusion approved 3/90, construction scheduled beginning in 1993.

- MT 83, Clearwater Junction - Construction scheduled beyond 2000.

- MT 83, Seeley Lake - Inez Lake, Mileposts 14.7 to 23.1, categorical exclusion approved, construction completed in 1988.

- MT 83, Lake Inez - North, Mileposts 23.1 to 31.4, finding of no significant impact approved 3/92, construction completed in 1992~~nearing completion~~.

- MT 83, Condon - North and South, Mileposts 31.4 to 47.7, environmental assessment in-progress 3/90, construction scheduled beginning in 1994.

- MT 83, Missoula County Line - North and South, Mileposts 47.7 to 65.1, environmental assessment in-progress, construction scheduled beginning in 1996.

- MT ~~28~~/200, Hot Springs - North and South, Mileposts 16.2 to 26.1, categorical exclusion approved, construction completed in 1992~~nearing completion~~.

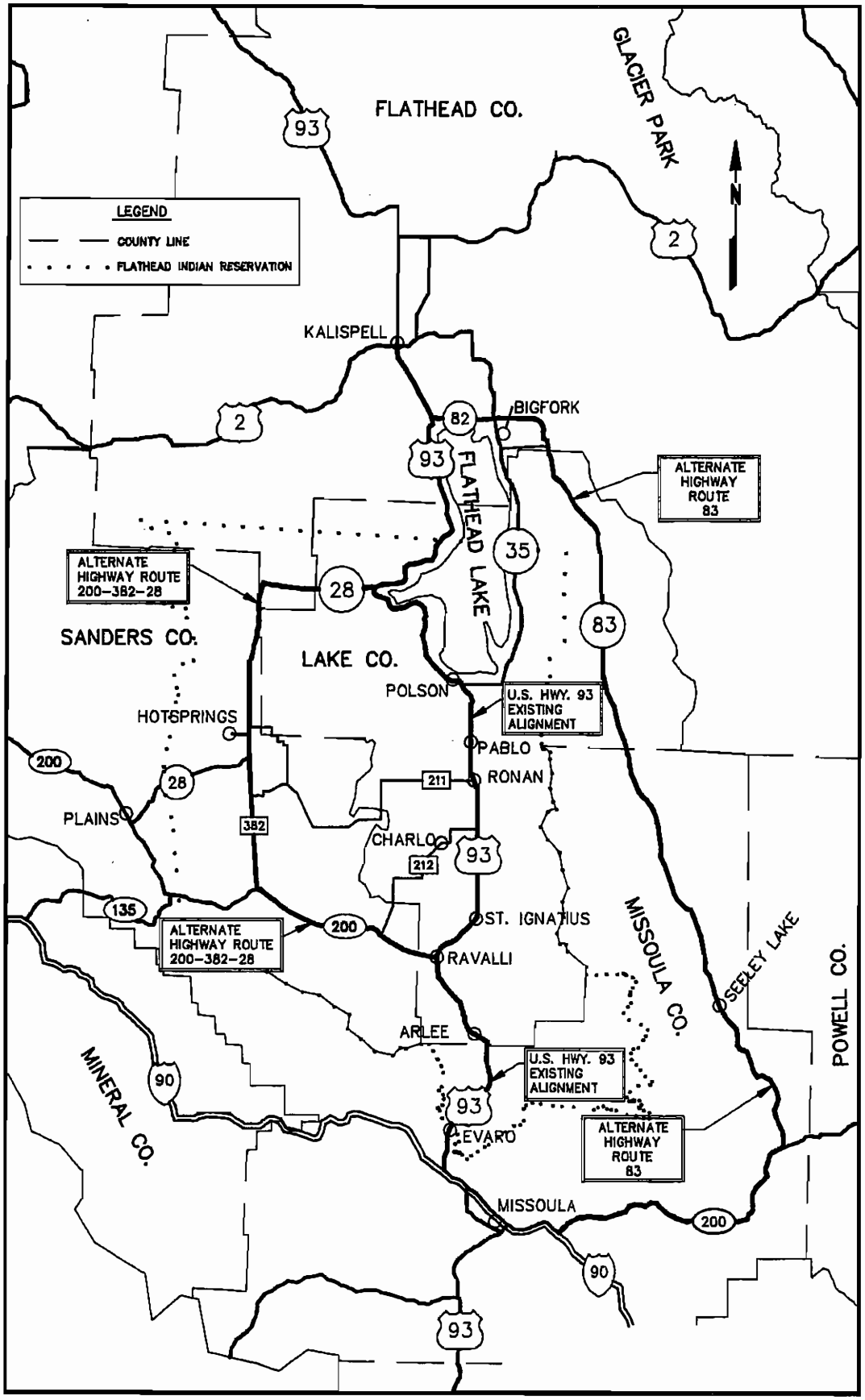
- MT ~~28~~200, Lonepine - North and South, Mileposts 26.1 to 36.1, categorical exclusion approved 2/91, construction scheduled beyond 2000~~beginning in 1998~~.

- Montana Secondary (MTS) 382, Perma Canyon - North, Mileposts 3.9 to 11.0, environmental assessment in progress, construction scheduled in 1997.

- MTS 382, three miles north of Camas Prairie - North, Mileposts 11.0 to 15.8, state-funded thin overlay, scheduled for November 1995.

- MT 200, Dixon - Ravalli, Mileposts 109.1 to 116.2, environmental assessment in progress, construction scheduled in 1998.

[11]Delich, Matthew. U.S. Highway 93 Transportation Demand Management. April 1993.



ALTERNATE HIGHWAY ROUTES FIGURE 5.1-6

MT 200, Dixon - West, Mileposts 99.2 to 109.1, environmental assessment in progress, construction scheduled beyond 2000.

MT 28, Elmo - West, Mileposts 36.1 to 46.7, state-funded seal and cover, construction completed in 1995.

Travel distances, as summarized below, are greater along these routes:

Missoula to:	Montana 83	Montana 200-382-28	US 93
Polson	--	120	66
Kalispell	144	137	115
West Glacier	170	167	149

Traffic operation on these alternate routes is currently at LOS A and B as compared with LOS D and E on US 93. This difference in LOS indicates that, on these routes, travel speeds are higher; interruptions are fewer; and safety, comfort and convenience are greater. Drivers currently may be selecting these routes for travel when distances are approximately equal and possibly, because of the substantially better operation, when travel distances are greater. (Section 6.1.4.1)

It may be desirable to encourage more use of these alternate routes to take advantage of the better operating conditions using additional highway signing, designation as special routes, public notification, advertising and education or other methods. It is not likely, however, that enough traffic will shift to these routes to reduce traffic demand substantially on US 93.

5.1.6. Design Options

The following design options will be applied, where appropriate, with the alignment and lane configuration alternatives described in Sections 5.1.2 and 5.1.3. They may be used as mitigation measures or to help meet specific transportation and safety needs:

Partial Access Control	Frontage Roads	Bus Turnouts
Pedestrian Facilities	Bicycle Facilities	Concrete Median Barrier
Four-Foot Painted Median	Wildlife Crossings	Livestock Crossings
Wildlife Fence	Traffic Signals	Sidewalk, Curb and Gutter
Landscaping	Truck Route	One-way Couplet
Auxiliary Lanes[12]	Slow-Vehicle Turnouts	Landscaped Medians
Improved Signage and Pavement Markings		

Where applicable, these design options are described and their application, benefits and impacts are explained in other sections.

Partial access control includes the condition in which the right of access to land adjacent to the highway is eliminated or restricted. This limits the conflict with through traffic by eliminating or limiting the number of private driveways and public roads entering directly onto the through traffic lanes of the highway.

[12]May include acceleration/deceleration lanes, passing lanes, designated right-turn bays, designated left-turn bays and continuous two-way left-turn center median.

Frontage roads, generally parallel with the highway, may be desirable in some areas to help reduce the number of access points to the highway.

Turnouts for historic points, scenic viewpoints, fishing and other access sites, chain-up areas, rest areas, information centers or other facilities are under consideration where needed and where they can be safely constructed and used.

Pedestrian facilities including paths, sidewalks, signals, cross-walks, overpasses and underpasses are under consideration.

Bicycle facilities including bicycle paths (incorporated into the highway typical section or constructed separately) are a design option.

A concrete median barrier will include a 2.5- to three-foot high barrier constructed between opposing lanes of traffic. The barrier will be separated from traffic lanes by approximately seven feet on each side requiring a total median width of 14 feet. This option might be effective in some areas for physically separating opposing directions of traffic and thereby improving safety.

A four-foot painted center median is an option under consideration. This option will not provide the positive physical separation of a concrete barrier, but it will help separate opposing lanes of traffic and may help improve safety.

Wildlife crossings and wildlife fence (to direct wildlife to use the crossings) are under consideration in areas where important wildlife crossings have been identified.

Where important livestock crossings exist, underpasses are under consideration. The underpasses will consist of large, oval-shaped pipe culverts.

Where important for erosion control, visual impact mitigation, noise attenuation and other mitigation needs, landscaping is a design option.

Where warranted, traffic signals will be considered with highway improvement.

In community areas, concrete curb, gutter and sidewalk may be appropriate. Required storm water disposal and treatment systems will be incorporated.

With most of the alignment alternatives, a one-way couplet concept is under consideration. This will place traffic in one direction on the existing roadway, while traffic in the opposing direction will be placed on the new roadway (on one of the alignment alternatives described in Section 5.1.2).

The truck route listed above will consist of constructing a new roadway around Arlee, Ronan or Polson (on one of the alignment alternatives described in Section 5.1.2) and designating it as a truck route. The existing roadway through the community will remain and will continue to be designated as the main route for US 93.

Acceleration/deceleration lanes may be desirable at important intersections to allow vehicles to enter or leave US 93 without affecting through traffic. These include designated right-turn bays, designated left-turn bays and, with Lane Configuration A, a continuous two-way left-turn center median with a two-lane highway. Other auxiliary lanes that are under consideration, particularly for Lane Configuration A, include passing lanes and truck climbing lanes.

In areas where Lane Configuration A is constructed, slow-moving vehicle turnouts have been suggested to allow recreational vehicles and other slower vehicles to pull off the roadway and allow backed-up traffic to pass.

It has been suggested that landscaped medians be used to improve visual quality. This will include planting and maintaining grasses and shrubs where the median can be constructed wide enough to allow it. In addition to improving visual quality, if properly designed and constructed, the landscaped median will help to separate opposing traffic lanes and thereby improve safety. Landscaped medians will include native vegetation, grasses, or other vegetation appropriate for road conditions, traffic and climate.

Research indicates: (Section 6.1.3)

- Replacement of existing signs with larger, more visible and correctly placed signs, and

- Replacement of existing pavement markings (generally four inches wide) with six-inch pavement markings will help drivers recognize them and react sooner and will thereby help to reduce accidents. As a result of this research, these improved signs and pavement markings already are being installed in the area from Evaro through Polson and should be considered for incorporation with any of the alternatives under consideration.

Members of the public have suggested increasing the level of enforcement of traffic laws to obtain better adherence to speed limits and thereby improve highway safety. Adherence to traffic laws is an important consideration and enforcement should be considered with any of the alternatives under consideration. State, local and tribal governments should continue to make sure that an appropriate level of enforcement occurs -- where traffic studies or other factors indicate stricter enforcement is warranted, it should be implemented. However, enforcement of speed limits lower than the speed the majority of drivers are comfortable with has, in the past, normally proven unsuccessful.

5.2. COMPARISON OF ALTERNATIVES

Tables 5.2-1 through 5.2-4 on the following pages compare impacts, both adverse and beneficial, of each of the lane configuration and alignment alternatives under consideration.

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
6.1/7.1 Traffic Operation	• No correction of deficiencies in existing geometric design. • Existing LOS D deteriorates to LOS F in most areas by the design year ~~20152020~~. • Traffic operation poor, with congestion and substantial interruption in the flow of traffic.	• Slight improvement in operation in some areas, but LOS deteriorates to F in most sections of the roadway by ~~20152020~~. • Consolidation or closure of approaches and partial access control improves traffic operation in developed areas.	• Substantial improvement in operation and capacity of highway several times greater than a two-lane highway, • LOS improves to B, which is considered desirable. • Consolidation or closure of approaches and partial access control improves traffic operation in developed areas.	• Operation similar to Lane Configuration B, with slight improvement due to reduced influence of left turns from US 93.	• Operation similar to Lane Configuration C, with more improvement because of total separation of opposing traffic lanes. • May adversely affect access to some properties because no left turns will be allowed between major intersections.	• Combines Lane Configurations B, C and D for substantial improvement in operation and capacity of highway. • Lane Configuration B will be 37.6 miles. • Lane Configuration C will be 14.5 miles. • Lane Configuration D will be 0.4 mile, wildlife corridor.
6.1/7.1 Safety	• No correction of roadway deficiencies, no reduction of approaches to highway and no improvement in safety.	• Accident reduction should occur due to correction of existing roadway deficiencies, elimination or consolidation of approaches to the highway and addition of left-turn bays at major junctions. • Safety improvement due to four-lane roadway will not be realized.	• More reduction of accidents than Lane Configuration A. • Based on experience with similar four-lane projects, substantial reductions are expected in injuries and fatalities.	• Accident reduction similar to Lane Configuration B. • Addition of the continuous two-way left-turn center median provides improvement in safety for areas with high density of approaches and frequent left turns. • The continuous two-way left-turn center median separates opposing lanes of traffic, substantially reducing head-on collisions.	• Accident reduction similar to Lane Configurations B and C. • Complete separation of opposing traffic lanes virtually eliminates head-on collisions.	• Combines elements of Lane Configuration B in areas with lower density of approaches and elements of Lane Configuration C in areas with high density of approaches to provide expectation of substantial reductions in accidents, injuries and fatalities.
6.2/7.2 Land Use	• No highway improvement to encourage change of existing pattern of land use for residential, commercial, and industrial development. •Along US 93, residential and business strip development continues. • No partial access control.	• Partial access control can combine with land use planning and regulation to control residential and business strip development. • Converts 88 acres to highway ROW.	• Partial access control similar to Lane Configuration A. • Converts 204 acres to ROW.	• Partial access control is similar to Lane Configurations A and B. • Continuous two-way left-turn center median may encourage strip development, especially without coordinated access control and land use planning and regulation. • Converts 293 acres to ROW.	•Partial access control is similar to Lane Configurations A, B and C. • Divided, unpaved center median prohibits left turns across opposing lanes of traffic, except at major intersections, which may discourage strip development. • Converts 436 acres to ROW.	• Partial access control is similar to Lane Configurations B, C and D. • For segments of highway with Lane Configuration C, continuous two-way left-turn center median may encourage strip development, especially without coordinated access control and land use planning and regulation. • Converts 217 acres to ROW.

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson) (continued)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
6.3/7.3 Farmlands	• No impact for FPPA farmland. (prime or unique farmlands or farmlands of statewide or local importance).	• No impact for FPPA farmland.	• Conversion to ROW of 10.9 acres of FPPA farmland.	• Conversion to ROW of 14 acres of FPPA farmland.	• Conversion to ROW of 17 acres of FPPA farmland.	• Conversion to ROW of 11.7 acres of FPPA farmland.
6.4/7.4 Social: Community and Rural Conditions	• No change in physical prominence. • Barrier effect of highway in communities increases due to increased congestion, which disrupts pedestrian and vehicular access to residential, business and public facilities.	• Similar to No Action.	• Width and physical prominence increase. • Congestion decreases, causing less disruption of pedestrian and vehicular access to residential, business and public facilities. • Wider highway decreases buffer zones between property and highway. • Makes highway more desirable for commuters, with potential to contribute to population growth and economic development.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Social conditions are similar to Lane Configurations B, C and D.
6.5/7.5 Economics	• More congestion increases barrier to business. • More congestion increases travel time and shipping costs. Travel for tourism more difficult and reduces opportunity to increase attraction.	• Similar to No Action. • During construction, short-term disruption of traffic restricts access to business and reduces sales. • Local business benefits by providing support services and supplies during construction.	• Less traffic congestion improves access to business. • Less congestion reduces travel time and shipping costs. Travel for tourism more convenient and improves opportunity to increase attraction. • Construction impacts similar to Lane Configuration A.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Economics are similar to Lane Configurations B, C and D.

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson) (continued)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
6.6/7.6 Pedestrians and Bicyclists	• Opportunities not realized for improvement to facilities. • As traffic volume increases, safety, comfort and convenience of non-motorized travel adversely affected.	• Eight-foot shoulder, which is adequate for most bicyclists, enhances safety, comfort and convenience of non-motorized travel.	• Similar to Lane Configuration A, but wider highway and additional lanes may be slightly more difficult for pedestrians to cross.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C, and median provides area for pedestrians to pause, after crossing one direction of traffic, and prepare to cross opposing direction of traffic.	• Conditions for pedestrians and bicyclists are similar to Lane Configurations B, C and D.
6.7/7.7 Air Quality	• As traffic volume increases, CO concentration continues to increase. • As traffic volume increases, PM_{10} concentration continues to increase.	• Similar to No Action.	• Because of improved traffic flow, CO concentration decreases compared with No Action and Lane Configuration A. • PM_{10} concentration similar to No Action and Lane Configuration A.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Air quality is similar to Lane Configurations B, C and D.
6.8/7.8 Noise	• Noise level within 100 feet of the highway centerline exceeds the FHWA noise abatement criterion of 67 dBA by the design year.	• Noise level in design year similar to No Action.	• Noise level generally two to three dBA higher than No Action or Lane Configuration A. • Noise level in design year exceeds FHWA noise abatement criterion within 150 feet of highway centerline.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Noise is similar to Lane Configurations B, C and D.
6.9/7.9 Water Quality	• No impact to water quality.	• Potential for hazardous materials contamination during construction operations. • During construction, runoff from disturbed areas increases erosion and may result in temporarily increased turbidity in streams. • After construction, runoff increases slightly due to increased pavement areas.	• Similar to Lane Configuration A, but larger disturbed areas and pavement areas result in slightly greater potential impacts to runoff and streams.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Water quality is similar to Lane Configurations B, C and D.

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson) (continued)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
6.10/7.10 Wetlands	• No impact to wetlands.	• Proposed action affects ~~2021.75~~ acres of existing wetlands.	• Proposed action affects ~~3836.15~~ acres of existing wetlands.	• Proposed action affects ~~4543.03~~ acres of existing wetlands.	• Proposed action affects ~~6758.71~~ acres of existing wetlands.	• Proposed action affects 40.42 acres of existing wetlands.
6.11/7.11 Floodplains and Stream Crossings	• No change for existing stream crossing and floodplain characteristics. • No realization of opportunity to improve existing floodplain problems.	• Generally requires 12 feet additional bridge width and 50 feet additional culvert length at each crossing. • Improvement of many existing floodplain problems.	• Generally requires 36 feet additional bridge width and 74 feet additional culvert length at each crossing. • Floodplain improvement similar to Lane Configuration A.	• Generally requires 50 feet additional bridge width and 88 feet additional culvert length at each crossing. • Floodplain improvement similar to Lane Configurations A and B.	• Generally requires 76 feet additional bridge width and 114 feet additional culvert length at each crossing. • Floodplain improvement similar to Lane Configurations A, B and C.	• Combination of Lane Configurations B, C and D results in general requirements for additional bridge width and additional culvert length, as identified for each lane configuration. • Floodplain improvement is similar to Lane Configurations B, C and D.
6.12/7.12 Fish and Wildlife	• No impact to fish and wildlife habitat. • Highway collision mortality increases as traffic volume increases. • The highway continues to discourage use of habitat near the highway. • No realization of potential improvement due to improved or new crossings for mammals, turtles, ducks, fish and other wildlife.	• Highway collision mortality similar to No Action. • Potential impact to fish resulting from reconstruction of culverts and bridges. • No realization of potential improvement due to improved or new crossings for mammals, turtles, ducks, fish and other wildlife.	• Wider highway creates slightly greater potential for wildlife mortality due to highway collisions. • Potential impact to fish resulting from reconstruction of culverts and bridges. • Proposed wildlife crossings in the Evaro and other areas may substantially reduce vehicle/animal conflicts.	• Wider highway creates slightly greater potential for wildlife mortality due to highway collisions. • Potential impact to fish resulting from reconstruction of culverts and bridges. • Proposed wildlife crossing benefits similar to Lane Configuration B.	• Wider highway creates slightly greater potential for wildlife mortality due to highway collisions. • Potential impact to fish resulting from reconstruction of culverts and bridges. • Proposed wildlife crossing benefits similar to Lane Configurations B and C.	• Impacts to fish and wildlife are similar to Lane Configurations B, C and D.
6.13/7.13 Threatened and Endangered Species	• Not likely to adversely affect any threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson) (continued)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
6.14/7.14 Cultural Resources	• No change in cultural resources.	• Increased convenience and desirability of commuter travel, with potential to contribute to population growth and economic development, adversely affects the Native American sense of community and traditional cultural values.	• Potential impact to several eligible cultural resource properties. • Impacts on Native American sense of community and traditional cultural values similar to Lane Configuration A.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Impacts to cultural resources are similar to Lane Configurations B, C and D.
6.15/7.15 Parks and Recreation	• Increasing traffic, with more noise and visual distraction, encroaches on areas used for recreation.	• Highway improves access to scenic/historic turnouts. • Highway improvement provides opportunity to improve access to and control use of turnouts and recreation sites.	• Opportunity to improve access and control use similar to Lane Configuration A. • With four lanes, land along edge of recreation areas converted to ROW, but public use not disrupted. • Traffic noise and visual distraction is closer to recreation sites.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Impacts to parks and recreation are similar to Lane Configurations B, C and D.
6.16/7.16 Hazardous Materials	• Potential will remain for hazardous material spills, similar to what has occurred in the past.	• Improved roadway will improve safety and reduce potential for transportation-related spills. • Potential for construction-related contamination.	• Wider, improved roadway will substantially improve safety and reduce potential for spills. • Potential construction impact similar to Lane Configuration A.	• Improved safety and reduced potential for spills similar to Lane Configuration B. • Potential construction impact similar to Lane Configurations A and B.	• Improved safety and reduced potential for spills similar to Lane Configurations B and C. • Potential construction impact similar to Lane Configurations A, B and C.	• Improved safety, reduced potential for spills and potential construction impacts are similar to Lane Configurations B, C and D.
6.17/7.17 Visual	• Deterioration of LOS reduces comfort and visual quality for drivers and passengers. • High traffic volume interrupts views from and of the road.	• Narrower road width results in minimal change to existing landform and land cover. • Increased traffic volume and reduced LOS diminishes visual quality for drivers and passengers.	• Wider road results in more disturbance to existing landforms and land cover. • Improved comfort allows drivers and passengers to view and appreciate more scenery.	• Similar to Lane Configuration B.	• Similar to Lane Configurations B and C.	• Impacts to visual conditions are similar to Lane Configurations B, C and D.
6.18/7.18 Relocations	• No buildings require relocation.	• No buildings require relocation.	• Relocation required for two buildings.	• Relocation required for 16 buildings.	• Relocation required for 35 buildings.	• Relocation required for 11 buildings

Table 5.2-1 Comparison of Impacts: Existing Alignment (Except Arlee, Ronan and Polson) (continued)

Sections	No Action	CSKT Preferred Alternative Lane Configuration A (Two-lane)	Lane Configuration B (Four-lane)	Lane Configuration C (Four-lane with continuous two-way left-turn center median)	Lane Configuration D (Four-lane, with divided median)	MDT Preferred Alternative Combination of Lane Configurations A, B, C and D
7.19 Energy and Commitment of Resources	• No improvement in traffic operating efficiency and no related long-term decrease in energy use. • No commitment of resources required.	• Minor improvement in traffic operating efficiency and related long-term decrease in energy use. • Fossil fuels, labor and construction materials expended.	• Substantial improvement in traffic operating efficiency and related long-term decrease in energy use. • Fossil fuels, labor and construction materials expended in greater quantities than Lane Configuration A.	• Substantial improvement in traffic operating efficiency and related long-term decrease in energy use. • Fossil fuels, labor and construction materials expended in greater quantities than Lane Configurations A and B.	• Substantial improvement in traffic operating efficiency and related long-term decrease in energy use. • Fossil fuels, labor and construction materials expended in greater quantities than Lane Configurations A, B and C.	• Substantial improvement in traffic operating efficiency and related long-term decrease in energy use. • Results in expenditure of fossil fuels, labor and construction materials greater than Lane Configuration B, but less than Lane Configuration C.
7.20 Construction	• No construction-related impact or cost.	• Short-term impacts occur for air quality, noise, water quality and other environmental resources. • Serious periods of inconvenience and delay to US 93 vehicle traffic during construction. • Estimated total construction cost is approximately $38 million.	• Short-term environmental impacts similar to Lane Configuration A. • Periods of inconvenience and delay to US 93 vehicle traffic during construction, but less than Lane Configuration A. • Estimated total construction cost is approximately $72 million.	• Short-term environmental impacts and periods of inconvenience and delay similar to Lane Configuration B. • Estimated total construction cost is approximately $83 million.	• Short-term environmental impacts and periods of inconvenience and delay similar to Lane Configurations B and C. • Estimated total construction cost is generally higher per mile than Lane Configuration C.	• Short-term environmental impacts and periods of inconvenience and delay are similar to Lane Configurations B, C and D. • Estimated total construction cost is greater than Lane Configuration B, but less than Lane Configuration C.

Table 5.2-2 Comparison of Impacts: Arlee Alignments

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (West Alignment)	Alignment 3 (East Alignment)	Alignment 4 (Jocko Valley Alignment)
6.1/7.1 Traffic Operation	• As traffic volume increases, adverse operating conditions more severe, including reduced speed, frequent traffic flow interruption and high number of turns to and from highway.	• MDT Preferred Alternative is Lane Configuration C, a four-lane highway with a continuous two-way left-turn center median. CSKT Preferred Alternative is Lane Configuration A, a two-lane highway, with left-turn bays. • Similar to No Action, but if additional lanes are added, turns to and from highway improve and interruption is reduced.	• Adverse operating conditions in Arlee eliminated. Speed not reduced, interruption eliminated and through traffic not affected as much by turns to and from highway.	• Similar to Alignment 2.	• Similar to Alignments 2 and 3.
6.1/7.1 Safety	• As traffic volume increases, more conflicts and potential safety problems related to highway traffic through the community.	• Conflicts and potential safety problems related to highway traffic similar to No Action. • Improvement in safety may occur if left-turn bays are added, approaches are consolidated or eliminated or pedestrian crossings are improved.	• Conflicts and potential safety problems related to highway traffic through the community mostly eliminated. • Highway approaches substantially reduced, which substantially decreases possibility of intersection- and driveway-related accidents.	• Beneficial impacts similar to Alignment 2, but close to schools, rodeo grounds and powwow grounds, which may result in additional vehicle and pedestrian conflicts and related accidents.	• Conflicts and potential safety problems related to highway traffic through the community virtually eliminated. • Other beneficial impacts similar to Alignments 2 and 3.
6.2/7.2 Land Use	• No highway improvement to encourage change of existing pattern of land use for commercial and residential development along highway through Arlee.	• Pattern of land use changes as highway improvement encourages more commercial development along highway through Arlee. • Converts 16 to 36 acres to highway ROW.	• Pattern of land use changes with introduction of highway traffic in rural areas. Without control of land use and access along new route, new development accelerates subdivision of land. • Converts 51 to 93 acres to ROW.	• Similar to Alignment 2. • Converts 44 to 86 acres to ROW.	• Similar to Alignments 2 and 3, but more severe because of more rural and undeveloped area with some prime and unique farmlands. • Converts 139 to 192 acres to ROW.
6.3/7.3 Farmlands	• No impact for FPPA farmlands (prime or unique farmlands or farmlands of statewide or local importance).	• No impact for FPPA farmlands.	• No impact for FPPA farmlands.	• No impact for FPPA farmlands.	• Conversion to ROW of up to 9.3 acres of FPPA farmland.

Table 5.2-2 Comparison of Impacts: Arlee Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (West Alignment)	Alignment 3 (East Alignment)	Alignment 4 (Jocko Valley Alignment)
6.4/7.4 Social	• More congestion increases barrier effect on social interaction and access. • Concentrated traffic diminishes positive perception of environment.	• Similar to No Action. • Wider highway may increase barrier effect.	• Diversion of through traffic reduces congestion and barrier effect on social interaction and access. • Without control of land use and access along new route, barrier effect shifts as development and traffic increase in area of new route. • Highway crosses area planned for sewer lagoon. • Strong public opposition.	• Reduction of congestion and barrier effect similar to Alignment 2, but highway and through traffic are located closer to schools. • Strong public opposition.	• Reduction of congestion and barrier effect similar to Alignments 2 and 3, but without increased traffic through residential areas between existing alignment and new route. • Strong public opposition.
6.5/7.5 Economics	• Business on highway remains visible to all traffic. • More congestion increases barrier to business. • Continues existing drive-through traffic in short-term, but limits long-term growth of sales, earnings and employment.	• Similar to No Action. • During construction, short-term disruption of access to business.	• Travel patterns divert traffic around community. Adverse effect for existing highway-oriented business. • Long-term improvement of access to business. • Traffic on local streets is not disrupted during construction. • Strong business opposition.	• Similar to Alignment 2.	• Similar to Alignments 2 and 3.
6.6/7.6 Pedestrians and Bicyclists	• Conflicts with pedestrians, particularly school children, and safety problems become more severe as traffic volume increases. • No realization of improvement to bicycle access.	• Conflicts with pedestrians and safety problems similar to No Action. • Some improvement occurs if additional crosswalks and traffic signals are installed. • A wider highway and additional lanes may be slightly more difficult for pedestrians to cross.	• Pedestrian crossings and conflicts substantially reduced. • Crossings on higher-speed highway than existing highway.	• Similar to Alignment 2, but closer to schools. Pedestrian crossings and potential conflicts and safety problems related to rodeo and powwow grounds.	• Similar to Alignments 2 and 3, but with fewer pedestrian crossings and virtually no crossings by school children.
6.7/7.7 Air Quality	• PM_{10} concentration high in spring due to accumulated winter sanding materials; use of chemical deicer reduces PM_{10}.	• CO concentration reduced if more lanes constructed. • PM_{10} concentration similar to No Action.	• CO and PM_{10} concentrations reduced in Arlee.	• Similar to Alignment 2.	• Similar to Alignments 2 and 3.
6.8/7.8 Noise	• Noise level will nearly equal FHWA noise abatement criterion of 67 dBA within 150 feet of highway centerline.	• Noise level in Arlee similar to No Action in the design year.	• Noise level increases by as much as 26 dBA in area of new alignment and exceeds FHWA noise abatement criterion. • Noise level in Arlee on existing alignment decreases by nine dBA.	• Similar to Alignment 2.	• Similar to Alignment 2.

Table 5.2-2 Comparison of Impacts: Arlee Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (West Alignment)	Alignment 3 (East Alignment)	Alignment 4 (Jocko Valley Alignment)
6.9/7.9 Water Quality	• No impact to water quality.	• Negligible impact because no streams or water bodies are crossed.	• Similar to Alignment 1.	• Requires three crossings of an irrigation canal, so potential water quality impact slightly greater than Alignment 1. A wellhead protection area exists on public school property adjacent to this alignment.	• New highway crossings over Jocko River and several creeks required with resulting greater potential for water quality impact.
6.10/7.10 Wetlands	• No impact to wetlands.	• Approximately ~~1.1 to 2.82~~ 2.48 acres affected~~, depending on lane configuration~~.	• ~~Similar to Alignment 1~~Approximately 2.58 to 5.09 acres affected, depending on lane configuration.	• ~~Similar to Alignments 1 and 2~~Approximately 2.16 to 5.28 acres affected, depending on lane configuration.	• Approximately ~~1.8 to 2.38~~ 23 to 13 13 acres affected, depending on lane configuration.
6.11/7.11 Floodplains and Stream Crossings	• No change for existing stream crossing and floodplain characteristics.	• No change for existing stream crossing and floodplain characteristics.	• No change for existing stream crossing and floodplain characteristics.	• No change for existing stream crossing and floodplain characteristics.	• Requires new crossings of Jocko River, Agency Creek, Pellew Creek and Spring Creek. No substantial increase of historic floodplain elevations.
6.12/7.12 Fish and Wildlife	• No impact to fish and wildlife habitat.	• Negligible impact to fish and wildlife habitat.	• Similar to Alignment 1.	• Similar to Alignments 1 and 2.	• Greater potential impact than Alignments 1, 2 and 3 because of introduction of highway traffic to new areas, with conversion of wildlife habitat to pavement and ROW.
6.13/7.13 Threatened and Endangered Species	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• Not likely to adversely affect any threatened or endangered species.
6.14/7.14 Cultural Resources	• No impact to cultural resources.	• Potential visual effect to one eligible historic building (24LA133).	• New traffic and development may affect traditional Native American uses.	Possible physical effect to one potentially eligible historic property.	• Potential impact to several historic properties.
6.15/7.15 Parks and Recreation	• Increasing traffic, with more noise and visual distraction, near community park.	• Places traffic, with more noise and visual distraction, closer to community park. • Provides opportunity to improve access to and control use of park.	• Diverts traffic away from existing alignment and reduces traffic near community park. • Increases traffic near Finley Creek.	• Similar to Alignment 2, but increases traffic near schools, powwow and rodeo grounds, ballfield and fish hatchery.	• Requires a new crossing of Jocko River and disrupts the natural setting used for recreation.

Table 5.2-2 Comparison of Impacts: Arlee Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (West Alignment)	Alignment 3 (East Alignment)	Alignment 4 (Jocko Valley Alignment)
6.16/7.16 Hazardous Materials	• Potential effect on human health due to transport of hazardous materials through community. • Nine existing sites near highway with moderate to high potential for contamination.	• Similar to No Action. • Nine existing sites near highway with moderate to high potential for contamination.	• Moves transport of hazardous materials outside community. • No identified sites within proposed new ROW with moderate to high potential for contamination.	• Moves transport of hazardous materials outside community, but closer to schools. • No identified sites within proposed new ROW with moderate to high potential for contamination.	• Similar to Alignment 2. • No identified sites within proposed new ROW with moderate to high potential for contamination.
6.17/7.17 Visual	• Increased traffic reduces visual quality for views from and of the road.	• Increase in traffic reduces visual quality. As pavement width increases, disturbance and visual fragmentation of the streetscape also increase.	• New alignment opens new views from and of the road. • New and wider roadways cause visual impact to rural residential areas.	• Similar to Alignment 2.	• Similar to Alignments 2 and 3.
6.18/7.18 Relocations	• No buildings require relocation.	• No buildings require relocation with Lane Configurations A and B. Four buildings require relocation with Lane Configuration C.	• No buildings require relocation.	• No buildings require relocation with Lane Configurations A, B and C. One building will require relocation with Lane Configuration D.	• One building requires relocation with Lane Configurations A, B and C. Two buildings require relocation with Lane Configuration D.
7.19 Energy and Commitment of Resources	• No improvement in traffic operating efficiency and no related long-term decrease in energy use. • No commitment of resources required.	• Traffic operating efficiency and related energy use, as compared with rural sections of the highway, will be poor due to frequent acceleration and deceleration.	• Traffic operating efficiency and related energy use similar to rural sections of highway, and substantially better than Alignment 1.	• Similar to Alignment 2.	• Slightly better than Alignments 2 and 3.
7.20 Construction	• No construction-related impact or cost.	•Short-term impacts occur for air quality, noise, water quality and other environmental resources. • Serious periods of inconvenience and delay to US 93 vehicle traffic during construction. • Short-term adverse impact to business.	• Short-term environmental impacts similar to Alignment 1. • Little or no inconvenience and delay to US 93 vehicle traffic.	• Similar to Alignment 2.	• Similar to Alignments 2 and 3, but substantially higher construction cost.

Table 5.2-3 Comparison of Impacts: Ronan Alignments

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (One-Way Couplet)	Alignment 3 (West Alignment)	Alignment 4 (West Alignment)
6.1/7.1 Traffic Operation	• As traffic volume increases, adverse operating conditions more severe, including reduced speed, frequent traffic flow interruption, high number of turns to and from highway.	• MDT Preferred Alternative is Lane Configuration C, a four-lane highway with a continuous two-way left-turn center median. CSKT Preferred Alternative is Lane Configuration A, a two-lane highway, with left-turn bays. • Similar to No Action, but if additional lanes are added, turns to and from highway improve and interruption is reduced.	• Introduces highway traffic to a new part of Ronan. • Improves LOS and makes crossing the highway less difficult.	• Adverse operating conditions in Ronan eliminated. Speed not reduced, interruption eliminated and through traffic not affected as much by turns to and from highway.	• Similar to Alignment 3.
6.1/7.1 Safety	• As traffic volume increases, more conflicts and potential safety problems related to highway traffic through the community.	• Conflicts and potential safety problems related to highway traffic similar to No Action. • Improvement in safety may occur if left-turn bays are added, approaches are consolidated or eliminated or pedestrian crossings are improved.	• Conflicts and potential safety problems and improvement related to highway traffic similar to Alignment 1. • Southbound portion of couplet results in additional conflicts with vehicles and pedestrians.	• Conflicts and potential safety problems related to highway traffic through the community mostly eliminated. • Highway approaches substantially reduced, which decreases possibility of intersection- and driveway- related accidents.	• Similar to Alignment 3.
6.2/7.2 Land Use	• No highway improvement to encourage change of existing pattern of land use for commercial and residential development along highway through Ronan.	• Pattern of land use changes as highway improvement encourages more commercial development along highway through Ronan. • Converts five to 13 acres to highway ROW.	• Similar to Alignment 1, but more severe because potential for commercial development to encroach on established residential and park areas. • Converts 18 acres to ROW.	• Pattern of land use changes with introduction of highway traffic in rural areas. Without control of land use and access along new route, potential new development accelerates subdivision of land. • Converts 54 to 84 acres to ROW.	• Similar to Alignment 3. • Converts 68 to 94 acres to ROW.
6.3/7.3 Farmlands	• No impact for FPPA farmlands (prime or unique farmlands or farmlands of statewide or local importance).	• Conversion to ROW of less than one acre of FPPA farmlands.	• Similar to Alignment 1.	• Conversion to ROW of up to 17.3 acres of FPPA farmland.	• Conversion to ROW of up to 16.1 acres of FPPA farmland.
6.4/7.4 Social	• More congestion increases barrier effect on social interaction and access. • Concentrated traffic diminishes positive perception of environment.	• Similar to No Action. • Wider highway may increase barrier effect.	• Similar to No Action and Alignment 1, and barrier effect is added in residential area with housing development for elderly and handicapped residents. • Strong public opposition.	• Diversion of through traffic reduces congestion and barrier effect on social interaction and access. • Without control of land use and access along new route, barrier effect shifts as development and traffic increase in area of new route. • Strong public opposition.	• Similar to Alignment 3. • Strong public opposition.

Table 5.2-3 Comparison of Impacts: Ronan Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (One-Way Couplet)	Alignment 3 (West Alignment)	Alignment 4 (West Alignment)
6.5/7.5 Economics	• Business on highway remains visible to all traffic. • More congestion increases barrier to business. • Continues existing drive-through traffic in short-term, but limits long-term growth of sales, earnings and employment.	• Similar to No Action. • During construction, short-term disruption of access to business.	• Most highway-oriented business is less visible to southbound traffic. • Long-term improvement of access to business. • During construction, short-term disruption of access to business. • Strong business opposition.	• Travel patterns divert traffic around community. Adverse effect for existing highway-oriented business. • Long-term improvement of access to business. • Traffic on local streets is not disrupted during construction. • Strong business opposition.	• Similar to Alignment 3.
6.6/7.6 Pedestrians and Bicyclists	• Conflicts with pedestrians, particularly school children, and safety problems become more severe as traffic volume increases. • No realization of improvement to bicycle access.	• Conflicts with pedestrians and safety problems similar to No Action. • Some improvement occurs if additional crosswalks and traffic signals are installed. • A wider highway and additional lanes may be slightly more difficult for pedestrians to cross.	• Similar to Alignment 1. • Southbound portion of couplet introduces highway traffic and resulting conflicts with pedestrians to residential area. • Pedestrians required to cross only one direction of traffic at a time.	• Pedestrian crossings and conflicts substantially reduced. • Crossings on higher speed highway than existing highway.	• Similar to Alignment 3.
6.7/7.7 Air Quality	• PM_{10} concentration exceeds NAAQS in the spring due to accumulated winter sanding materials; use of chemical deicer reduces PM_{10}.	• CO concentration reduced if more lanes constructed. • PM_{10} similar to No Action.	• CO concentration reduced. • PM_{10} similar to No Action and Alignment 1.	• CO and PM_{10} concentrations reduced in Ronan.	• Similar to Alignment 3.
6.8/7.8 Noise	• Noise level increases by approximately three dBA and will be equal to FHWA noise abatement criterion in the design year.	• Similar to No Action.	• Slight increase over existing noise level on existing alignment in the design year due to reduced traffic volume. • Noise level on southbound portion of couplet increases, but remains below FHWA noise abatement criterion.	• Noise level increases by as much as 26 dBA in area of new alignment and exceeds FHWA noise abatement criterion. • Noise level in Ronan on existing alignment decreases by five dBA.	• Similar to Alignment 3.
6.9/7.9 Water Quality	• No impact to water quality.	• Existing crossing of Spring Creek requires reconstruction, with related potential water quality impact.	• Two existing crossings of Spring Creek will require reconstruction.	• Requires new crossings of Spring Creek and an irrigation canal, so potential water quality impact slightly greater than Alignment 2.	• Requires new crossings of Spring Creek and two irrigation canals, so potential water quality impact slightly greater than Alignments 2 and 3.
6.10/7.10 Wetlands	• No impact to wetlands.	• Approximately ~~0.1 to 0.20~~ 59 acre affected~~, depending on lane configuration~~.	• ~~No impact to wetlands~~ Approximately 0.41 to 1.41 acres affected, depending on lane configuration.	• Approximately ~~0.6 to 0.82~~ 42 to 3.87 acres affected, depending on lane configuration.	• Approximately ~~1.4 to 1.86~~ 22 to 10.18 acres affected, depending on lane configuration.

Table 5.2-3 Comparison of Impacts: Ronan Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (One-Way Couplet)	Alignment 3 (West Alignment)	Alignment 4 (West Alignment)
6.11/7.11 Floodplains and Stream Crossings	• No change for existing stream crossings and floodplain characteristics.	• Requires modification of existing crossing of Spring Creek. No substantial increase of historic floodplain elevations.	• Requires modification of two existing crossings of Spring Creek. No substantial increase of historic floodplain elevations.	• Require a new crossing of Spring Creek. No substantial increase of historic floodplain elevations.	• Requires new crossing of Spring Creek. No substantial increase of historic floodplain elevations.
6.12/7.12 Fish and Wildlife	• No impact to fish and wildlife habitat.	• Negligible impact to fish and wildlife habitat.	• Similar to Alignment 1.	• Similar to Alignments 1 and 2.	• Similar to Alignments 1, 2 and 3.
6.13/7.13 Threatened and Endangered Species	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.	• No impact to threatened or endangered species.
6.14/7.14 Cultural Resources	• No impact to cultural resources.	• No impact to cultural resources.	• Potential visual effect to three unrecorded cultural resource properties whose eligibility is undetermined.	• Potential visual effect to four unrecorded cultural resource properties whose eligibility is undetermined.	• Potential visual effect to one potentially eligible property (24LA211).
6.15/7.15 Parks and Recreation	• Increasing traffic, with more noise and visual distraction, near park and recreation areas.	• Places traffic, with more noise and visual distraction, closer to ballfield at north edge of Ronan. • Provides opportunity to improve access to and control use of recreation areas.	• Opportunity to improve access to and control use of park and recreation areas similar to Alignment 1. • Requires land for ROW along the east edge of city park.	• Diverts traffic away from city park and ballfield on existing alignment. • Increases traffic near the ballfield at the west edge of Ronan.	• Similar to Alignment 3. • Requires conversion of ballfield land to ROW.
6.16/7.16 Hazardous Materials	• Potential effect on human health due to transport of hazardous materials through community. • Nine existing sites near highway with moderate to high potential for contamination.	• Similar to No Action. • Nine existing sites near highway with moderate to high potential for contamination.	• Similar to No Action and Alignment 1. • Fifteen existing sites near highway with moderate to high potential for contamination.	• Moves transport of hazardous materials outside community. • Three existing sites near highway with moderate to high potential for contamination.	• Similar to Alignment 3. • Three existing sites near highway with moderate to high potential for contamination.
6.17/7.17 Visual	• Increased traffic reduces visual quality for views from and of the road.	• Increase in traffic reduces visual quality. As pavement width increases, disturbance and visual fragmentation of the streetscape also increase.	• Views from and of the road unchanged on northbound couplet, but adversely affected on new southbound roadway.	• New alignment opens new views from and of the road. • New and wider roadways cause visual impact to rural residential areas.	• Similar to Alignment 3.

Table 5.2-3 Comparison of Impacts: Ronan Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2 (One-Way Couplet)	Alignment 3 (West Alignment)	Alignment 4 (West Alignment)
6.18/7.18 Relocations	• No buildings require relocation.	• No buildings require relocation.	• Five buildings require relocation.	• Two buildings require relocation with Lane Configuration A. Lane Configurations B, C and D each require relocation of four buildings.	• Three buildings require relocation with Lane Configuration A, while Lane Configurations B, C and D require relocation of six, seven and seven buildings, respectively.
7.19 Energy and Commitment of Resources	• No improvement in traffic operating efficiency or related long-term decrease in energy use. • No commitment of resources required.	• Traffic operating efficiency and related energy use, as compared with rural sections of the highway, will be poor due to frequent acceleration and deceleration.	• Slight improvement over No Action and Alignment 1.	• Traffic operating efficiency and related energy use similar to rural sections of highway, and substantially better than Alignments 1 and 2.	• Similar to Alignment 3.
7.20 Construction	• No construction-related impact or cost.	• Short-term impacts occur for air quality, noise, water quality and other environmental resources. • Serious periods of inconvenience and delay to US 93 vehicle traffic during construction. • Short-term adverse impact to business.	• Short-term environmental impacts similar to Alignment 1. • Impact to business during construction less than Alignment 1.	• Short-term environmental impacts similar to Alignments 1 and 2. • Little or no inconvenience and delay to US 93 vehicle traffic.	• Similar to Alignment 3.

Table 5.2-4 Comparison of Impacts: Polson Alignments

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2	MDT Preferred Alternative Alignment 3
6.1/7.1 Traffic Operation	• As traffic volume increases, adverse operating conditions more severe, including reduced speed, frequent traffic flow interruption, high number of turns to and from highway and high traffic volume.	• MDT Preferred Alternative is Lane Configuration A, a two-lane highway with a continuous two-way left-turn center median. CSKT Preferred Alternative is Lane Configuration A, a two-lane highway, with left-turn bays. • Traffic flows more freely with additional lanes, and breaks in traffic are larger and more frequent.	• Adverse operating conditions on existing alignment greatly reduced. Speed increases and interruption is reduced on new roadway as a result of fewer highway approaches.	• MDT Preferred Alternative is Lane Configuration B, a four-lane highway. CSKT does not recommend Alignment 3 for the preferred alternative. • Similar to Alignment 2 but with fewer delays due to fewer highway approaches to new road.
6.1/7.1 Safety	• As traffic volume increases, more conflicts and potential safety problems related to highway traffic through the community.	• Conflicts and potential safety problems related to highway traffic similar to No Action. • Improvement in safety may occur if approaches are consolidated or eliminated and pedestrian crossings are improved.	• Conflicts and potential safety problems related to highway traffic through the community greatly reduced. Highway approaches substantially reduced, decreasing possibility of intersection- and driveway-related accidents.	• Similar to Alignment 2, but with fewer highway approaches, further reducing the possibility of intersection- and driveway-related accidents.
6.2/7.2 Land Use	• No highway improvement to encourage change of existing pattern of land use for commercial and residential development along highway through Polson.	• Pattern of land use changes slightly as highway improvement encourages more commercial development along the highway through Polson. • Converts 17 to 40 acres to highway ROW.	• Pattern of land use changes with introduction of highway in rural areas. • Without control of land use and access along new route, potential new development accelerates subdivision of land. • Converts 108 to 141 acres to ROW.	• Similar to Alignment 2. • Converts 140 to 179 acres to ROW.
6.3/7.3 Farmlands	• No impact for FPPA farmlands (prime or unique farmlands or farmlands of statewide or local importance).	• Requires conversion of up to 1.6 acres of FPPA farmland to ROW.	• Requires conversion of up to 29.5 acres of FPPA farmland to ROW.	• Requires conversion of up to 35.7 acres of FPPA farmland to ROW.
6.4/7.4 Social	• Increased barrier separating social interactions between north side of Polson and rest of city. • Access to business and recreation areas decreased. • Congestion could slow emergency vehicle response times. • Concentrated traffic diminishes positive perception of environment.	• Similar to No Action, except improvement for emergency vehicle response time. • Wider highway may increase barrier effect.	• Diversion of through traffic reduces congestion and barrier to social interaction and access to business and recreation areas. • Without control of land use and access along new route, barrier effect shifts as development and traffic increase in area of new route. • Less congestion improves emergency vehicle response time.	• Similar to Alignment 2.

Table 5.2-4 Comparison of Impacts: Polson Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2	MDT Preferred Alternative Alignment 3
6.5/7.5 Economics	• Business on highway remains visible to all traffic. • More congestion increases barrier to business. • Continues most drive-through traffic in long-term with additional travelers using MT 35. • Increased traffic discourages major tourist attractions from being developed along the shoreline of Flathead Lake.	• Similar to No Action. • During construction, short-term disruption of access to business.	• Travel patterns divert traffic around community. • Reduced potential tourist visual exposure to Polson area, and fewer businesses are visible to all traffic. • Long-term improvement of access to business in lake front area. • Traffic on local streets is not disrupted during construction.	• Similar to Alignment 2.
6.6/7.6 Pedestrians and Bicyclists	• More conflicts with pedestrians, particularly senior citizens and children. • Safety problems become more severe as traffic volume increases.	• Similar to No Action. • Some improvement occurs if additional crosswalks, traffic signals and pedestrian and bicycle paths are installed. • A wider highway may be slightly more difficult for pedestrians to cross.	• Pedestrian crossings and conflicts with pedestrians and bicyclists substantially reduced. • Crossings will be on a higher-speed highway than existing highway.	• Similar to Alignment 2, with even less potential for conflicts with pedestrians and bicyclist.
6.7/7.7 Air Quality	• PM_{10} concentration exceeds NAAQS in the spring due to accumulated winter sanding materials; chemical deicer reduces PM_{10}.	• CO concentration reduced. • PM_{10} similar to No Action.	• CO and PM_{10} concentration reduced in Polson.	• Similar to Alignment 2.
6.8/7.8 Noise	• Noise level will be 69 dBA, which exceeds FHWA noise abatement criterion of 67 dBA within 100 feet of highway centerline.	• Noise level in Polson similar to No Action in the design year.	• Noise level increases by as much as 22 dBA in area of new alignment and exceeds FHWA noise abatement criterion. • Noise level in Polson on existing alignment decreases slightly.	• Similar to Alignment 2.
6.9/7.9 Water Quality	• Storm water runoff continues to discharge directly into Flathead Lake.	• Drainage improvement potentially improves water quality, in concert with highway widening. • New bridge structure over Flathead River could have some impact to water quality.	• New crossings of Pablo feeder canal and bridge structure over Flathead River required, with related potential water quality impact. • Storm water runoff continues to discharge directly into Flathead Lake on existing alignment.	• Similar to Alignment 2.
6.10/7.10 Wetlands	• No impact to wetlands.	• Approximately ~~0.2 to 0.40~~ 15 acre affected~~, depending on lane configuration~~.	• Approximately ~~1.3 to 1.70~~ 37 to 2.26 acres affected, depending on lane configuration.	• Approximately ~~0.4 to 10~~ 08 acre affected~~, depending on lane configuration~~.

Table 5.2-4 Comparison of Impacts: Polson Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2	MDT Preferred Alternative Alignment 3
6.11/7.11 Floodplains and Stream Crossings	• No change to existing floodplains and stream crossings.	• If Lane Configuration B, C or D is constructed, requires new bridge north of the existing bridge over Flathead River. No substantial increase of historic floodplain elevations.	• Requires new bridge over Flathead River. No substantial increase of historic floodplain elevations.	• Requires new bridge over Flathead River. No substantial increase of historic floodplain elevations.
6.12/7.12 Fish and Wildlife	• No impact to fish and wildlife habitat.	• No impact to fish and wildlife habitat.	• Some loss of habitat may occur for wildlife, and some displacement of waterfowl may result from new roadway and bridge structure.	• Similar to Alignment 2, but with slightly less potential loss of habitat and displacement of waterfowl.
6.13/7.13 Threatened and Endangered Species	• No impact to threatened and endangered species.	• Not likely to adversely affect bald eagle. No impact to other threatened and endangered species.	• Not likely to adversely affect bald eagle. No impact to other threatened and endangered species.	• Not likely to adversely affect bald eagle. No impact to other threatened and endangered species.
6.14/7.14 Cultural Resources	• No impact to cultural resources.	• Potential impact to 10 historic properties. • Adverse effect on the NPRR Dixon-Polson branchline, which is an eligible site and has been previously recorded.	• Potential direct physical effect to one historic property, with undetermined eligibility.	• Similar to Alignment 2.
6.15/7.15 Parks and Recreation	• Increasing traffic, with more noise and visual distraction, near park and recreation areas.	• Potential impact to Municipal Golf Course and substantial impacts to Ducharme Park, Riverside Park and Lions Park. • Requires 1.4 acres of public land to convert to ROW.	• Converts from public land to ROW 16 and 20 acres of land with Lane Configurations B and D, respectively. • Converts to ROW a portion of the 7th Avenue ball fields, including part of one ball diamond.	• No impact to parks and recreation land.
6.16/7.16 Hazardous Materials	• Known contamination of soil along some portions of ROW and high potential for contamination along additional portions. • Potential effect on human health due to transport of hazardous materials through community. • Twenty-two existing sites near highway with moderate to high potential for contamination.	• Similar to No Action. • Twenty-two existing sites near highway with moderate to high potential for contamination.	• No known contamination of soil along ROW and some potential for contamination in two locations. • Moves transport of hazardous materials outside community. • Three sites near highway with moderate to high potential for contamination.	• Similar to Alignment 2. • One site near highway with moderate to high potential for contamination.

Table 5.2-4 Comparison of Impacts: Polson Alignments (continued)

Sections	No Action	MDT and CSKT Preferred Alternatives Alignment 1 (Existing Alignment)	Alignment 2	MDT Preferred Alternative Alignment 3
6.17/7.17 Visual	• No impact to existing visual character.	• Increase in visual scale of highway through town. • If Lane Configuration B, C or D is constructed, a new bridge structure will be required north of the existing bridge and will creates visual impact to Flathead River from many areas of Polson.	• Increase in views of Polson and Flathead Lake. • New and wider roadways cause visual impact to rural residential areas. • Grade changes along Kerr Dam Road require cut and fill to maintain an acceptable road grade, creating a visual impact to nearby residential areas. • New river crossing affects existing river view from many areas of Polson.	• Substantial decrease of views of Polson and Flathead Lake. • Hilly terrain prohibits a view of Flathead River until the road curves west to cross the river. • New road segments, increased road width along existing alignment, and new bridge across Flathead River have a visual impact to rural residential areas.
6.18/7.18 Relocations	• No buildings require relocation.	• May require relocation of one building and one residence. • Eliminates entirely, or reduces, substantial amounts of parking for business.	• Requires relocation of six buildings and six residences, and, additionally, may require relocation of three more buildings and three more residences.	• Requires relocation of three residences, and, additionally, may require relocation of four more buildings and three more residences.
7.19 Energy and Commitment of Resources	• Decreasing traffic operating efficiency or related long-term increase in energy use. • No commitment of resources required.	• Traffic operating efficiency and related energy use levels better than the existing conditions. • Some additional energy used by deceleration and acceleration required through installation of new traffic signals.	• Traffic operating efficiency and related energy use similar to rural sections of highway, and substantially better than Alignment 1.	• Similar to Alignment 2, with even more efficient movement on new alignment due to fewer highway approaches.
7.20 Construction	• No construction-related impact or cost.	• Short-term impacts occur for air quality, noise, water quality and other environmental resources. • Long periods of inconvenience and delay to US 93 traffic. • Adverse impact to business.	• Short-term environmental impacts similar to Alignment 1. • Minor impact to traffic during construction.	• Similar to Alignment 2.

5.3. THE MDT PREFERRED ALTERNATIVE

~~This section identifies the preferred alternative for segments of the roadway and explains reasons for selection.~~

The MDT Preferred Alternative to improve US 93 was developed by the Interdisciplinary (ID) Team,[13] which considered engineering and environmental studies; recommendations from community teams in Arlee, Ronan, Pablo and Polson; and public comment.[14] The MDT Preferred Alternative ~~of the ID Team~~ includes the recommendations of MDT, FHWA, Lake and Missoula counties and the cities of Ronan and Polson. CSKT, which also is a member of the ID Team, has made a recommendation for a preferred alternative that differs from that of the ID Team ~~has not made a recommendation for a preferred alternative.~~ The following sections describe the MDT Preferred Alternative and explain reasons for recommendations for alignment alternatives (Section 5.3.1), lane configurations (Section 5.3.2), TDM options (Section 5.3.3) and design options (Section 5.3.4).

Section 5.4 presents details about the CSKT Preferred Alternative.

5.3.1. Alignments of the MDT Preferred Alternative

Alignment 1 has been selected as the alignment alternative that is preferred throughout the area, except in Polson. Alignment 1 follows the existing highway alignment with only minor adjustments to improve the horizontal and vertical alignment of the roadway and to avoid, as much as practical, important topographic features, residences or other buildings and environmental features such as wetlands, streams and riparian areas.

Preservation of a corridor of land for future construction of the highway around Arlee and Ronan is recommended on Alignment 2 through the Arlee area and Alignment 4 through the Ronan area. Corridor preservation will be accomplished by measures such as: 1) cooperative access control and land use planning and regulation with tribal and local governments; 2) purchase of easements, options or ROW by MDT; and other public/private cooperative methods.

At Polson, Alignment 1 is recommended as the designated route for US 93, and Alignment 3, which is approximately 5.8 miles long and passes south and west of Polson, is recommended as a truck route and as an alternate route around Polson. Alignment 1 will remain as a business and scenic route through Polson. On Alignment 3, access should be restricted to only intersections with Skyline Drive, Kerr Dam Road, Irvine Flats Road, US 93 at both ends and existing driveways along Caffrey Road. Signing should be provided to designate Alignment 3 as a truck route and the existing route (Alignment 1) as a business and scenic route. (Figure 5.1-3)

Specific reasons for the selection of alignment alternatives in Arlee, Ronan and Polson are discussed in the following paragraphs.

Arlee. Specific reasons for selecting Alignment 1, the existing alignment, for improvements to US 93 in the Arlee area include the following:

- Information received during the public scoping process indicates the public is strongly in favor of constructing the new roadway on its existing alignment.

- Substantial public opposition has been expressed to each of the alignments (Alignments 2, 3 and 4).

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[13]As explained in Section 10.1.2, the ID Team is an advisory group with representatives from governmental agencies with legal jurisdiction in the area of the proposed action.

[14]As explained in Section 10.1.2, the community teams are advisory groups with representatives from governments, schools, business and citizens groups in communities.

- Alignment 2 may impact important cultural resource sites west of Arlee.

- Many residents of Arlee feel that reconstructing the roadway on its existing alignment will be most safe for pedestrians and bicyclists, particularly school children. They indicate having the lower speed traffic through the community will be much more safe than constructing a higher speed roadway west or east of the community.

- Constructing Alignment 3, just east of Arlee, may impact the public schools, the rodeo grounds and the powwow grounds.

- Constructing Alignment 4 will remove a substantial amount of farmland from production; introduce traffic and related noise, air quality and other impacts to areas currently not impacted; and require a new crossing of the Jocko River.

- Alignment 1 will have the least impact on existing highway-oriented business. Economic studies indicate that diverting traffic away from highway-oriented business may adversely affect them. Representatives of local business and many local residents feel strongly that any impact on existing business will have substantial negative impacts on the economy -- they feel some businesses will not be able to survive and many jobs will be lost.

- Less land will be converted to highway ROW than with Alignments 2, 3 or 4.

- No streams or other water bodies will be crossed, and no floodplains will be affected.

- There will be negligible impacts on threatened or endangered species and other wildlife.

- No sites that are eligible for the National Register of Historic Places (NRHP) will be impacted.

- There will be minor use of Section 4(f) property.

Ronan. Specific reasons for selecting Alignment 1, the existing alignment, for improvements to US 93 in the Ronan area include the following:

- Montana law prohibits MDT from constructing highway routes that divert motor vehicles away from an existing roadway without the consent of the governing body (MCA 60-2-211). The city of Ronan has denied consent. This effectively prohibits the construction of Alignment 3 or 4.

- Information received during the public scoping process indicates the public is in favor of constructing the new roadway on its existing alignment.

- Substantial public opposition has been expressed to each of the alignments (Alignments 2, 3 and 4).

- Constructing Alignment 2, the one-way couplet, will require the relocation of several buildings and will introduce highway traffic into residential and other areas, with related noise, air quality, safety and other impacts.

- Constructing Alignment 3 or 4 will remove a substantial amount of farmland from production and introduce traffic and related noise, air quality, safety and other impacts to areas currently without highway traffic.

- Alignment 1 will have the least impact on existing highway-oriented business. Economic studies indicate that diverting traffic away from highway-oriented business may adversely affect them. Representatives of local business and many local residents feel strongly that any impact on existing business will have substantial negative impacts on the economy -- they feel some businesses will not be able to survive and many jobs will be lost.

- Less land will be converted to highway ROW than with Alignments 2, 3 or 4.

- There will be negligible impacts on threatened or endangered species and other wildlife.

- No sites that are eligible for the NRHP will be impacted.

- There will be no use of Section 4(f) property.

Polson. Specific reasons for selecting Alignment 3, the western-most alignment, and improvements to Alignment 1, the existing alignment, in the Polson area include the following:

- Information received during the public scoping process indicates the majority of the public is in favor of constructing a new roadway on a new alignment.

- The Polson Community Team's recommendation for a preferred alternative also is for construction of Alignment 3 and improvements to the existing alignment.

- Constructing Alignment 2 will have direct impacts to a Section 4(f) site, will require the greatest number of residence relocations, will have noise impacts to the greatest number of sensitive receptors and has some potential to affect threatened and endangered species.

- Constructing Alignment 1 will not improve safety conditions substantially, will increase the barrier effect, may have direct impacts to four Section 4(f) sites, will have the greatest potential to encounter hazardous materials, will require taking a substantial amount of parking from existing businesses and will create the greatest construction related impacts to business and traffic.

- There will be negligible impacts on threatened or endangered species and other wildlife.

- One site eligible for the NRHP will be impacted.

- There will be no use of Section 4(f) property.

- Traffic operating efficiency will be greater than with Alignments 1 or 2 due to fewer highway approaches.

- The Polson City Council has voted in favor of the MDT Preferred Alternative.

5.3.2. Lane Configurations of the MDT Preferred Alternative

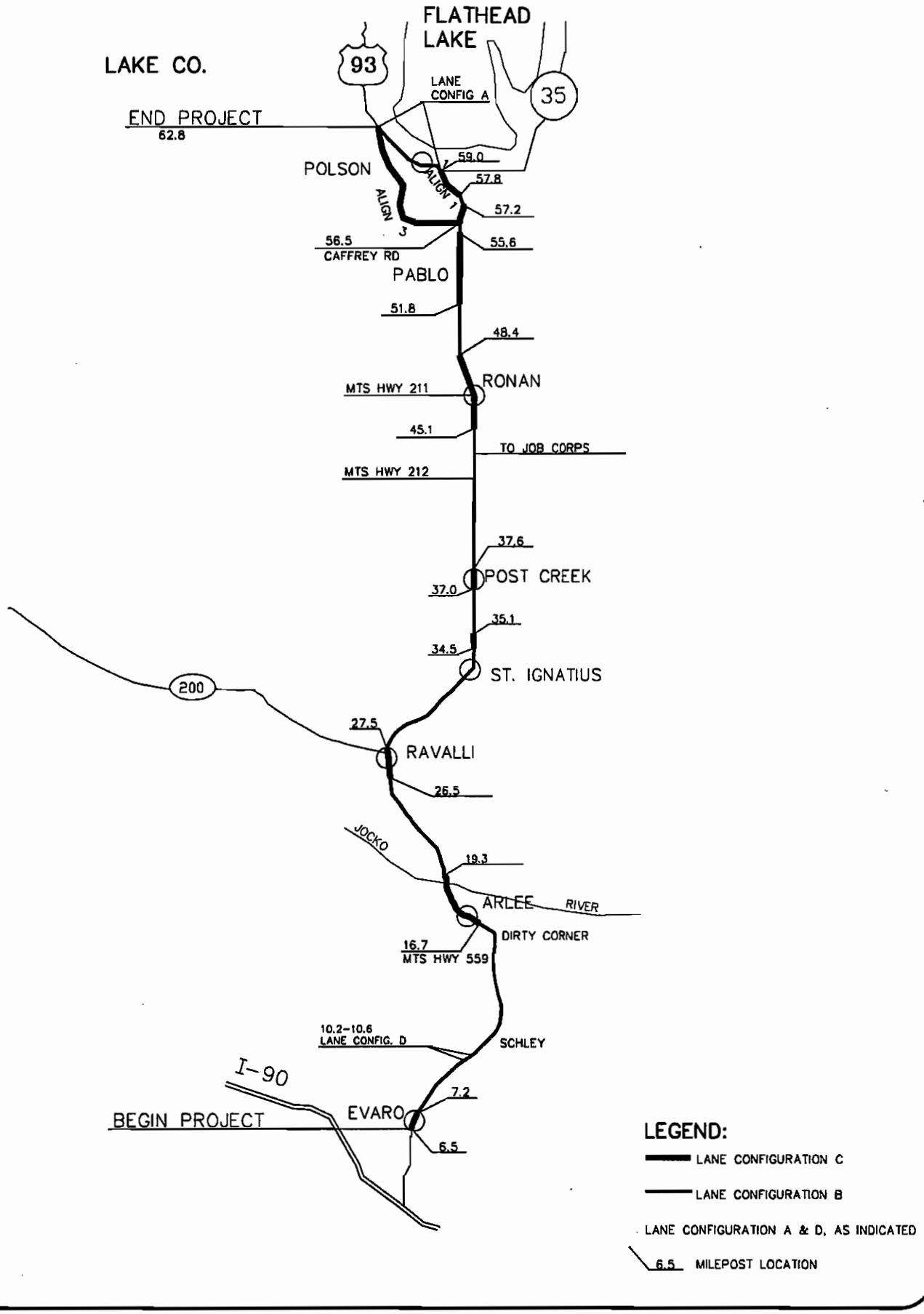
A discussion of where each lane configuration generally is most appropriate is included in following paragraphs. Specific locations where each lane configuration has been selected are shown on Table 5.3-1 and Figure 5.3-1.

Selected lane configurations shown on the table at specific locations are based on existing and projected future conditions. The locations and lengths shown are intended to be a current best estimate of the extent of each lane configuration that should be constructed. As the construction date for each segment of the proposed action nears,

Table 5.3-1 Lane Configuration of the Preferred Alternative

LOCATION (Mileposts)		LANE CONFIGURATION				LOCATION DESCRIPTION
FROM	TO	A	B	C	D	
6.5	7.2			0.7		Evaro
7.2	10.2		3.0			Evaro to vicinity of Joe's Smoke Ring
10.2	10.6				0.4	Evaro wildlife corridor (Joe's Smoke Ring to Schley homesites)
10.6	16.7		6.1			Schley homesites to Jocko Road (~~MTSFAS~~ 559)
16.7	17.3			0.6		Jocko Road (~~MTSFAS~~ 559) to Arlee
17.3	18.4			1.1		Arlee
18.4	19.3			0.9		Arlee to north of Dumontier Road
19.3	26.5		7.2			North of Dumontier Road to Ravalli
26.5	27.5			1.0		Ravalli
27.5	34.5		7.0			Ravalli to north of St. Ignatius
34.5	35.1			0.6		Vicinity of Lemery/Pinsoneault roads, north of St. Ignatius
35.1	37.0		1.9			North of St. Ignatius to Post Creek area
37.0	37.6			0.6		Post Creek area
37.6	45.1		7.5			Post Creek area to area south of Ronan
45.1	46.1			1.0		Area south of Ronan
46.1	47.9			1.8		Ronan
47.9	48.4			0.5		Ronan to vicinity of Baptiste/Spring Creek roads, north of Ronan
48.4	51.8		3.4			North of Ronan to Pablo
51.8	53.6			1.8		Pablo
53.6	55.6			2.0		North of Pablo, vicinity of Courville/Light roads to North Reservoir Road/Minesinger Trail
55.6	56.5		0.9			North Reservoir Road/Minesinger Trail to Caffrey/Ford roads
56.5	57.2			0.7		Caffrey/Ford roads to highway segment with narrow width due to hill and railroad tracks
57.2	57.8		0.6			Highway segment with narrow width
57.8	59.0			1.2		Highway segment with narrow width to MT 35
59.0	61.1	2.1*				MT 35 to Flathead River bridge, Polson
61.1	62.8	1.7**				Flathead River bridge to end of proposed action, Polson
SUBTOTAL: EXISTING ALIGNMENT		3.8	37.6	14.5	0.4	
56.5	62.8		5.8			Alignment 3 around Polson
TOTALS		3.8	43.4	14.5	0.4	

Morrison-Maierle and Carter Burgess. 1994.
*. No change in existing lane configuration. ** Addition of a continuous two-way left-turn center median.



LANE CONFIGURATION OF THE MDT PREFERRED ALTERNATIVE **FIGURE 5.3-1**

US93EIS\FIG53-1.DWG 6-04-96

refinements and revisions to these locations and lengths may be necessary, but substantial and extensive revisions are not expected.

Lane Configuration A

Lane Configuration A, the ~~modified~~improved two-lane alternative, is recommended for 3.8 miles (seven percent) of the proposed action, including in Polson on Alignment 1 and temporarily as part of the Polson truck route (Alignment 3). It is not recommended for the remainder of the proposed action because it will not meet the purpose and need for the following reasons:

- Lane Configuration A will provide no substantial improvements in the existing capacity and poor LOS of the roadway. The existing two-lane highway is generally operating at LOS D and E and is projected to operate at LOS ~~E and~~ F by the design year ~~2015~~2020. Lane Configuration A will provide only minor improvements in LOS and capacity. It also is projected to generally operate at LOS ~~E and~~ F in the design year. Construction of passing lanes or truck climbing lanes "where needed" will improve LOS in the direction of the additional lane, but will not improve and may actually be detrimental to LOS of the opposing traffic lane.

  As indicated in Section 4.4, acceptable operation for a highway of this type is considered to be LOS B. Construction of any of the four-lane configurations (Lane Configuration B, C or D) will increase the highway's capacity to three-to-four times existing levels or Lane Configuration A levels. A four-lane highway will ensure the highway facility will accommodate projected traffic volumes through the design year ~~2015~~2020.

- Lane Configuration A will not help to substantially reduce head-on collisions and rear-end collisions, which generally are more serious and cause more serious injuries and damage. For example, studies of accident records have indicated injury accidents were reduced to approximately one-third and fatalities were eliminated in the first five years after the six-mile section of US 93 from Interstate Highway 90 to Evaro was improved from two lanes to four lanes.

Lane Configuration B

Lane Configuration B, the four-lane undivided highway alternative with no continuous two-way left-turn center median, is recommended for most of the length of the proposed action, approximately 37.6 miles (67%) on the existing alignment and, when warranted by traffic volume, 5.8 miles on Alignment 3 at Polson ~~(70%)~~. It includes areas where:

- There are currently lower numbers of approaches to the highway and consequently not a large demand for left turns from the highway, and

- Construction of a wider roadway to include a continuous two-way left-turn center median (Lane Configuration C) or a divided highway (Lane Configuration D) will: 1) cause substantial, otherwise avoidable, environmental impacts or 2) require unreasonable construction costs.

~~Wherever Lane Configuration B is recommended, it will include the design options of constructing a four-foot wide painted center median and designated left-turn bays.~~

A survey conducted in 1994 for the Confederated Salish and Kootenai Tribes, of both tribal members and non-tribal members living on the Flathead Indian Reservation, indicates agreement that serious problems exist with driving conditions on many sections and overall on the highway. Approximately 55% of both groups rated overall driving conditions as having serious problems. The survey also indicated that 63% of tribal members and 63% of non-tribal members either supported or strongly supported converting US 93 to an undivided four-lane highway with turn bays

at intersections (Lane Configuration B). Overall, there was more support for a four-lane highway than a two-lane highway, but tribal members indicated more support than non-tribal members for a two-lane highway. Approximately 47% of tribal members, compared with 31% of non-tribal members, either supported or strongly supported maintaining US 93 as a two-lane highway and adding turn bays and passing lanes[18].

Lane Configuration C

Lane Configuration C, the four-lane highway alternative with a continuous two-way left-turn center median, is recommended for 14.5 miles (25%) of the proposed action, including areas where:

- In communities and where there are currently higher numbers of approaches to the highway and consequently a large demand for left turns from the highway.

- The density and use of approaches and the density of development adjacent to the highway are such that substantial reductions in the number of current approaches by implementation of partial access control and construction of frontage roads is not practical.

- A substantial amount of development already has occurred, and it is considered desirable to accommodate this development by providing many opportunities for left turns, and

- Construction of a wider roadway to include a continuous two-way left-turn center median can be accomplished without: 1) causing substantial, otherwise avoidable, environmental impacts or 2) requiring unreasonable construction costs.

Lane Configuration D

Lane Configuration D, the four-lane highway alternative with an unpaved center median at least 40-feet wide, is recommended on 0.4 mile (one percent) of the proposed action. This is in the area of the Evaro wildlife corridor. It will provide better opportunity to construct safe and effective wildlife crossings.

Polson Area. The lane configurations selected in Polson are explained in the following paragraphs:

Alignment 1, MT 35 to the Flathead River bridge - Similar to Ronan, Arlee and Evaro, there is a high demand for left turns from the highway. Lane Configurations B and C were not selected because of the extensive impact to business parking, relocation of several buildings, and encroachment into Flathead Lake and Ducharme Park. Alignment 3 is expected to provide relief for through traffic movements and provide for a higher speed facility with few access points. Therefore, for this segment on the existing alignment, US 93 is recommended to remain in the existing lane configuration (two lanes with a continuous two-way left-turn center median).

Various Transportation System Management (TSM) improvements are recommended for this section including adding designated left-turn bays, traffic signals, asphalt overlay, intersection and safety improvement and pedestrian and bicycle improvement.

Alignment 3 - Lane Configuration B has been selected by the ID Team on Alignment 3 to carry traffic volume in the design year ~~2015~~2020. Because of current lower traffic volume, Lane Configuration A with

[18] Bioeconomics, Inc. and Boyer Consulting Services. Draft, U.S. Highway 93 Corridor Use and Opinion Survey - Summary Results and Survey Methodology. 10 November 1994. Pages 10-11. The percentages do not add to 100% because some respondents indicated support or strong support for both improvement alternatives and some indicated support for neither.

passing lanes is recommended for initial construction on Alignment 3, along with acquisition of ROW for future construction of Lane Configuration B.

5.3.3. Transportation Demand Management

TDM alternatives under consideration for the proposed action are described in Section 5.1.4.

Studies, evaluations and public/agency comments received to-date indicate that:

- Implementation of TDM measures is a desirable, long-term goal, and any highway improvement should be designed to: 1) not reduce or adversely affect TDM activities already occurring and 2) accommodate and promote increased use of TDM.

- Incorporation of TDM is not likely to substantially reduce existing and design year ~~2015~~2020 traffic demand and volume on US 93. TDM will, therefore, not substantially reduce the need for highway improvement.

A transit development plan (TDP) being prepared for Lake County may identify measures that can be included in the final design of highway improvement. ~~The results of the TDP will be available for the final EIS.~~

5.3.4. Design Options of the MDT Preferred Alternative

Design options under consideration for the proposed action are described in Section 5.1.6. Recommendations for the application of some of the more prominent and more readily identifiable design options are described in following paragraphs. Others will be more appropriately addressed during the design phase of the proposed action. After the final EIS is complete, it is recommended participation of community teams (developed during the environmental analysis phases) be continued through project design phases. This will help ensure that local involvement is continued to help select the most appropriate design options. With this concept, a team will be organized for each of the anticipated six or more construction projects, and each team will consist of representatives of local and tribal governments, business, schools and possibly other community organizations. Each team will meet several times during design phases with project engineers and designers to review construction plans as they are developed and provide local suggestions and information.

Arlee Design Options

The Arlee Community Team identified a preferred alternative as follows:

1. Improve the existing alignment through Arlee.

2. The highway should have two lanes for traffic, with a continuous two-way left-turn center median. (As indicated in Section 5.3.2, the MDT Preferred Alternative, which was recommended by the ID Team, is Lane Configuration C, a four-lane highway with a continuous two-way left-turn center median.)

3. Include an eight-foot shoulder, but prohibit on-street parking. (If Lane Configuration C is constructed, 2.5 foot wide shoulders will be used with no on-street parking.)

4. Include sidewalk, curb and gutter.

5. Install a pedestrian-activated traffic signal at the intersection of "B" Street (Butch Larsen/Taclman) and US 93. Install advance traffic signal warning lights north and south of the traffic signal.

6. Educate school children to cross the highway only at the traffic signal crossing. The Arlee schools should provide crossing guards at the traffic signal crossing.

7. Do not develop a process for a transportation "corridor preservation" plan for the community. The community team indicated there is not a "general charge" from the Arlee community to develop land use planning and regulation in the Arlee area. The community team indicated land use planning and regulation should be developed with the authority available for the Confederated Salish and Kootenai Tribes and Lake County.

8. Develop a plan for posting highway signs that state US 93 through the Flathead Indian Reservation is not a "super highway." Highway signs also should state a 55 miles per hour (mph) speed limit[16] is enforced, and the highway route is located to route traffic through communities.[17]

Ronan Design Options.

The Ronan Community Team identified a preferred alternative as follows:

1. Improve the existing alignment through Ronan.

2. The highway through Ronan should have a lane configuration similar to the lane configuration of the highway outside town. If the overall highway has two lanes, the highway in Ronan should have two lanes, possibly with a continuous two-way left-turn center median. If the overall highway has four lanes, the highway in Ronan also should have four lanes, with a continuous two-way left-turn center median.

3. Include sidewalk, curb and gutter.

4. Include pedestrian-activated traffic signals at three locations:

   - Round Butte Road (MTS 211)

   - Eisenhower Street

   - Buchanan Street

   The current traffic signal is located at Round Butte Road. A flashing signal and pedestrian crossing currently is located at Eisenhower Street, which is in the southern part of Ronan.

5. Educate school children to cross the highway only at the signalized crossings.

6. Provide bicycle access with a signed route through Ronan.

7. Develop a process for a transportation "corridor preservation" plan for the community. The city of Ronan has been developing a comprehensive plan since late-1993, and it has indicated a corridor should be located farther west than either Alignment 3 or Alignment 4.[18]

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[16]The Arlee Community Team provided their recommendations regarding a 55 mph speed limit prior to the removal of federal mandates for speed limits. Montana has not enacted legislation to establish formal, posted daytime speed limits.

[17]After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

[18]Montana Code Annotated, 76-2-310.

8. Begin to plan for a truck route or bypass, as long as those plans are to not construct an alternative highway route at the present time.

9. Schedule construction of the highway through the Ronan area as one of the last construction projects. That will allow some time to consider the rates of growth for population and traffic volume.

Pablo Design Options. ~~Several specific design options are recommended in Pablo, as developed by the Pablo community team. These options include frontage roads, access control, raised medians, additional median width to accommodate the raised median, designated left turn bays, approach consolidation, traffic signals, lighting, concrete curb and gutter and pedestrian crossings.~~

The Pablo Community Team discussed the following options:

Option 1 - 30-Foot Wide Raised Curb Median. This was unanimously selected as the team's preferred alternative with some minor modifications discussed below.

Option 2 - 14-Foot Wide Painted Median. Adequate for vehicles but unsafe for pedestrians.

Option 3 - Pedestrian Underpasses. Undesirable - the area has ground water problems, and the roadway would have to be raised four to five feet. It will be difficult to determine the number required and the most advantageous locations. It will be difficult to get pedestrians to use them.

Option 4 - Vehicular Underpass. This option received the most negative reaction. Drainage and ground water problems will require raising the roadway about 18 feet, which will be a visual detriment with access problems.

Following are the modifications to Option 1 preferred by the Pablo Community Team:

1. Use a curb and gutter typical section rather than the rural type which had been planned. This generally tends to slow traffic and gives better expectation of signals in the area.

2. Retain the frontage road on the west side from Second Street to the approach near the Third Street location. This should be kept as near US 93 as possible.

3. Representatives of the schools suggested that the frontage road on the east, from College Street, (right of Station 1071+50) north to Clairmont Street, is not required and would not be desirable. They recommended an approach, opposite the Third Street approach, that would tie to their existing roadway network and would be the least disruptive. A minor amount of work will be required to connect the access between the college and Two Eagle River School along the present ROW line. The access road on the east side of the college that was constructed in the fall of 1992 could possibly be extended to the Two Eagle River School parking lot providing two means of access.

4. The frontage road on the east will then connect the approach opposite Division Street northerly to College Street (Station 1071+50). An approach was suggested at that location, but there is only about 550 feet between it and Division Street, which is inadequate for any left-turn bays.

5. The convenience store - gas station opposite Division Street has considerable large truck traffic, for which the above recommendations may pose difficulties for turning movements and access to and from US 93. Access for this location should be carefully studied. In addition, a 60 unit housing development is being developed in this area.

6. A landscaped median probably is not feasible for this area. Landscaping outside the clear zone between the highway and frontage roads and on the fill slopes may be possible but the responsibility for maintenance would have to be defined.

7. If the east-side frontage road is eliminated from College to Clairmont streets, a foot or bike path will be appropriate.

Polson Design Options. Several specific design options are recommended in Polson:

1. Recommend improvements to existing US 93 within two-to-five years, including but not limited to: adding turn lanes, signalization, asphalt overlay, intersection and safety improvements and pedestrian and bicycle improvements.

2. Acquire ROW adequate for a four-lane highway for Alignment 3, which will cross Flathead River south of the airport, then continue northward along an alignment west of the airport.

3. Construct a two-lane highway with truck climbing lanes as soon as possible.

4. Provide signage on Alignment 3 as a truck route and the existing route as a business and scenic route.

5. Incorporate access management and land use planning and regulation.

6. Provide for a highway connection back to Polson at Irvine Flats Road.

7. Provide adequate design of intersections of Alignment 3 with existing US 93.

8. Provide a grade separation at the intersection with Kerr Dam Road on Alignment 3.

9. Construct an additional two lanes on Alignment 3 when needed in the future.

Auxiliary Lanes. Existing public roads and highways intersecting US 93 have been evaluated to determine the need for left-turn bays. The evaluation was based on existing and projected future left-turn volumes from US 93, accident history, sight distance and other geometric considerations, growth potential, wetland impacts and other potential environmental impacts. Based on this evaluation, it is estimated that left-turn bays should be constructed at approximately 46 of the existing intersections (outside areas recommended for Lane Configuration C, as listed on Table 5.3-2). It is recognized that, as final design progresses, more detailed information will become available, and it is possible that the number of left-turn bays required may change.

Access Control. Partial, or limited, access control is recommended for the entire length of the highway except for short distances as the highway passes through the following communities: Evaro, Arlee, Ravalli, St. Ignatius, Post Creek, Ronan, Pablo and Polson. Partial access control features and benefits are described in Section ~~6.1~~7.1.3.2.

Table 5.3-2 Existing Intersections To Have Left-Turn Bays

Milepost	Intersection	
	Description	Left-Turn Bay Direction
8.60	Unnamed Road	Southbound to Eastbound
9.30	Whispering Pines Road	Northbound to Westbound
9.9	Joes Smoke Ring	Northbound to Westbound
10.10	Coriacan Road	Southbound to Eastbound
11.20	Schley Homesites	Northbound to Westbound and Southbound to Eastbound
12.05	Unnamed Road at East Finley Creek	Southbound to Eastbound
12.20	Sheep Ranch Inn	Southbound to Eastbound
13.05	McClure Road	Northbound to Westbound and Southbound to Eastbound
13.40	Doney Road	Northbound to Westbound
14.05	Mountain Home Lane	Southbound to Eastbound
15.10	South Couture Loop	Northbound to Westbound
15.20	Dirty Corner	Southbound to Eastbound
15.85	Unnamed Road	Southbound to Eastbound
15.95	Private Drive	Southbound to Eastbound
16.10	Private Drive	Southbound to Eastbound
16.20	Coombs Lane	Northbound to Westbound
16.55	Cottonwood Lane	Northbound to Westbound
16.70	Jocko Road	Southbound to Eastbound
17.20	Lumprey Road	Northbound to Westbound and Southbound to Eastbound
18.70	Saddle Mountain Road	Northbound to Westbound
18.95	Private/Commerical Drive(Bar/feed/store/campground)	Northbound to Westbound and Southbound to Eastbound
19.00	Dumontier Road	Southbound to Eastbound
19.80	White Coyote and Detwiler Roads	Northbound to Westbound and Southbound to Eastbound

Morrison-Maierle, Inc. 1994. This table has been added to the final EIS.

Table 5.3-2 Existing Intersections To Have Left-Turn Bays (Cont'd)

Milepost	Intersection	
	Description	Left-Turn Bay Direction
20.00	Montana Naturals	Southbound to Eastbound
21.25	Rentfro Road and Scott Lane	Northbound to Westbound and Southbound to Eastbound
22.75	South Valley Creek Road	Northbound to Westbound
25.00	North Valley Creek Road	Northbound to Westbound
29.15	Bison Range Viewpoint	Northbound to Westbound and Southbound to Eastbound
30.40	Old Freight Road	Northbound to Westbound
30.55	Pistol Creek Road	Southbound to Eastbound
31.20	Old U.S. 93	Southbound to Eastbound
31.60	Blood Ranch Lane	Northbound to Westbound
32.30	Sabine Road and Road to Mission Church	Northbound to Westbound and Southbound to Eastbound
32.70	Commercial Drive and Mountain View Road	Northbound to Westbound and Southbound to Eastbound
33.10	Lower Crossing Road and Airport Road	Northbound to Westbound and Southbound to Eastbound
35.10	Pinsoneault and Lemery Roads	Northbound to Westbound and Southbound to Eastbound
36.10	Hawkins and Ashley Lake Roads	Northbound to Westbound and Southbound to Eastbound
37.10	Dublin Gulch and Red Horn Roads	Northbound to Westbound and Southbound to Eastbound
38.10	Post Creek Road (East and West)	Northbound to Westbound and Southbound to Eastbound
39.10	Leon and McDonald Lake Roads	Northbound to Westbound and Southbound to Eastbound
40.10	Olsen and Gunlock Roads	Northbound to Westbound and Southbound to Eastbound
40.95	Private Drive (Allentown)	Southbound to Eastbound

Morrison-Maierle, Inc. 1994. This table has been added to the final EIS.

Table 5.3-2 Existing Intersections To Have Left-Turn Bays (Cont'd)

Milepost	Intersection	
	Description	Left-Turn Bay Direction
41.10	Recreation Site Road and Eagle Pass Trail	Northbound to Westbound and Southbound to Eastbound
42.10	Highway 212 and Kicking Horse Road	Northbound to Westbound and Southbound to Eastbound
42.35	Commercial and Private Drives (Countryside Cafe)	Northbound to Westbound and Southbound to Eastbound
43.10	Duck Road	Northbound to Westbound
43.60	Mollman Pass Trail	Southbound to Eastbound
44.10	Beaverhead Lane and Private Drive/Rest Area	Northbound to Westbound and Southbound to Eastbound
45.10	Private Drive (Industrial)	Southbound to Eastbound
45.35	Bouchard Road	Northbound to Westbound
45.50 to 45.70	Unnamed Roads and Drives	Southbound to Eastbound
48.30	Baptiste and Spring Creek Roads	Northbound to Westbound and Southbound to Eastbound
50.10	Mud Creek Lane	Northbound to Westbound and Southbound to Eastbound
50.90	Old U.S. 93	Northbound to Westbound and Southbound to Eastbound
54.10	Skylark Lane	Northbound to Westbound
54.50	Grover Road and Mud Lake Trail	Northbound to Westbound and Southbound and Eastbound
55.00	Lake County Gravel Pit Road and Commercial Drive	Northbound to Westbound and Southbound to Eastbound
55.50	North Reservoir Road and Minesinger Trail	Northbound to Westbound and Southbound to Eastbound
56.50	Caffrey and Ford Roads	Northbound to Westbound and Southbound to Eastbound

Morrison-Maierle, Inc. 1994. This table has been added to the final EIS.

Traffic Signals. Traffic signals will be considered when counts and studies indicate they are warranted by traffic and pedestrian volumes and characteristics, including the following locations:

- Arlee - "B" Street (Butch Larsen/Taelman) (existing flashing yellow light)
- Ronan - Round Butte Road (existing signal)
- Pablo - Division Street
- Polson - MT 35 (Installed in 1995)
- Polson - First Street East (existing signal)
- Polson - Main Street
- Polson - Bayshore Drive/Golf Course Entrance

It is anticipated that, during future stages of project development, warrants for additional signals may be determined. These intersections include:

- Pablo - Clairmont / Pablo West Road
- Ronan - Eisenhower Street (existing flashing yellow light)
- Ronan - Buchanan Street
- Polson - 4th Avenue East (Super 1 Foods)
- Polson - 8th Street East
- Polson - Alignment 3 (Caffrey Road)
- Polson - Alignment 3 (End of Proposed Action)

Some other important intersections may warrant the installation of traffic signals in the future. As highway improvement occurs, intersections where signalization appears likely to be required should be designed and constructed to allow the installation of the signals when traffic volume and characteristics indicate they are warranted.

Pedestrian Facilities. The following pedestrian facilities are recommended at this time:

- When signals are installed at the signal locations listed above, include push-button actuated pedestrian signals. Also install crosswalks.
- In Arlee, Ronan and Polson, construct five-foot concrete sidewalks on both sides of the highway adjacent to the back of the concrete curb and gutter at the shoulder of the roadway.
- In all other areas, construct eight-foot paved shoulders.
- Shoulders will be widened where appropriate to allow school buses to pull out of traffic lanes to load and unload students.

Other recommended pedestrian facilities may be identified with the final design and additional information from community teams.

Bicycle Facilities. The following bicycle facilities are recommended at this time:

- In ~~all~~rural areas ~~except Arlee~~, construct eight-foot paved shoulders with a three-foot "rumble strip" to provide adequate width for bicycle travel and effectively separate it from highway traffic.

- Through the Arlee, Ronan and Polson areas, if roadway shoulders narrower than six feet are constructed, develop designated bicycle routes through the community and away from the highway on existing streets with appropriate signing, pavement marking and other safety features.

- Perpetuate the existing bicycle/pedestrian path between the town of Arlee and the tribal housing complex at the north end of town.

Other recommended bicycle facilities likely will be identified with the final design and additional information from community teams.

Four-Foot Painted Center Median. Use of this painted median is not recommended. ~~in all areas where Lane Configuration B (a four-lane highway with no continuous two-way left-turn center median) is constructed. This will~~It is not wide enough to effectively help separate opposing traffic lanes, help reduce opposing headlight glare and ~~may~~ help reduce head-on collisions. Its use does not justify the substantial construction cost and the adverse additional environmental impacts that would occur.

Wildlife Crossings.

The following recommendations are made for the Evaro wildlife crossings:

- Construct Lane Configuration D from Mileposts 10.2 to 10.6,

- Construct a wildlife overpass at Milepost 10.3. The overpass will include two arch structures, one over the two northbound lanes and one over the two southbound lanes. The structures will support a minimum of four feet of topsoil on which vegetation will be established to provide cover for wildlife. The structure will create a tunnel for highway traffic approximately 165 feet long.[19]

- ~~Construct two wildlife underpasses — one at Milepost 10.3, which will include a three-span structure with a 60-foot center span, and one at Milepost 10.5, which will include a structure with a single 60-foot span and vertical abutments — taking advantage of the 40-foot Lane Configuration D divided, unpaved center median to provide an opening in the structures to avoid any "tunnel effect" in lighting.~~

- Implement other mitigation measures recommended in the "Evaro Corridor Wildlife Use Study" completed by CSKT including:

  Fencing the highway ROW with 10-foot high fences located 150 feet from the outer edge of the borrow pit on both sides of the highway to facilitate wildlife movement toward the overpass;

[19]Morrison-Maierle Environmental Corporation, Biological Assessment, F 5-1(9)6, U.S. Highway 93, Evaro through Polson, 11 October 1996.

Establishing vegetation outside fences to provide security for animals approaching the overpass. Planting of trees and shrubs to screen animals from traffic would be proposed if natural vegetation has been removed or is sparse;

Constructing one-way gates in the fences on both sides of the highway to facilitate escape of animals trapped inside the fences;

Managing vegetation between the fences and the highway to provide escape and security cover for animals that become trapped inside the fences.

Constructing game trails, if necessary, to direct animals toward the overpass;

Closing and revegetating dead-end roads leading off the highway in the immediate vicinity of the overpass; and

Supporting the joint effort of the Confederated Salish and Kootenai Tribes and Missoula County to develop land use planning and regulation for the Evaro area.

~~Drift and exclusion fencing and one-way gates,~~

~~Signing at either end of the corridor,~~

~~Closure of dead-end roads, and rerouting through roads from other accesses,~~

~~Vegetation management inside and outside the fencing,~~

~~Joint effort by tribal and local governments for effective land use planning and regulation.~~

Other recommended wildlife crossing measures include an expanded bridge structure at Post Creek to allow larger animals to follow the stream across the highway and, if workable and practical designs can be developed, crossings for turtles in the Ninepipe refuge area.

Concrete Curb and Gutter

In the communities of Arlee, Ravalli, Ronan, Pablo and Polson, concrete curb and gutter is recommended at the edge of the roadway to coordinate with the more urban settings, to help control entrances to the highway, to control drainage and to reduce the amount of ROW required for construction.

5.4. THE CSKT PREFERRED ALTERNATIVE

Section 5.4 presents the CSKT Preferred Alternative. The Tribal Council of the Confederated Salish and Kootenai Tribes submitted its preferred alternative with a cover letter dated 29 February 1996.

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THE CONFEDERATED SALISH AND KOOTENAI TRIBES
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February 29, 1996

Mr. Joel Marshik
Manager, Environmental Services
Montana Department of Transportation
2701 Prospect Avenue
Box 201001
Helena, Montana 59620-1001

RE: U.S. HIGHWAY 93 EVARO TO POLSON PROJECT, TRIBES' PREFERRED ALTERNATIVE

Dear Mr. Marshik:

Please accept the materials accompanying this letter as a statement of the Confederated Salish and Kootenai Tribes ("Tribes") preferred alternative for the U.S. Highway 93 Evaro to Polson Project ("Project"). This statement is submitted with the intent that the selected alternative will be included within the Final Environmental Impact Statement for the Project and identified as a preferred alternative.

The Federal Highway Administration ("FHWA") is the lead agency with oversight responsibility for assuring that this Project complies with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 - 4370b. FHWA has prescribed policies and procedures for implementing NEPA at 23 CFR 771, as amended, and is also subject to the regulations of the Council on Environmental Quality ("CEQ") at 40 CFR 1500 - 1508. As lead agency in this process, FHWA retains ultimate responsibility for preparing the Environmental Impact Statement ("EIS"), assuring its adequacy and identifying the preferred alternative(s).

The Montana Department of Transportation (MDT) operates as agent for the FHWA for compliance with these laws. FHWA has assigned MDT with the responsibility for preparing the EIS for the Project. As the document preparer, MDT is obligated to "identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement . . . " 40 CFR 1502.14(e) (1995). The CEQ requires that the EIS "must be objectively prepared and not slanted to support the choice of the agency's preferred alternative over the other reasonable and feasible alternatives." 46 Fed. Reg. 18026 (Mar. 23, 1981) (NEPA's Forty Most Asked Questions, Question 4c).

The Tribes operate as a cooperating agency in this NEPA process. The Tribes' cooperating agency status is due to their unique interest in the Flathead Indian Reservation as the Tribal homeland and the Tribes' special expertise in all issues affecting the Reservation. The Tribes, consistent with CEQ guidance, want this document incorporated into the Final EIS as a preferred alternative:

> A lead agency, of course, has the ultimate responsibility for the content of an EIS. But it is supposed to use the environmental analysis and recommendations of cooperating agencies with jurisdiction by law or special expertise to the maximum extent possible, consistent with its own responsibilities as lead agency. [citations omitted].
>
> If the lead agency leaves out a significant issue or ignores the advice and expertise of the cooperating agency, the EIS may be found later to be inadequate. Similarly, where cooperating agencies have their own decisions to make and they intend to adopt the environmental impact statement and base their decisions on it, one document should include all of the information necessary for the decisions by the cooperating agencies. . . .
>
> Because the EIS is not the Record of Decision, but instead constitutes the information and analysis on which to base a decision, disagreements about conclusions to be drawn from the EIS need not inhibit agencies from issuing a joint document, or adopting another agency's EIS, if the analysis is adequate. Thus, if each agency has its own "preferred alternative," both can be identified in the EIS. 46 Fed. Reg. 18026 (Mar. 23, 1981) (NEPA's Forty Most Asked Questions, Question 14b).

It is the Council's intent that this statement of preferred alternative to be the final definitive statement by the Tribes on this matter for the purposes of the present NEPA process. The Tribes will review the Draft Final EIS with regard to this statement and comment as necessary. The Tribes encourage MDT to go forward with preparing the Draft Final EIS. However, because the Tribes are a cooperating agency with a preferred alternative which conflicts with the preparer's preferred alternative, the Tribes request that FHWA involve the Tribes directly with drafting the record of decision for this NEPA document. Please direct any questions that you might have regarding this Tribal statement of preferred alternative or the NEPA process to Joe Hovenkotter, Attorney, Tribal Legal Department at (406)675-2700 ext. 460.

Sincerely,

Rhonda Swaney
Chairwoman - Tribal Council

CC: Dale Paulsen, FHWA
John Glueckert, Mayor, City of Polson
Brad Peterson, Morrison-Mairle
Jeanette LoStracco, Carter-Burgess

CONFEDERATED SALISH AND KOOTENAI TRIBES
STATEMENT OF PREFERRED ALTERNATIVE

HIGHWAY 93 - EVARO TO POLSON PROJECT

(1) Alignments of the Preferred Alternative

Alignment 1 has been selected as the alignment alternative that is preferred throughout the area. Alignment 1 follows the existing highway alignment with only minor adjustments to improve the horizontal and vertical alignment of the roadway and to avoid, as much as practical, important topographic features, residences or other buildings and environmental features such as wetlands, streams and riparian areas.

(2) Lane Configurations of the Preferred Alternative

Lane Configuration A, the modified two-lane alternative, is recommended for all 56.3 miles of the proposed action, including all segments of the highway located within Reservation communities.

(3) Transportation Demand Management (TDM)

TDM alternatives include the construction of park and ride lots, State subsidy of locally administered vanpools, and completion of a feasibility study of light rail commuter transit between Reservation communities.

Park and ride lots should be constructed at strategic sites in Arlee, St. Ignatius, Ronan, Pablo, and Polson. Each park and ride lot should abut the highway and include sufficient lighting to provide a baseline level of safety, a shelter to protect waiting riders from the wind and rain. Each park and ride lot should be connected with a pedestrian/bike path(s) leading to town centers and high density residential areas. Park and ride lots will be maintained by MDT as a component of the highway facility.

The State of Montana should provide sufficient resources, either in the form of cash subsidy or vehicles, to support regional vanpooling. The vanpools would be administered by local and Tribal government. The target group of highway users for the vanpool is daily commuters travelling to/from Reservation communities.

MDT should conduct a study of the feasibility of constructing light rail facilities and/or utilizing existing railroad tracks for light rail for transit of commuters between Reservation communities.

(4) Alternate Routes

MDT should encourage use of other north-south routes through Western Montana including

Highways 28, 83, 135, 141, 200, and 382. Signs at major highway junctions north and south of the Highway 93 Corridor through the Flathead Reservation recommending alternative routing should be installed at Garrison, Bonner, Ravalli, Perma, Plains, Kalispell, Elmo and Bigfork.

MDT should include a warning for travellers on all roadmaps MDT produces, in whole or in part, that show any or all segments of the road included in this Project. The warning should state that within the Flathead Indian Reservation U.S. Highway 93 is a heavily travelled two-lane roadway. The warning should encourage through travellers to select an alternate north-south travel route through Western Montana. The warning should be situated on the map so it will be readily apparent to persons studying portion of the map which includes the U.S. Highway 93 corridor.

(5) Design Options of the Preferred Alternative

Design options for the proposed action are described in Section 5.1.6 of the Draft EIS. Recommendations for the application of some of the more prominent and more readily identifiable design options are described in the following paragraphs:

Arlee Design Options. This design option includes the segment of highway located within the Arlee community between PowWow Road and "A" Street. Lane configuration A is recommended with a raised landscaped 20 - 30 foot-wide median. Left turn bays and crosswalks, for both northbound and southbound lanes, should be constructed at the "A", "B", "C" and "D" Street intersections and the PowWow Road/Couture Loop intersection. A pedestrian operated crossing signal should be installed at the "B" Street intersection. Sufficient signage to warn highway traffic of these new design options should be integrated into the design.

Preservation of a corridor of land for future construction of the highway around Arlee is not recommended.

Ronan Design Options. This design option includes the segment of highway located within the city limits of the incorporated municipality of Ronan. Lane configuration A is recommended with a raised landscaped 20 - 30 foot-wide median. Left turn bays for northbound lanes, should be constructed at the intersections with Round Butte Road (Highway 211), Main Street, Adams Street, Eisenhower Street and Dayton Street. Left turn bays, for southbound lanes, should be constructed at the intersections with Terrace Lake Road, Adams Street, Cleveland Street, Eisenhower Street and Garfield Street. The existing stop signal at the intersection with Round Butte Road (Highway 211) should be maintained. Crosswalks and pedestrian operated crossing signals should be installed at the intersections with Round Butte Road (Highway 211) and Eisenhower Street. Sufficient signage to warn highway traffic of these new design options should be integrated into the design.

Preservation of a corridor of land for future construction of the highway around Ronan is recommended west of Ronan.

Pablo Design Options. This design option includes the 2.3 mile segment of highway located within the Pablo community between Division Street and the S & K Housing Office

(mileposts 51.9 - 54.2). The Pablo Design Option includes the following components:

- Lane configuration A with a raised landscaped 20 - 30 foot-wide median.
- Stop signals (which include pedestrian operated crossing signals) and crosswalks at the Division Street and Claremont/Pablo West Roads intersections.
- Left turn bays for northbound lanes at Division Street, the point where Pablo's Third Street will intersect when extended, Pablo West Road and Light Road.
- Right turn bays for northbound lanes at Division Street, Claremont Road and Courville Trail.
- Left turn bays for southbound lanes at Courville Trail, Claremont Road and Division Street.
- Right turn bays for southbound lanes at Light Road, Pablo West Road, the point where Pablo's Third Street will intersect when extended and Division Street.
- The Division Street intersection will either (a) remain as placed and MDT will acquire right-of-way through Joe's Jiffy Stop to access a reverse frontage road serving the Salish and Kootenai College; (b) be realigned to approximately 100 meters south of its existing location ; or (c) be realigned to approximately 50 meters north of its existing location to access both a reverse frontage road serving the Salish and Kootenai College on the east and a short connecting road to Division Street on the west.
- Two-way frontage roads will be built (a) on the east side of the Highway between Claremont Road and Courville Trail; (b) on the west side of the Highway between Old Highway 93 and the S & K Housing Office; and (c) if necessary on the west side of the Highway between Pablo West Road and the access to the Pablo Branch of Ronan State Bank.
- All private approaches accessing the Highway will be closed.
- A pedestrian/bicycle path will be constructed on the east side of the highway between Division Street and Courville Trail. A pedestrian/bicycle path will be integrated into the design of the frontage road west of the highway between Light Road and S & K Housing.
- Sufficient signage to warn highway traffic of these new design options and to provide clear direction to all travellers attempting to access government and tourist facilities.
- Install sufficient lighting at intersections and areas of pedestrian activity so that approaching vehicles and pedestrians will be visible to highway traffic at all times.

Polson Design Options. This design option includes the segment of highway located within the incorporated municipality of Polson. Lane configuration A is selected because it minimizes impacts to business parking, existing buildings, Ducharme Park and Flathead Lake shorefront. The Council concurs with the Transportation System Management improvements recommended for Polson by the ID team in the Draft EIS at pages 5-40 through 5-43.

Preservation of a corridor of land for future construction of the highway around Polson is not recommended.

Auxiliary Lanes. Access related auxiliary lanes should be constructed in accordance with design standards and specifications included within the Memorandum of Agreement for Access

Management Planning (see discussion on Access Control for additional details).

Auxiliary lanes in the form of climbing/passing lanes for traffic travelling up grades should be located as follows:

- Schley Grade southbound, for a distance of 2 miles between the Sheep Ranch Inn (milepost 12.1) and Mountain Home Lane (milepost 14.1);
- Ravalli Hill northbound, for a distance of 1.8 miles between the Highway 200 junction in Ravalli (milepost 27.7) and a point located approximately ¼ mile north of the Ravalli Hill Summit (milepost 29.5);
- Bison Range Grade southbound, for a distance of approximately 1.7 miles between a point located approximately ¼ south of the Old Highway 93 junction (milepost 31.2) to a point located approximately ½ mile north of the Ravalli Hill Summit (milepost 29.5) (the start point should be located so that the safest design can be achieved for the Old Highway 93 junction);
- Post Creek Hill northbound for a distance of 1.8 miles between a point located approximately ¼ mile north of the Post Creek Road intersection (milepost 38.4) and a point located approximately ¼ mile north of the Gunlock/Olsen Roads intersection (milepost 40.2);
- Polson Hill southbound for a distance of 1.8 miles between a point located approximately ¼ mile south of the Caffrey/Ford Roads intersection (milepost 56.3) and the point where the existing climbing lane presently begins (milepost 58.2).

Exact locations for the climbing lane transition points may vary slightly to include safety factors such as proximity of intersections, stopping distance, access management standards and sight distance requirements. Climbing lane transition points should be well signed. The short segment between the ends of Ravalli Hill northbound and Bison Range Grade southbound climbing lanes should be of sufficient distance so that there will not be opposing traffic completing transition movements in both directions at the same location.

Access Control. MDT and the Tribes will continue working cooperatively to establish a Memorandum of Agreement for Access Management Planning for inclusion within the Final EIS. The MOA will identify procedures, design standards and specifications which will facilitate the maximum level of access control possible under State, Tribal and Federal law for this preferred alternative. The Tribes see this as a critical unresolved issue due to approximately ⅓ of all accidents on the Highway 93 corridor being access related and correspondingly, the crucial factor for attenuating this situation will be access control regardless of lane configuration.

Traffic Signals. Present conditions warrant maintenance or installation of signals at the following locations:

- Arlee - "B" Street (existing signal).
- Ronan - Round Butte Road (Highway 211) (existing signal).

- Eisenhower Street (flashing yellow).
- ♦ Pablo - Division Street (stop signal).
- Pablo West Road/Claremont Road (stop signal).
- ♦ Polson - Highway 35 (existing signal).
- Fourth Avenue East/Super One Foods (stop signal).
- First Street East (existing signal).
- Main Street (stop signal).

Other intersections may warrant the installation of traffic signals in the future. As highway improvement occurs, intersections where signalization appears likely to be required should be designed and constructed to allow the installation of the signals when warranted by traffic and pedestrian volume and characteristics. Particular intersections for consideration include but are not limited to Buchanan Street in Ronan and Bayshore Drive/Golf Course in Polson.

Pedestrian Facilities / Bicycle Facilities The Council concurs with the preferred alternative as described in the Draft EIS at page 5-42 with following exceptions and additions:

(a) Where the Draft EIS calls for the construction of eight-foot paved shoulders, the Tribes recommend the construction of ten-foot paved shoulders. The ten-foot shoulder should be constructed with a three-foot rumble strip at the inside edge to separate traffic from pedestrian and bicyclists travelling on the remaining seven-foot smooth outer shoulder.

(b) In areas where sidewalks are to be constructed, the sidewalks should be constructed on both sides of the highway where reasonably possible. Sidewalks located in areas where ten-foot shoulders are not constructed should be separated from the curb by a minimum distance of between two to eight feet to enhance pedestrian safety and security.

(c) As noted in Section (3) of this statement, pedestrian/bike paths leading to town centers and high density residential areas should be constructed so that they connect with park and ride lots. Pedestrian/bike paths should also be constructed alongside the highway in areas with a high probability of use.

Four-Foot Painted Center Median The Council does not object to the ID Team's rejection of the four-foot painted median. However, the center median should consist of more than simple striping. Raised or inset reflective markers that clearly delineate the center line in all weather and roadway conditions should be installed in addition to conventional striping.

Concrete Curb and Gutter. The Council concurs with the preferred alternative as described in the Draft EIS at page 5-43.

Bus Turnouts. Bus turnouts should be built where there are known concentrations of users.

(6) Wetlands Mitigation

The following wetlands protection guidelines are recommended for all wetlands that are located within the project area:

(a) Follow the sequencing requirements per the Memorandum of Agreement for Mitigation of Unavoidable Impacts to Wetlands by Highway Construction entered into by the Tribes and MDT on June 1, 1993. Those sequencing requirements in order of priority are:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
5. Compensating for the impact by replacing or providing substitute resources or environments.

(b) Establish a wetlands mitigation bank.

The purposes of the wetlands mitigation bank are avoiding and minimizing the loss of wetlands and riparian areas within the Flathead Indian Reservation due to direct and indirect highway construction impacts, and obtaining full and effective mitigation for unavoidable losses of wetlands and riparian areas and their functions and values.

The banking instrument should be signed by the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, MDT and the Tribes.

The Tribes should serve as bank manager, will hold title to all bank lands in perpetuity, and will maintain and operate bank properties. The U.S. Army Corps of Engineers should serve as bank auditor. MDT should serve as purchaser of bank lands and engineer for design of mitigation site plans. All signatory parties should serve on the Flathead Reservation Interagency Wetlands Group for purposes of providing recommendations, review and oversight for all scientific and technical activities of the wetlands mitigation bank.

The wetlands mitigation bank rules should be developed in accordance with federal law and regulatory guidance from the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers.

The wetlands mitigation banking prospectus, instrument and conceptual plan should be included within the Final EIS.

(c) Maintain wetland hydrology by incorporating highway design features that protect and maintain the natural hydrologic regime particularly for those wetlands located downslope (generally west) of the highway that receive water from sources upslope (generally east)

of the highway.

(d) Minimize fill by incorporating highway design features such as minimum toe slopes in wetlands areas.

(e) Revegetate exposed areas with native wetland/riparian species to reduce erosion, minimize sedimentation, provide habitat and reduce invasion by noxious weeds. Implement additional stabilization/control measures at perennial stream crossings where needed.

(f) Minimize the horizontal extent of maintenance activities which are damaging to wetlands such as brush removal, mowing, and use of herbicides.

(7) **Site Specific Wetlands Mitigation**

(a) Ninepipe / Kicking Horse / Duck Haven Wetlands Complex

(i) Pingo Berms: Protection of pingo berms is critical to the maintenance of pond hydrology. Pingo berms broken during construction should be restored to their original contours. Cross-highway drainage should be eliminated by construction of an artificial berm between the open water area and the roadbed where a portion of the pingo is within the highway right-of-way. Several pingo berms were breached during construction of the existing highway. This past damage should be repaired during construction of the present project by restoring the original contours of the berms.

(ii) Ponds H36, H37 and I3: Pothole ponds H36 - H37 (identified as two potholes by MDT) and I3 (identified as one pothole by MDT) were bisected during construction of the existing highway. The current project provides an opportunity to restore original hydrologic characteristics and animal travel routes to these bisected potholes. The filled roadbed should be replaced with a causeway or other structure that spans the ponds and allows normal circulation of water, passage of a high level of ambient sunlight and provides a minimum 45 foot-width of riparian bank for turtle, brooding waterfowl and other terrestrial animal passage.

(iii) Fill slopes: To minimize area of wetlands impacted, highway design in this area should incorporate guardrails with 1:6 slope walls and no median.

(b) Riparian Wetlands Associated with Perennial Streams (Finley Creek, East Fork Finley Creek, Schley Creek, Jocko River, Jocko Springs, Mission Creek, Sabine Creek, Post Creek, Crow Creek, Ronan Springs Creek, Mud Creek, and unnamed streams A3, A5, A10, H9 and H11).

Wetlands mitigation needs are incorporated into stream crossing designs developed by Tribal fish and wildlife biologists and discussed herein in section 8, Fish Passage, below.

(c) Riparian Wetlands Associated with Ephemeral Streams (Matt Creek, unnamed streams A9 and I14.

Install culverts to maintain cross-highway flow of streams and riparian wetlands located on the west side of the highway.

(d) Riparian Wetlands Associated with Ephemeral Drainages A12, A13, A14, A18, C11, C12, C13, C14, F1, F3, F4, F5, H2, H3, H4, H5, H6, H7, H13, H21 and K3.

Install culverts to maintain cross-highway flow of streams and riparian wetlands located on the west side of the highway. Remove existing blockages to ephemeral drainages.

(e) Wetlands Associated with Ponds or Depressions Outside of the Ninepipe/Kicking Horse/duck Haven Complex Area (Avocet Pond and unnamed ponds/depressions D5, H14, I17, K1, and K2).

Maintain individual pond/depression hydrology by restoring any berms broken during construction. Restore to original contours when possible. Eliminate cross-highway pond drainage by constructing barriers between adjacent ponds and between pond and highway right-of-way.

(f) Wetlands Located in Borrow Pits

These small and biologically simple wetlands provide the important function of trapping and filtering chemicals and sediment transported by highway runoff. Many of these wetlands will eventually reestablish naturally along any newly constructed highway segments. However, wetlands should be reconstructed where borrow pits discharge into Reservation surface waters so that the trapping and filtering function which protects water quality will be restored as soon as possible.

(8) Stream Crossings / Fish Passage / Wildlife Crossings

In general, extension and maintenance of existing culverts and bridges identified in Table 6.11-1 of the Draft EIS will continue to facilitate adequate fish passage. Exceptions are:

(a) Evaro Corridor (milepost 10.2 - 10.6): A two-lane tunnel/underpass should be constructed for traffic. This configuration would underlay an overhead wildlife crossing structure. General components are described in the following list and further construction details of this design option are documented in Appendix 1 to this document.

- Construction of the overpass structure spanning the highway with a width of not less than 50 meters.
- Contouring and vegetating the surface of the wildlife crossing structure and areas adjacent to the structure to enhance the likelihood of selection as an animal migration route across the highway corridor.
- Construction of ten foot high drift fences leading east and west from the wildlife crossing structure on both sides of the highway right-of-way.
- Construction of one-way gates in the drift fences to facilitate movement of animals out of the highway corridor.
- Management of the vegetation between the drift fences and the highway to provide hiding and escape cover for animals that enter the right-of-way.
- Alteration of existing wildlife trails to facilitate animal crossing.
- Installation of animal crossing warning signs along the highway between Evaro (milepost 7.2) and Dirty Corner (milepost 15).
- Closure and revegetation of all access approaches within 500 meters of either end of the wildlife crossing structure.

(b) East Fork, Finley Creek (milepost 12.2): Presently this site is a perched culvert and does not afford upstream fish passage. Because of native species preservation concerns above this site, this culvert should remain perched to provide a barrier to upstream fish passage by nonnative species.

(c) Agency Creek (milepost 15.7): A larger pipe/culvert should be installed to adequately accommodate flood flows. Agency Creek eventually flows into Finley Creek. It is not desirable to provide fish passage from Finley Creek to Agency Creek because of native species preservation concerns in Agency Creek. Therefore, the new pipe/culvert should be designed to prevent upstream fish passage by nonnative species.

(d) Jocko River (milepost 19.0): The existing bridge should be reconstructed at its existing location to minimize potential impact to fish resulting from new construction of a different alignment. Reconstruction should incorporate qualities so that the roadway is wide enough to include ten-foot shoulders and so that the structure would not impede the flows of a one-hundred year flood.

(e) Jocko Spring Creek (milepost 23.3): The creek was rerouted from its natural channel to flow through the existing S-shaped 90° bend / culvert / 90° bend / channel / 90° bend / culvert / 90° bend configuration that winds across both the highway and railroad rights-of-way. This current condition should be improved by providing a direct crossing of the highway and the railroad approximately 100 meters south of the present highway culvert so that the creek will be restored to its natural channel west of the railroad. As with all stream crossings, it will be important to adequately protect newly constructed stream channels from erosion and provide adequate separation between the highway and the stream and to revegetate disturbed areas.

(f) Ravalli Canyon (mileposts 24.7 - 29.5): Ravalli Canyon is an important crossing site for big game and other species. The topography, width of the canyon, and the existence of the highway, river and railroad preclude crossing structures. In the alternative, wildlife crossing signs should be posted throughout Ravalli Canyon and on Ravalli Hill.

(g) Mission Creek (milepost 32.4): The current structure should be replaced with a bridge of sufficient height and length to allow human foot travel alongside the stream bank under the highway. However, Mission Creek is utilized as a travel corridor by deer, black bear and mountain lion. If possible, to diminish the risk of human/animal conflict in the town of St. Ignatius, the design of the bridge should not encourage use of the underpass by deer, black bear and mountain lion.

(g) Post Creek (milepost 37.8): Post Creek is utilized as a travel corridor by deer, bear, and other species. Use of this travel corridor by animals is to be encouraged. A new bridge should be constructed of sufficient height and length at this stream crossing to provide an average underpass clearance of not less than nine vertical feet a minimum horizontal clearance of not less than 45 feet to either side of the stream.

(h) Ninepipe / Kicking Horse / Duck Haven Wetlands Complex (mileposts 39.5 - 44.5): To reduce roadkill of painted turtles, passage structures should be constructed at locations with high roadkill mortality. Passage designs known to be used by turtles should be utilized. Additional design consideration and study of turtle passage structures is needed prior to installation of turtle passage structures. A cooperative study of turtle passage design, similar to the painted turtle population dynamics study would be beneficial. A pilot project at the Scenic Turnout (milepost 44) should be conducted involving the installation of alternative designs for turtle passage structures to evaluate effectiveness of each design prior to selection for final construction design.

(i) Ronan Spring Creek (milepost 47.0): The size and surface clearance in the present structure is inadequate to accommodate flood flows and creates a drowning hazard for humans and other creatures travelling in or alongside the creek. A new culvert system should be installed which will adequately accommodate flood flows and will provide safe passage for humans and other creatures travelling in or alongside the creek.

In addition to these exceptions, at each location where roadside borrow pits/ditches drain into streams, MDT should design and construct catchment basins which are suitable for intercepting hazardous materials which may be spilled by transporters using the highway. Such catchment basins should be suitable for the placement of booms and other spill response equipment.

(9) Cultural Resources

All project activities shall be done in compliance with the Tribes Cultural Resource Protection Ordinance, 95. The Tribal Cultural Preservation Office is the Tribal agency with authority for

corresponding with MDT with regard to protecting cultural resources threatened by highway construction projects on the Flathead Reservation. The Tribal point of contact is the Preservation Officer. Construction projects which might affect any cultural resource, including but not limited to, religious sites, archeological resources, burial sites, human skeletal remains, traditional cultural properties, historic resources, cultural items, and/or food and medicinal plants located on protected lands shall apply to the Tribal Cultural Preservation Board for a permit.

MDT shall consult with the Preservation Officer at the earliest phases of any construction project. The Preservation Officer will assist MDT with the permit process as required, and will coordinate a consultation process between design engineers and the Cultural Resource Protectors or other representatives from the Flathead and Kootenai Culture Committees. Coordination with these representatives will occur no later than the initiation of preconstruction design and continue through the construction phase. Coordination will include a preliminary field visit during which the design engineering team will identify design options (general routing, lane widths, etc.) to representatives of the culture committees. The culture committees will present their findings from this preliminary field visit to Tribal elders. A second field visit will be held, during which representatives of the culture committees will provide information and feedback from the elders to the design team. This process of consultation will continue through the construction period and may require additional field visits. The Preservation Officer will monitor the project area during the construction phase to assure compliance with all permit terms and conditions and will coordinate with the construction officer and the culture committees to assure adequate on-site review and consultation.

Mitigation of the impacts to traditional values of the Salish and Kootenai people shall be addressed with three types of action:

(a) Using Salish, Kootenai and English languages for highway signs including but not limited to:

(i) Major highway signs which denote the boundary crossing for traffic entering and leaving the Flathead Indian Reservation with the content of the sign message to be determined cooperatively by MDT and the Tribes;

(ii) Community signs located on the highway right-of-way for Arlee, Ravalli, St. Ignatius, Ronan, Pablo, and Polson; and

(iii) Official directional signs located on the highway right-of-way identifying Tribal governmental and tourist facilities.

(b) Establishment of two visitor information centers to be located and designed cooperatively by the Tribes and MDT. MDT shall provide funding sufficient for hiring necessary independent architectural contractors, to be selected by the Tribes, for assistance with this mitigation activity.

(c) MDT shall provide sufficient ongoing funding to support a program to be administered by the Tribes, for the life of the project for:

(i) training Kootenai and Salish language teachers so that a sufficient number of such teachers with credentials sufficient to satisfy certification requirements of the Montana Department of Public Instruction are available to teach Salish and Kootenai language classes in all Reservation schools; and

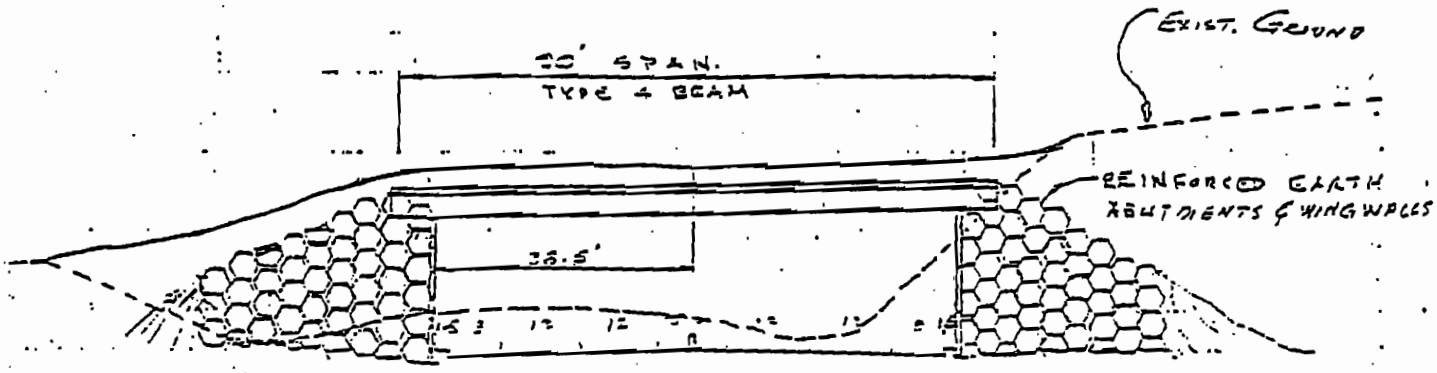
(ii) conducting Kootenai and Salish language immersion camps so that school age Tribal-member children have the opportunity to participate in such a camp for a period of not less than two weeks each year.

APPENDIX #1

EVARO WILDLIFE CROSSING STRUCTURE

[illegible]	DATE 1-18-93	PROJ. NO.	
CHK:	DATE	PAGE 6	OF

WILDLIFE OVERPASS



STRUCTURE:	
EARTHWORK: 15,000 C.Y. @ $3	$45,000
SPEC BACKFILL 7,500 C.Y. @ $5	37,500
RE-EARTH ABUTMENTS 25 x 340 = 8,500 ² x 2 x $25	425,000
5 TYPE 4 BEAMS @ 90' = 50 x 90 x $150	675,000
DECK 8" x 90' x 300' ÷ 27 = 670 C.Y. @ $350	233,500
LIGHTING:	150,000
VENTILATION.	200,000
SHIFT FENCE - 4000' @ $10	40,000
LAND SCAPING; SEED & PLANT. - $500; 200 SHRUBS & SMALL TREES @ 50	10,500
SUBTOTAL	1,906,500
GLADED ROADWORK.	
EXCAVATION. 12,000 C.Y. @ $3	36,000
SURFACING 20 STA @ $2250	45,000
DRAINAGE	20,000
TRAFFIC CONTROL -	150,000
MEDIAN WIDENING - 1000' (DIRT = 5m SURF = 7.5m) = 12,500	12,500
MED BARRIER 700' @ $25 = 17,500	17,500
	281,000
TOTAL	2,187,500
10% CONT.	218,800
15% CONST. ENG.	361,000
TOTAL	2,767,300

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6. AFFECTED ENVIRONMENT

Flathead Indian Reservation

The Flathead Indian Reservation is a rural area, bordered on the south by Missoula County and the city of Missoula, which form Montana's second largest urban trade center. The reservation is bordered on the north by Flathead County, the fourth largest county in Montana.[1]

Except for a one-half mile segment at the southern end in Evaro, the proposed action is contained within the Flathead Indian Reservation. The proposed action is located in the eastern part of the reservation, and it spans approximately three-quarters of the north-south distance of the reservation. Figure 5.1-6 shows the location and external boundaries of the Flathead Indian Reservation.

The Flathead Indian Reservation is home to two major Salish-speaking tribes, the Salish and the Pend d'Oreilles, and one band of the Kootenai Tribe. Tribal elders say the tribes originate from an ancestral Salish-speaking tribe, which divided into a number of different bands. The bands later became tribes and migrated throughout their territory of aboriginal lands that spanned the Northwest, from British Columbia to Montana and beyond.[2]

The tribes hold values for the natural environment and apply their values to present-day philosophy about natural resources. In the past, the land and its associated resources have defined the culture and history of the Salish and Kootenai Tribes. Today the land of the reservation provides a cultural and spiritual link with the past, while providing the primary sources of revenue for the general fund of the tribal government.[3]

The Tribes recognize the overall importance of the land and its resources. They have been buying back fee (private) lands on the reservation to increase the tribal land base. They also have sought to protect the tribal land base by establishing wilderness and primitive areas and by developing regulations and resource management plans designed to conserve tribal resources. In an ideal future, tribal members would prefer to see reservation lands used in a sustainable manner compatible with environmental and cultural resource protection.[4]

For the Tribes and tribal members, prudent use and management of natural resources is important to provide a healthy natural environment essential to maintain tribal culture and spirituality. A clean environment also is important to the physical and mental well-being of individual tribal members.[5]

Geographic Area and Climate

U.S. Highway 93 (US 93) from Evaro through Polson is located in the wide basin at the base of the Mission Mountain Range. There is a narrow canyon approximately three miles long near Evaro at the southern end of the area, another canyon approximately seven miles long near Ravalli, a grade approximately two miles long in the Post Creek area, and Polson Hill has 2.5 miles of grade near Polson at the northern end of the area. The remainder of the alignment is relatively level.

The area is sheltered by mountains and has lighter winds and more stable atmospheric conditions than open terrain. The average wind speed for the area is 6.5 miles per hour (mph) as recorded at Glacier International Airport.[6]

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[1] Flathead Reservation Comprehensive Resources Plan. Volume I, Existing Conditions. 1994. Page 4-2.
[2] Ibid. Pages 2-2 and 3-2.
[3] Ibid. Page 4-7.
[4] Ibid. Pages 4-7 and 4-9.
[5] Ibid. Page 4-9.
[6] U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1991 Local Climatological Data Annual Summary with Comparative Data, Kalispell, Montana, National Climatic Data Center, Ashville, North Carolina 28801-2733

The climate of the area is dominated by Pacific maritime weather. Winters are cold and cloudy, while summers are sunny and cool. Occasionally, weather fronts of the Pacific maritime and continental origin collide over the high mountains of the continental-divide country and result in high intensity rainfalls.

Average annual precipitation varies from 80 inches in the Mission Range to 16 to 30 inches west of the Mission Range. The average precipitation from the years 1941 through 1970 ranges from 13 inches at Missoula to 16 inches at St. Ignatius and Kalispell.[7] The heaviest rainfall typically occurs in late-spring and early-summer. July and August are the hottest and driest months.

Analysis Segments

The highway corridor, which is approximately 56.3 miles in length from Evaro through Polson, has been divided into the following segments for analysis: (Table 6.1-1)

Segment A begins in Evaro near the south boundary of the Flathead Indian Reservation and ends just south of Arlee, approximately where the speed limit decreases. The terrain is considered to be rolling due to a combination of horizontal and vertical curves. Thirty percent of this segment is striped as no passing. It is approximately 10 miles long, and there is a 1.8 mile-long southbound passing lane section with an average grade of 3.5%.

Segment B is within the town of Arlee. The posted speeds are 35 and 45 mph. There are numerous, closely spaced intersections and access points which create side friction for through traffic. US 93 has the right-of-way (ROW) through Arlee with minor streets having stop sign control. The terrain is level.

Segment C begins just north of Arlee and ends just south of Ravalli Canyon. It is a mix of rolling and level terrain. Thirty-eight percent of this segment is striped as no passing.

Segment D lies within Ravalli Canyon. It ends at the location where the speed limit decreases on the south side of the community of Ravalli. Due to a combination of vertical and horizontal alignments, this segment is considered to be rolling terrain. Seventy-eight percent of this segment is striped as no passing.

Segment E lies within the community of Ravalli. It is posted at 45 mph. The north terminus is at the base of Ravalli Hill just north of the intersection of US 93 and Montana Highway (MT) 200. The terrain is considered to be level.

Segment F begins just north of MT 200, includes Ravalli Hill and extends to the old US 93 intersection near St. Ignatius. The cross section just north of MT 200 has two lanes northbound and one lane southbound with an average grade of six percent for 1.6 miles. The section just south of old US 93 includes a southbound passing lane extending for approximately 1.1 miles at approximately a three-percent grade. It is striped as 100% no passing.

Segment G begins at the south access road to St. Ignatius (old US 93) and extends to approximately 0.5 mile north of the north approach to St. Ignatius (Airport Road). The terrain is considered to be rolling. It is striped as 35% no passing.

Segment H begins approximately 0.5 mile north of the north approach to St. Ignatius (Airport Road) and ends at the Montana Secondary (MTS)~~Federal-Aid Secondary (FAS)~~ 212 intersection. It is striped as approximately 55% no passing. The terrain is considered to be rolling.

[7]U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1941-70, National Climatic Data Center, Ashville, North Carolina, 28801-2733.

Table 6.1-1 Highway Analysis Segments and Characteristics

Location	Segments By Milepost		Miles	Year Built	Year Improved	# of Lanes	Type of Roadway	Pavemnt Width (Feet)	Shldr Width (Feet)	Traffic Control	
	From South	To North								Speed Limit (mph)*	No Passing Zones
SEGMENT A: Evaro to Arlee											
Evaro to Dirty Corner	6.5	15.0	8.5	1964	1976	3	Rural	36-40'	2	55	30%
Dirty Corner to Arlee	15.0	16.7	1.7	1940	1976	2	Rural	30-41'		55	38%
SEGMENT B: Arlee	16.7	18.2	1.5	1940	1976	2	Rural	44'	10	35/45	100%
SEGMENT C: Arlee to Ravalli Canyon	18.2	24.7	6.5	1956	1960	2	Rural	30-32'	3-4	55	38-78%
SEGMENT D: Ravalli Canyon to Ravalli	24.7	26.5	1.8	1956	1960	2	Rural	32'	4	55	38-78%
SEGMENT E: Ravalli	26.5	27.5	1.0	1956	1960	3	Rural	44'	4	45	100%
SEGMENT F: Ravalli Hill	27.5	31.2	3.7	1956	1960/ 1983/ 1989	3	Rural	32-48'	6	55	100%
SEGMENT G: St. Ignatius	31.2	33.5	2.3	1956	1983	2	Rural	32'	4	55	35%
SEGMENT H: St. Ignatius to MTS 212	33.5	42.1	8.6	1950-1956	1983	2	Rural	28-32'	2-4	55	55%
SEGMENT I: MTS 212 to Ronan	42.1	46.1	4	1966	--	2	Rural	40'	3	55	24%
SEGMENT J: Ronan	46.1	47.6	1.5	1966-1970	1983	3	Urban	44'	4	25,35,45	100%
SEGMENT K: Ronan to Pablo	47.6	50.8	3.2	1970	--	2	Rural	40'	8	55	18%
SEGMENT L: Pablo	50.8	54.7	3.9	1958	--	3	Rural	32-44'	4	55	100%
SEGMENT M: Pablo to Caffrey Road	54.7	56.5	1.8	1958	1974	2	Rural	32'	4	55	35%
SEGMENT N: Caffrey Road to MT 35	56.5	59.0	2.5	1958	1982	3	Rural	39-44'	2-4	45,55	100%
SEGMENT O: Polson - MT 35 to Flathead River Bridge	59.0	61.0	2.0	1958	--	3	Urban	44-59'	0-4	25,35	100%
SEGMENT P: Polson to End of Proposed Action	61.0	62.8	1.8	1958	1986	2	Rural	24-32'	0-4	45,55	100%
TOTAL:	--	--	56.3	--	--	--	--	--	--	--	60%

Montana Department of Transportation, Environmental Assessments for: Evaro-Dirty Corner; Dirty Corner-Ravalli; Ravalli-North; Ronan-Polson; 1990.
MTS is Montana Secondary Highway/FAS is Federal Aid Secondary highway.
*After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule:" A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

Segment I begins at ~~MTSFAS~~ 212 and ends just south of Ronan. It has a mix of rolling and level terrain and is striped as 24% no passing.

Segment J is within the community of Ronan. It is posted at 45 mph and has a continuous two-way left-turn center median through Ronan. There are many intersections and accesses, with stop sign control, which create side friction. There is a traffic signal in Ronan at ~~MTSFAS~~ 211. The terrain is considered to be level.

Segment K is between the communities of Ronan and Pablo. It is predominantly level with 18% striped as no passing.

Segment L is within the community of Pablo and includes a continuous two-way left-turn center median. There are some intersecting streets and driveways which cause some side friction. The intersecting streets have stop sign control. The terrain is considered to be level.

Segment M begins just north of Pablo and ends at Caffrey Road. It is approximately 1.8 miles long and is striped as 35% no passing. The terrain is considered to be rolling.

Segment N is comprised of a three-lane cross section on Polson Hill, and there are two lanes in the southbound direction. The grade is approximately 5.5%.

Segment O in Polson is composed of two subsegments. The first extends from MT 35 to Second Street East. It is a three-lane cross section with the third lane used as a continuous two-way left-turn center median. A short 4.5% grade exists east of the golf course for 0.2 mile. Three streets (Seventh Avenue, Fourth Avenue and Third Avenue) intersect at skews less than 75%, resulting in sight distance problems. Curb and gutter is provided along some of the segment. The posted speed is 35 mph. There are numerous approaches and intersections along this segment.

The second subsegment extends from Second Street East to the Flathead River bridge. Parallel parking is provided on both sides of the roadway. A traffic signal exists at First Street East. The posted speed is 25 mph, with two lanes of traffic and a third lane provided for left turns. Ten approaches and intersections exist along this segment.

Segment P extends between the Flathead River bridge and the end of the proposed action at Milepost 62.8. This segment is posted at 45 mph and 55 mph[8]. It is considered to be a two-lane rural highway.

6.1. TRAFFIC OPERATION AND SAFETY

6.1.1. General Traffic Characteristics

US 93 from Evaro through Polson, along with the parts of US 93 in the Kalispell-Whitefish and Lolo-Hamilton areas, have the highest levels of traffic on rural primary highways in Montana.

The annual average daily traffic (ADT) for US 93 in these areas is more than 5,000 vehicles each day, compared with levels ranging from less than 1,000 to the highest levels of approximately 3,000 vehicles per day. This means the ADT in the area is at least two-thirds higher than ADT on other rural primary highways in the state.

[8]After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

US 93 in the area of the proposed action also has a poor level-of-service (LOS) rating. While most rural primary highways have an LOS rating of A, B or C, this highway's LOS is mostly D and E. ~~This means~~ With LOS D, traffic is frequently congested, with long platoons of vehicles that cause time delays as much as 75% of the time a vehicle is on the road. With delays, driver frustration increases causing unsafe driving practices. With LOS E, traffic is delayed more than 75% of the time, passing becomes impossible and platooning becomes intense when slow-moving vehicles are encountered.

Interstate, regional and local travel contributes to the existing and projected future traffic demand on US 93 in the area of the proposed action.

US 93 traverses the United States in generally a north-south direction from near the Mexican border to the Canadian border and passes through the states of Arizona, Nevada, Idaho and Montana.

US 93 in the area of the proposed action, and for its entire length within Montana, is functionally classified as a principal arterial and is part of the National Highway System (NHS) ~~as established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).~~

This highway is part of an extensive system of rural arterial routes that support the interstate highway system for statewide and regional travel. Other highways in the region are: Interstate Highway 90; Montana highways (MT) 28, 35, 135, and 200 in Lake and Sanders counties; MT 83, which is east of the proposed action in the Swan Valley of Lake and Missoula counties; and MTS~~Federal Aid Secondary (FAS)~~ 211, 212, 382 and 559 in Lake and Sanders counties. (Figure 5.1-6)

US 93 is the major north-south transportation route in western Montana providing interstate, regional and local access to natural resources-based industries such as agriculture, forest and mining, tourism, and recreation.

The existing highway is generally a two-lane rural highway with normally uninterrupted traffic flow. In rural areas between communities, there are, on average, approximately 10 approaches or intersections per mile, no designated pedestrian crossings, and no schools located on or near the highway. Approximately 12% of businesses are located along US 93 outside communities~~only a few businesses~~. At Pablo, Two Eagle River School and Salish Kootenai College are adjacent to highway frontage.

Traffic operation on US 93 through existing communities, particularly through Arlee, Ronan and Polson but also through Ravalli, St. Ignatius and Pablo, is different than on rural sections of US 93 and has the following characteristics:

- Speed limits are 35 mph in Arlee, 45 mph in Ravalli, 25 mph in Ronan and 25 mph in Polson as compared with 55 mph on the remainder of the highway. Speed limits have been set by the Montana Transportation~~Highway~~ Commission (MTC~~MHC~~) based on prevailing speeds (the 85th percentile speed) through the area.[9]

- There are high numbers of approaches and intersections -- approximately 18 per mile in Arlee, 26 per mile in Ronan and 50 per mile in Polson compared with an average of approximately 10 per mile, outside communities.

[9]After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

- The high traffic volumes in Arlee, Ronan and Polson created by US 93 traffic cause congestion. This results in increased air and noise pollution, pedestrian conflicts and a barrier effect through communities caused by difficulty crossing the highway for pedestrians and vehicles.

- There are pedestrian crossings with signals -- a flashing warning light at "B" (Butch Larsen/Taelman) Street in Arlee; a traffic signal at Round Butte Road in Ronan; a traffic signal at MT 35 in Polson; and a traffic signal at First Street Southeast in Polson.

- There are schools in the communities with a high number of school children crossing the highway both at designated crossings and at other areas.

- Due to the schools, the tribal complex, several businesses and other features along the highway in Pablo, there are high numbers of pedestrian crossings and vehicle approaches with related safety and congestion problems.

- There are concentrations of businesses, particularly highway- oriented businesses. These business areas generate relatively high numbers of pedestrians, vehicle parking, driveways and approaches.

- Left and right turns from the highway and left and right turns onto the highway are frequent.

- The above conditions create an environment in these communities where traffic slows and flow is often interrupted. Conflicts with pedestrians, entering vehicles and turning vehicles are frequent, and problems occur for safety, operation and efficiency.

6.1.2. Existing Highway Conditions

The existing highway is generally a two-lane, two-way highway facility. The year each segment was built, the year most recent improvement occurred, the number of lanes, pavement and shoulder widths, speed limits and percent of no passing zones are listed on Table 6.1-1.

6.1.2.1. Existing Lane Configuration

Some areas have passing lanes and continuous two-way left-turn center medians, as summarized in Table 6.1-2. Separate designated left-turn bays and right-turn deceleration lanes are provided at some important intersections. The roadway is asphalt paved and the roadway surface is generally in good condition and is well maintained by the Montana Department of Transportation (MDT). Signing and pavement markings are in generally good condition and meet current standards.

6.1.2.2. Railroad Interaction

The Montana Rail Link (MRL) railroad crosses or is adjacent to and parallel with US 93 in some areas:

- Milepost 6.5 to 7.3 - Evaro area.

- Milepost 9.7 - US 93 crosses over the railroad on a 174-foot long concrete bridge.

- Mileposts 13.4 to 15.4 - Dirty Corner area.

- Mileposts 19.1 to 27.1 - Jocko River to MT 200.

- Mileposts 56.6 to 59.5 - Polson Hill.

Table 6.1-2 Summary of Existing Auxiliary Lanes

Milepost		Item	Direction
From	To		
12.3	14.1	Passing Lane	Southbound, Evaro Hill
16.6		Left-Turn Bay, Jocko Road	Southbound
27.4		Left-Turn Bay, Montana Highway 200	Northbound
27.5	29.2	Passing Lane	Northbound, Ravalli Hill
29.2	30.0	Passing Lane	Southbound, Ravalli Hill
31.1		Right-Turn Deceleration Lane, Old U.S. Highway 93	Northbound
32.7	33.1	Two Left-Turn Bays	Southbound, St. Ignatius
43.6		Left-Turn Bay, Road to Job Corps Center	Southbound
46.1	47.8	Continuous Two-Way Left-Turn Center Median	Both, Ronan
50.7		Left-Turn Bay, Old U.S. Highway 93	Northbound
51.8	53.6	Continuous Two-Way Left-Turn Center Median	Both, Pablo
56.8	57.8	Passing Lane	Southbound, Polson Hill
59.0	61.0	Continuous Two-Way Left-Turn Center Median	Both, Polson
60.0	60.9	Parallel On-Street Parking	Both, Polson

Morrison-Maierle, 1993.

This railroad line is designated as a mainline by MRL.

6.1.2.3. Horizontal Geometric Design

Existing geometric design of the roadway is compared with American Association of State and Transportation Highway Officials (AASHTO) guidelines[10] and MDT standards as follows:

- Horizontal degree of curvature of the roadway alignment generally meets the current 60 mph design standard of 4° 45' (a radius of 1,200 feet) with the exceptions listed in Table 6.1-3.[11]

[10]American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 1990.

[11]Three of the five horizontal curves listed on Table 6.1-3 are in developed areas in or near the city of Polson. These horizontal curves are not considered substandard because the travel speeds in this area are well below 60 mph.

Table 6.1-3 Summary of Substandard Horizontal Curves

Milepost		Degree Of Curvature	Radius Of Curvature	Design Speed	Location
From	To				
25.3	25.5	5° 30'	1,050 feet	55 mph	In Ravalli Canyon, south of Ravalli
27.5	27.7	7° 00'	820 feet	50 mph	Between MT 200 and the base of Ravalli Hill, just north of Ravalli
59.1	59.2	7° 00'	879 feet	50 mph	Just west of MT 35
59.4	59.6	7° 00'	829 feet	50 mph	Just west of MT 35
59.6	60.0	8° 00'	716 feet	45 mph	In Polson, just east of Flathead River

Morrison-Maierle. 1993.
Substandard horizontal curves, based on a design speed of 60 mph, include those with a degree of curvature of more than 4° 45' (Radius less than 1,200 feet).

Problems associated with substandard horizontal curves include:

- To negotiate the curve, vehicles are required to reduce speeds below normal travel speeds. This increases the chances for rear-end collisions~~, reduces operation levels, or level of service (LOS)~~ and reduces vehicle efficiency.
- Vehicles that do not reduce speed at the curve will be subject to the possibility of losing control and going off the roadway. This problem is increased when the roadway is snow covered or icy.
- Sight distance is reduced or impaired.

6.1.2.4. Vertical Geometric Design

Vertical grades are generally flatter than the MDT maximum design standard of four percent, except as listed in Table 6.1-4.[12] Vertical grades that are steeper than standard introduce the following problems:

- In addition to trucks, recreational vehicles (RVs) and other heavy vehicles, grades steeper than standard begin to cause a speed reduction for some passenger cars while others continue at normal highway speeds. This causes additional speed differentials in the traffic stream and increases the chances for rear-end accidents.
- The passing demand is increased, LOS is reduced and cost increases to operate vehicles.

[12]Four of the eight vertical grades listed on Table 6.1-4 are in developed areas in or near the city of Polson. These grades are not considered substandard because the travel speeds in this area are well below 60 mph.

Table 6.1-4 Summary of Vertical Grades Steeper Than Design Standards

Milepost		Length (Miles)	Percent Grade	Location
From	To			
18.8	19.1	0.3	4.8	Jocko River Crossing
27.7	29.0	1.3	6.0	Ravalli Hill
38.7	39.1	0.4	4.8 to 5.9	Post Creek Hill
57.3	57.8	0.5	5.0 to 5.5	Polson Hill
59.6	59.8	0.5	4.5	Along golf course, in Polson
60.1	60.2	0.1	4.2	East of Super 1 Foods, in Polson
60.6	60.8	0.2	4.6	East of Second Avenue, in Polson
62.0	62.6	0.6	4.3 to 4.8	West of Flathead River Bridge

Morrison-Maierle. 1993.
Design standard for maximum vertical grade is four percent. Grades below maximum are always desirable.

- Vertical curves (a curve in the vertical alignment of the roadway designed to effect a gradual change between different vertical grades) generally meet stopping sight distance requirements (based on 60 mph design speed in rural areas and a 40 mph design speed in communities), except as summarized in Table 6.1-5.[13] Stopping sight distance is defined as the length of roadway ahead, visible to the driver, and required to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Vertical curves that do not meet standards provide a lesser sight distance, reduce the time available for a driver to react and avoid the object and, therefore, increase the possibility of collision.

- Paved shoulder width (the area outside the driving lanes), as shown on Table 6.1-1, is generally less than the eight-foot width required for rural arterial highways with high traffic volumes. Space is, therefore, limited for 1) emergency stopping on the roadway, 2) farm equipment, wide loads or other equipment using the roadway, 3) pedestrians and bicyclists (Sections 6.6 and 7.6), 4) a recovery zone for errant or out-of-control vehicles and 5) snow removal and storage. As a result, safety and driving comfort, or convenience, are decreased.

6.1.2.5. Intersections and Approaches

As listed on Table 6.2-4, there are approximately 681 approaches to the existing highway. These include highway and street intersections; residential, commercial and industrial driveways; farm field approaches; and others. The number of private approaches to the highway is increasing steadily as development occurs and as population

[13]Eleven of the 31 vertical curves listed on Table 6.1-5 are in developed areas in or near the city of Polson. These vertical curves are not considered substandard because the travel speeds in this area are well below 60 mph.

Table 6.1-5 Vertical Curves Not Meeting Design Standards

Design Speed	Number of Curves
Less than 60 mph and greater than or equal to 55 mph	20
Less than 55 mph and greater than or equal to 50 mph	6
Less than 50 mph	5

Morrison-Maierle. 1993.

increases. ~~Access is currently controlled through driveway and approach regulations where access is managed by MDT through application of road approach standards and permit requirements. No formal full or partial access control has been implemented on the existing highway. Land owners desiring to construct a driveway approach need only obtain a permit from the Missoula District Engineer of MDT after demonstrating that it will be constructed properly and will not create a particular safety hazard.~~

Access currently is controlled through driveway and approach regulations where access is managed by MDT through application of road approach standards and permit requirements. Land owners desiring to construct a driveway approach need only obtain a permit from the Missoula District of MDT after demonstrating that it will be constructed properly and will not create a particular safety hazard. Sight distance for safety is the primary factor used to determine if it is appropriate to issue a permit for an approach.

MDT has purchased rights for partial access control for approximately 40% of the land adjacent to highway ROW between Ronan and Polson. Access rights have not been purchased for the remainder of the proposed action. Purchase of partial access control will maintain existing access. It will consider consolidation of approaches, and it will purchase access rights for existing approaches on every parcel of land adjacent to highway ROW.

Some of the existing approaches have undesirable intersection angles with US 93 -- desirable angle of intersection is defined as a driveway or roadway that approaches the main highway at an angle nearly perpendicular (within 15° is desirable). Improper intersection angles create difficulty for drivers to see approaching vehicles and also encourage improper turns and failure to stop or yield. Some of the approaches have grades that are too steep -- approach grades should be three percent or less adjacent to the highway (within 75 feet for public approaches and 25 feet for private approaches) and 10% maximum away from the highway. Grades that are too steep create difficult stopping conditions for vehicles approaching the highway downhill and difficult starting and acceleration for vehicles approaching uphill, particularly on slick surfaces.

The density of junctions to a highway is a major contributor to the accident rate on a rural arterial highway. As indicated on Tables 6.1-6 and 6.1-7, ~~241~~272 (~~34~~36%) of the recorded accidents on US 93 occurred at intersections or were intersection or driveway related. It is likely that approaches contribute to other types of accidents by distracting drivers or by causing them to shy away from the approach and move closer to the roadway centerline.

High junction density also contributes to substantial reductions in the capacity, service level and driving comfort of the highway.

Table 6.1-6 Accidents By Year.

Segment	Location	Length (miles)	1990	1991	1992	1993	1994	Total	Accident Severity	Accident Rate
A	Evaro To Arlee	10.2	33	22	29	24	36	144	1.54	1.17
B	Arlee	1.5	1	8	2	8	7	26	1.35	1.54
C	Arlee to Ravalli Canyon	6.5	19	8	13	9	16	65	1.62	0.89
D	Ravalli Canyon to Ravalli	1.8	5	2	3	4	8	22	1.55	1.09
E	Ravalli	1.0	4	4	1	1	3	13	1.75	1.14
F	Ravalli Hill	3.7	7	7	7	10	4	35	1.73	0.90
G	St. Ignatius	2.3	6	7	5	9	4	31	1.70	1.28
H	St. Ignatius to MTS 212	8.6	12	18	19	15	26	90	1.69	1.00
I	MTS 212 to Ronan	4.0	3	8	5	9	13	38	1.57	.63
J	Ronan	1.5	2	0	1	5	2	10	1.68	.36
K	Ronan to Pablo	3.2	7	5	4	7	5	28	1.43	.56
L	Pablo	3.9	7	12	9	13	19	60	1.61	1.00
M	Pablo to Caffrey Road	1.8	4	1	8	1	6	20	1.65	.68
N	Caffrey Road to MT 35	2.5	6	7	14	12	9	48	1.64	1.16
O	Polson - MT 35 To Flathead River Bridge	2.0	23	9	34	22	17	105	1.43	2.57
P	Polson to End of Proposed Action	1.8	0	2	2	6	5	15	1.79	0.722
Total		56.3	139	120	156	155	180	750	1.57	1.03[1]

Montana Department of Transportation. Accident Records System. ~~1987-91~~1990-94. [1] Weighted average, excluding incorporated cities, Ronan and Polson.

This table has been revised in the final EIS using accidents for 1990-94.

Table 6.1-7 Number of Accidents by Various Factors

For the following categories of accidents, the base of total accidents for the five-year period ~~1987-91~~1990-94 is ~~702~~750. ~~Combined single-vehicle and multiple-vehicle accidents involved 1,136 drivers.~~

BY MONTH

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
53	57	63	40	62	64	78	81	49	64	66	73

BY DAY OF WEEK

Sat	Sun	Mon	Tue	Wed	Thu	Fri
137	99	106	82	101	118	107

BY TIME OF DAY

0000 to 0600	0600 to 0900	0900 to 1200	1200 to 1500	1500 to 1800	1800 to 2100	2100 to 2400
103	80	93	125	184	101	64

BY LIGHT CONDITIONS

Daylight	Dawn-Dusk	Dark Unlighted	Dark Lighted
482	188	41	39

BY ROAD CONDITIONS

Dry	Wet	Snowy	Icy	Slushy	Natural Debris
555	69	58	50	18	1

BY WEATHER CONDITIONS

Clear	Rain	Snow	Fog	Overcast
427	46	62	11	204

(Continued)

This table has been revised in the final EIS using accidents for 1990-94.

Table 6.1-7 Number of Accidents by Various Factors (Continued)

For the following categories of accidents, the base of total accidents for the five-year period ~~1987-91~~1990-94 is ~~702~~750.

BY COLLISION TYPE

Head-On	Rear-End	Angle	Side-Swipe, Meeting	Side-Swipe, Passing	Backed Into	Other
29	175	141	24	40	4	337

BY DRIVER'S AGE

Under 15	15-19	20-29	30-39	40-49	50-59	60-69	70 & Over
7	168	256	287	219	134	66	91

RELATED TO:

Alcohol	Pedestrians	Animals
88	9	49

BY INJURY SEVERITY AND COST OF ACCIDENTS

Fatal Accidents	Injury Accidents	Property Damage Accidents	Total Accidents	Fatalities	Injuries	Accident Cost[1] ($1000)
24	320	406	750	27	596	89,430

BY RELATIONSHIP TO A JUNCTION

Non-Junction	Intersection	Intersection Related	Driveway Related
478	96	104	72

VEHICLES INVOLVED IN ACCIDENTS BY REGISTRATION

Montana	Other U.S. States	Canada
1047	122	4

Montana Department of Transportation. Accident Records System. 1990-94.

[1] Accident costs are computed based on average costs for each type of accident based on injury severity as reported in: Federal Highway Administration, The Costs of Highway Crashes, FHWA-RD-91-005, June 1991.

This table has been revised in the final EIS using accidents for 1990-94.

6.1.2.6. Bridge Locations

The following is a summary of bridges located on the existing highway:

- Milepost 9.7, 174-foot long concrete bridge over the railroad. This concrete bridge is in relatively good condition and can accommodate up to a 28-foot roadway.
- Milepost 19.0, 104-foot long concrete bridge over the Jocko River. This bridge is in good condition and can accommodate up to a 30-foot roadway.
- Milepost 37.8, 51-foot long concrete bridge over Post Creek. This bridge is in good condition.
- Milepost 40.8, a timber bridge at Ninepipe Reservoir. This bridge is not in good condition.
- Milepost 57.1, concrete bridge over the Pablo Feeder Canal. This bridge is in good condition and can accommodate a 45.5-foot roadway.
- Milepost 61.0, 1,536-foot-long concrete bridge over the Flathead River. This bridge is in good condition.

All other stream and drainage crossings are currently in pipe culverts or box culverts.

6.1.2.7. Public Perception of Existing Highway Conditions

A survey conducted in 1994 for the Confederated Salish and Kootenai Tribes (CSKT), of both tribal members and non-tribal members living on the Flathead Indian Reservation, indicates agreement that serious problems exist with driving conditions on many sections and overall on the highway. Approximately 55% of both groups rated overall driving conditions as having serious problems.[14].

6.1.3. Accident History

Tables 6.1-6 and 6.1-7 summarize accidents reported to the Montana Department of Justice for ~~1987-1991~~ 1990-1994 by the various law enforcement agencies that investigate accidents (tribal, county and state).

Table 6.1-8 compares the occurrence of some of the various accident types for the years ~~1987~~1990 through ~~1991~~1994 listed in Table 6.1-7 with statewide averages for all US highways in Montana ~~the primary highway system recorded~~ during the years ~~1979~~1990 through ~~1991~~1994. ~~Occurrence rates on this highway are generally similar to statewide averages with the following exceptions~~The following is a list of some of the differences:

- A higher percentage of accidents involved fatalities -- 3.2% on this highway compared with 2.2% statewide.
- A higher percentage of accidents occurred during daylight hours.
- A smaller percentage of accidents occurred involving slick roads on this highway (snowy or icy) -- ~~20~~14.4% compared with ~~42~~23.0% statewide.

[14]Bioeconomics, Inc. and Boyer Consulting Services, Draft, U.S. Highway 93 Corridor Use and Opinion Survey: Summary Results and Survey Methodology, 10 November 1994. Pages 10-11.

Table 6.1-8, Accident Comparison With Statewide

Category	Item	Total of All Accidents		Percent of All Accidents	
		US 93, Evaro - Polson 1990-1994	NHS Primary Rts. 1992-1994(State)	US 93, Evaro - Polson 1990-1994	NHS Primary Rts. 1992-1994(State)
Light Condition	Daylight	482	3,553	64.3	57.8
	Dawn, Dusk, Dark, Unlit	229	2,397	30.5	39.0
	Dark, Lited	39	197	5.2	3.2
Road Condition	Dry	555	4,100	74.0	66.7
	Wet	69	522	9.2	8.5
	Icy/Snowy	108	1414	14.4	23.0
	Slushy	18	111	2.4	1.8
Weather Condition	Clear	427	3,258	56.9	53.0
	Raining	46	320	6.1	5.2
	Snowing	62	658	8.3	10.7
	Fog	11	49	1.5	0.8
	Overcast	204	1,863	27.2	30.3
Injury Severity	None	406	3,578	54.1	58.2
	Injury	320	2,434	42.7	39.6
	Fatal	24	135	3.2	2.2
Collision Type	Head-On	29	154	3.9	2.5
	Rear-End	175	934	23.3	15.2
	Angle	141	965	18.8	15.7
	Sideswipe Meeting	24	166	3.2	2.7
	Sideswipe Passing	40	264	5.3	4.3
	Backed Into	4	25	0.5	0.4
	Other	337	3,639	45.0	59.2
Relationship to Junction	Non-Junction	478	4,309	63.7	70.1
	Intersection	96	701	12.8	11.4
	Intersection Related	104	830	13.9	13.5
	Driveway Access	72	313	9.6	5.1
	Total Accidents	750	6,147	100.0	100.0
	Length (miles)	56.3	3,859	--	--
	Annual Accidents per Mile	2.66	0.53	--	--

Montana Department of Transportation, Accident Records System, 1990-1994.
This table has been revised in the final EIS using accidents for 1990-94.

~~There were more accidents per mile on this roadway -- 2.49 accidents per mile per year compared with 0.72 statewide.~~

~~A higher percentage of accidents occurred during foggy weather -- four percent compared with one percent statewide.~~

- A higher percentage of accidents were related to driveway access -- ~~eight~~9.6% compared with ~~four~~5.1% statewide.

- A higher percentage of accidents were head-on collisions and rear-end collisions -- 3.9 and 23.3% compared with 2.5 and 15.2%, respectively.

During the period ~~1979-91~~1990-1994, the accident rates (the number of accidents that occur with each million miles of vehicle travel) for ~~various sections of US 93 outside Ronan and Polson, ranging from 0.65 to 2.29, did not vary greatly from the statewide average of 1.72~~US 93 in the area was 1.03 compared with a statewide average of 1.30. Accident severity (measuring injury and fatalities in accidents), ~~ranging from 1.29 to 1.68, did not vary greatly from the statewide average of 1.54~~was 1.57 on this highway compared with 1.52 statewide.[15]

Table 6.1-9 compares accidents by the driver's age and indicates that drivers under age ~~20~~30 were involved in a slightly lower percentage of the accidents on US 93 than on similar highways statewide and that drivers over the age of ~~50~~30 were involved in a slightly higher percentage.

Research by the Montana Traffic Safety Task Force[16] shows this section of US 93 as having an unusual amount of traffic collisions and that about 20% of the accidents involved older drivers, age 60 and over. The research indicated that communities along the corridor "have very high percentages of older citizens" (Section 6.4). Based on this research, further study was completed and a report was prepared[17] to identify improvements and programs to reduce the number of accidents. Recommendations for improvements were made particularly to target and reduce accidents for elderly drivers which should, at the same time, benefit all drivers. Recommendations include:

- Increase the width of all pavement markings, including edge markings and centerlines, from four inches to six inches.

- Replacement of most signs to achieve: 1) proper location and placement; 2) larger, more visible sign faces; 3) correction of incorrectly installed or poorly placed sign supports; and 4) higher reflectivity for greater visibility at night.

- Replacement of existing mailbox posts with breakaway posts.

- Better maintenance of signing, pavement markings and other traffic control devices.

- Installation of additional designated left-turn bays.

- Install lighting at some approaches and intersections.

- Widen the existing paved shoulder in several areas.

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[15]Montana Department of Transportation. Accident Records System. ~~1987-91~~1990-94.

[16]This task force includes representatives from the Montana Department of Transportation, the Montana Highway Patrol, the Highway Traffic Safety Division of the Montana Department of Justice and the Federal Highway Administration.

[17]Multi-disciplinary Traffic Safety Task Force, State of Montana, Highway Traffic Collision Countermeasures on U.S. Highway 93 Corridor, FAP 5 Milepost 0 to Milepost 59.3, January 1992.

- Reduce side slopes of approaches to reduce pitching and rolling of errant or out-of-control vehicles leaving the roadway.

- Increase the size and quantity of roadside delineation.

- Eliminate roadside informational pull-outs and incorporate the information into the newly constructed information center located just north of Ravalli.

- Improve or provide better warning signs and delineation at substandard horizontal curves.

- Install a traffic flasher and additional approach lanes at Division Street in Pablo.

Implementation and construction of some of these recommendations ~~is being planned and construction is scheduled for~~ occurred in 1994. Others are more extensive and expensive and may best be implemented with other highway improvements.

Table 6.1-9 Accidents by Driver's Age, Comparison with Statewide (1990-1994)

Driver's Age	Percent Of All Accidents	
	This Area[1]	US Highways Statewide[2]
Under 15	1%	1%
15 to 19	14%	16%
20 to 29	21%	23%
30 to 39	23%	21%
40 to 49	18%	16%
50 to 59	11%	9%
60 to 69	8%	7%
Over 70	7%	7%
Number of Drivers Involved	1,228	35,244

Montana Department of Transportation. Accident Records System. ~~1987-1991~~1990-1994.
[1] On U.S. Highway 93 during the years ~~1987 through 1991~~1990 through 1994.
[2] On all U.S. Highways and State Highways in Montana during the ~~year 1991~~years 1990 through 1994, Montana Highway Patrol, Annual Traffic Statistical Report, ~~1991~~1990 through 1994

This table has been revised in the final EIS using accidents for 1990-94.

6.1.3.1. Four-Lane/Two-Lane Highway Comparison

An analysis of accidents was completed for US 93 between the DeSmet I-90 Interchange and Evaro, from Mileposts 0.572 to 6.299. This part of US 93 was improved from a two-lane highway to a four-lane highway in 1985-86, and the record of accidents was compared for the five-year periods 1980-84, when it was two lanes, and 1987-91, after it was four lanes. The changes in accident rates and characteristics on this section of highway may be representative of what to expect if sections of the highway between Evaro and Polson are improved to four lanes because:

- Driver characteristics are similar.
- The traffic volume and characteristics are similar to US 93 from Evaro through Polson.
- Weather conditions are similar.
- Terrain on this section, which includes some flat, some rolling and some hilly terrain, is similar.
- The density of junctions to the highway is similar.

The results of the analysis are summarized in Table 6.1-10. The comparison indicates the following changes occurred after the highway was improved from two lanes to four lanes:

- Even though traffic volume increased by 31% (from 4,383 to 5,728 vehicles per day), the total number of accidents decreased by 38% (from 93 to 58).
- There were no fatal accidents, compared with three from 1980 through 1984.
- The number of accidents involving injuries decreased from 46 to 13 and the number of injuries was reduced to one-third of the number before the four-lane highway was constructed -- from 72 to 24.
- The accident severity index decreased from 1.65 to 1.22 as compared with almost no change in the statewide average severity index for rural primary highways.
- The accident rate decreased from 2.03 to 0.97, a 52% decrease. During the same time, the statewide average accident rate for rural primary highways decreased from 2.00 to 1.26, a decrease of 37%.
- There were no head-on accidents and only about one-third as many rear-end accidents. These are generally more serious accidents and the reduction in this type of accident helps explain the above described reductions in fatalities, injuries and the accident severity index.

The results of this comparison indicate that safety improvements and hazard reductions occurred as indicated by the reductions in injuries and fatalities and suggest they may also occur between Evaro and Polson if a four-lane highway is constructed.

6.1.3.2. Comparison of Two-Lane Highway, Passing Lanes and Transition Areas

An analysis of accidents was completed for US 93 from Evaro through Polson, except for Ronan and Polson, to compare segments of two-lane highway with segments of having passing lanes. There are 5.3 miles of the current highway with passing lanes, located at three segments: North of Evaro, north of Ravalli and south of Polson.

Table 6.1-10 Comparison of Accidents, U.S. Highway 93 (Four-Lane): I-90 to Evaro*

U.S. HIGHWAY 93 MILEPOST 0.572 TO MILEPOST 6.299	ACCIDENTS BEFORE 4-LANE 1980 - 1984 Five-Year Period	ACCIDENTS WITH 4-LANE 1987 - 1991 Five-Year Period
Total Number of Accidents	93	58
Accidents per Mile per Year	3.25	2.03
Accident Rate	2.03	0.97
Statewide Average Accident Rate**	2.00	1.26
Severity Index	1.65	1.22
Statewide Average Severity Index**	1.52	1.54
Average Annual Daily Traffic	4,383	5,728
Level-of-Service	D	A
Fatal Accidents	3	0
Fatalities	3	0
Injury Accidents	46	13
Number of Injuries	72	24
Head-On Accidents	3	0
Rear-End Accidents	11	4
Angle Accidents	3	2
Daylight	43	25
Dark	36	31
Icy or Snowy Road	16	25
Related to Intersections or Driveways	14	4

Montana Department of Transportation, Accident Records System, 1980-1991.
*Construction of the improvements to a four-lane highway occurred in 1985 and 1986. For that reason, no analysis is included for those two years. ** Rural primary highways.

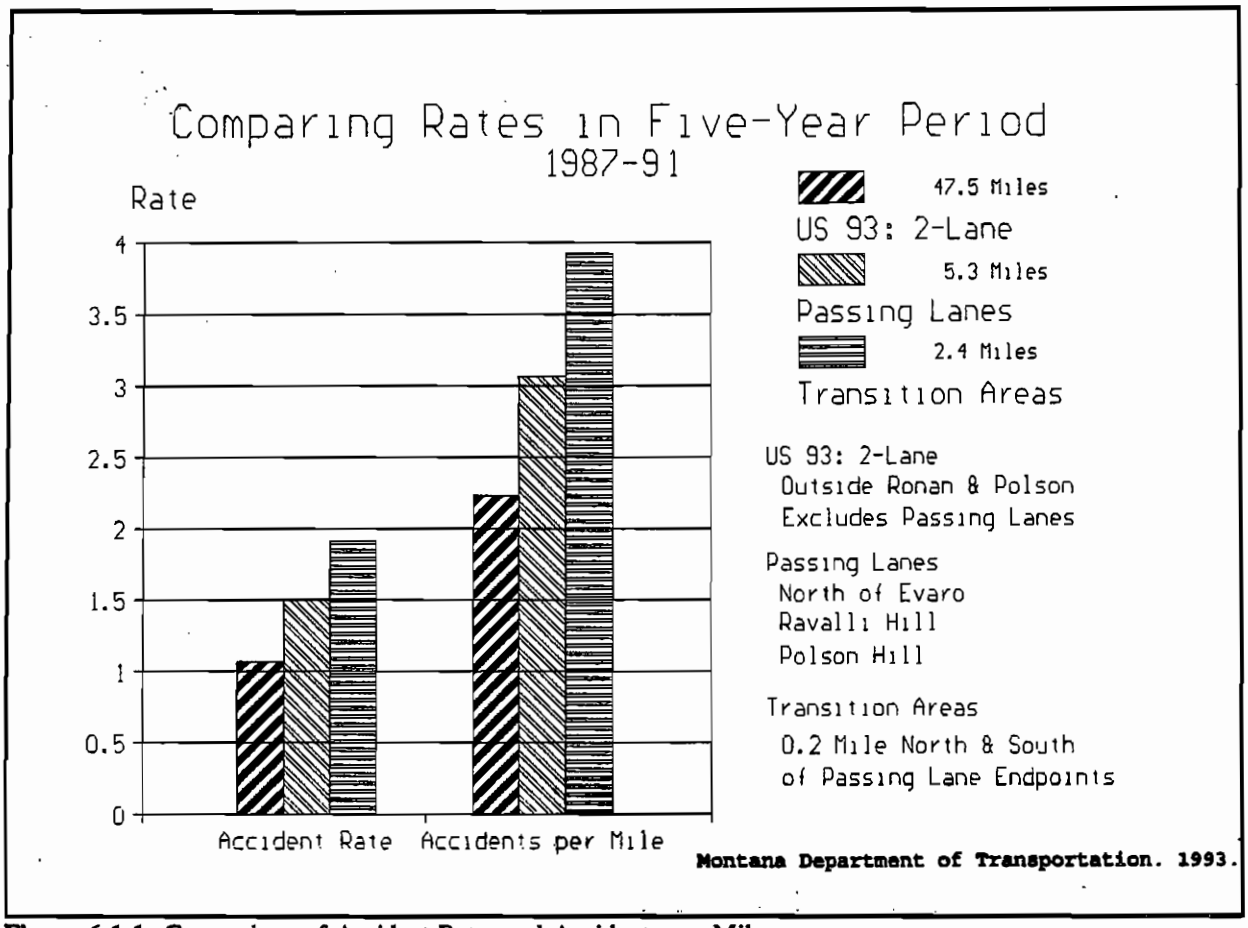


Figure 6.1-1 Comparison of Accident Rates and Accidents per Mile

During 1987-91, and based on the accident rate (accidents that occur with each million miles of vehicle travel) and accident frequency (accidents per mile of highway), accidents were 40% more likely to occur in passing lanes than on two-lane segments of highway. Accidents were 80% more likely to occur in the transition areas, which extend 0.2 mile in both directions from the endpoints of passing lanes, than on the two-lane segments of US 93. (Section 4.5 and Figure 6.1-1)

It should be noted that, where currently there are passing lanes on the existing highway, they have been created by repainting the roadway with narrower shoulders -- no actual pavement widening has been done. As a result, in these areas, shoulder widths have been reduced from approximately eight feet down to two feet.

6.1.4. Historic Traffic Volume

Historic traffic volume and characteristics have been determined using information from the Ravalli Automatic Traffic Recorder (ATR) and various other counts completed by MDT.[18]

[18]The Ravalli Automatic Traffic Recorder (ATR) has been in operation by the Montana Department of Transportation since 1941. It is located just south of Ravalli near Milepost 26.3 which is approximately 20 miles from the beginning of the proposed action (near Evaro) and 36 miles from the end (at Polson). It counts vehicles continuously and provides information by the hour, day, week, month and year.

To appropriately reflect the operating conditions that should be used for design to properly serve traffic, a period of one hour is used. It would not be appropriate to predicate the design on the maximum peak-hour traffic of the year, yet the use of the average hourly traffic (1/24 of the ADT) would result in design with inadequate capacity for current and growing needs. The 30th highest-hourly volume of the year (30 HV) generally reflects the proper balance and should be used in the design of highway facilities (AASHTO, A Policy on Geometric Design of Highways and Streets, 1990). Studies indicate that 30 HV is generally the point that is exceeded by only a few relatively high traffic volumes while there are many hourly volumes during the year that are only slightly less. The 30 HV has been used to represent the design hourly volume (DHV) in all capacity and LOS analyses.

Table 6.1-11 summarizes the ADT, and the 30th highest-hourly volume (30 HV) for various years at the ATR since it has been in use. Statistical analysis of the data indicates that, even though there have been periods of sharper increases and "plateaus" where growth has been slower, approximately a three percent average annual growth rate in traffic volume has occurred during the past 20 years. On the average in the United States, rural arterial 30 HV is about 15% of ADT. Information in Table 6.1-11 indicates that during the past 10 years on US 93 at the ATR, the 30th HV has averaged approximately ~~12.9~~12.6% of the ADT. In communities such as Arlee, Pablo, Ronan and Polson, the percentage that 30 HV is of ADT is generally lower because of a higher volume of local passenger vehicles. Using various traffic counts and references, a factor of 10.7% is estimated in these communities.

Figure 6.1-2 shows the ~~1991~~1994 ADT and 30 HV at various count locations. Table 6.1-12 demonstrates the change in traffic volumes by day and by hour for one week in July and August 199~~1~~. The highest-hourly traffic volumes occurred during the afternoon and early-evening.

Table 6.1-13 demonstrates the change in traffic volumes by month and by day of the week as recorded by the ATR during one year. This information indicates that during five months (May, June, July, August and September), traffic volumes are above annual average. During these five months, Friday is generally the busiest day followed by Saturday and Sunday.

Table 6.1-14 indicates, by percentage, the counties and states from which vehicles originate.[19]

Based on counts conducted by MDT during the years 1989 to 1991, it is estimated the percentage of trucks in the traffic stream is approximately 13.7% for sections of the highway south of MTS~~FAS~~ 212 at Milepost 42.1 and 10% for sections north of MTS~~FAS~~ 212.

6.1.5. Level-of-Service and Capacity Concepts and Criteria

An analysis of LOS and capacity has been conducted for the existing two-lane highway facility using methods outlined in the ~~1985~~1994 Highway Capacity Manual[20] and design-hourly volume described in the previous section.

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream and the perception by motorists and/or passengers of those conditions. There are six categories of LOS for a given facility segment or intersection. These levels are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

The following paragraphs provide a general description of each LOS category for two-lane, two-way rural highways.

> The highest quality of traffic service occurs when motorists are able to drive at their desired speed. Without strict enforcement, this highest quality, representative of *LOS A,* will result in average speeds approaching 60 mph on two-lane highways. The passing frequency required to maintain these speeds has

[19]Morrison-Maierle, U.S. Highway 93 Origin-Destination Studies, July 1992.

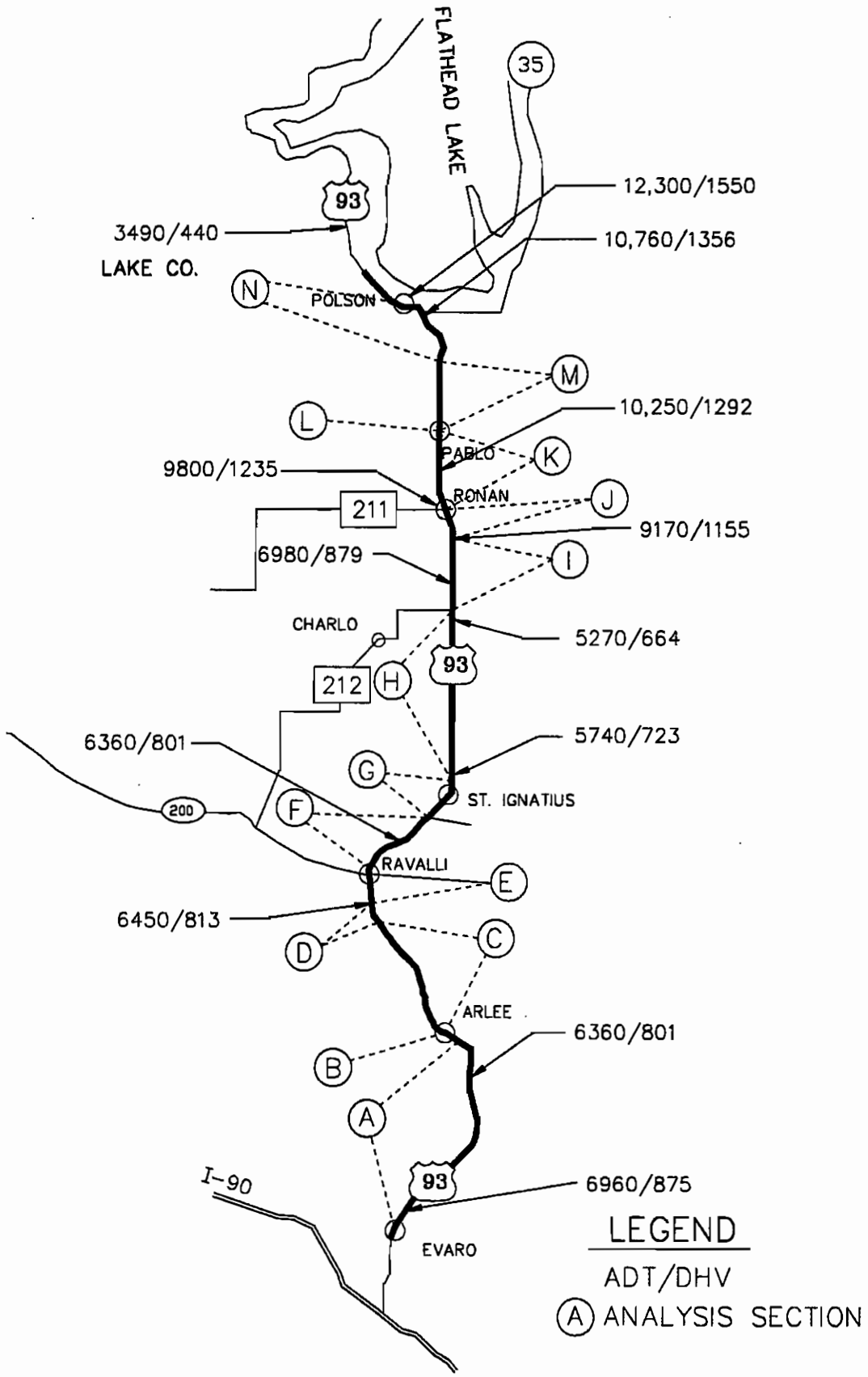
[20]Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, ~~1985~~1994.

not reached a demanding level. Passing demand is well below passing capacity, and almost no platoons of three or more vehicles are observed. Drivers are delayed no more than 30% of the time by slow-moving vehicles.

Table 6.1-11 ADT and 30 HV at Automatic Recorder South of Ravalli
This table has been revised in the final EIS using traffic volumes for the year 1994.

Year	A.D.T.	30th Highest Hour	
		Volume	Percent
1941	850	150	17.6
1951	1360	220	16.2
1961	1810	270	14.9
1971	2920	410	14.0
1981	3930	520	13.2
1982	3910	540	13.8
1983	4340	570	13.1
1984	4440	550	12.4
1985	4300	570	13.3
1986	4570	590	12.9
1987	4910	610	12.4
1988	5070	650	12.7
1989	5120	650	12.7
1990	5280	670	12.7
1991	5180	650	12.5
1992	5810	750	12.8
1993	6110	770	12.6
1994	6450	780	12.2

Montana Department of Transportation. Traffic Records.



1994 ADT & DHV

FIGURE 6.1-2

Table 6.1-12 Traffic Volume By Day & Hour, One Week In July and August, ~~1991~~1994

Hour	Sunday 7/28	Monday 7/29	Tuesday 7/30	Wednesday 7/31	Thursday 8/01	Friday 8/02	Saturday 8/03
1am	100	60	50	60	60	60	90
2am	70	30	40	20	30	50	80
3am	50	30	30	20	20	20	40
4am	30	30	30	30	30	30	30
5am	30	30	30	20	40	30	30
6am	40	80	60	50	60	60	50
7am	60	150	130	140	130	130	90
8am	110	300	270	290	280	270	170
9am	230	340	330	380	310	310	280
10am	350	430	430	420	460	500	440
11am	450	500	480	470	550	520	560
12pm	540	530	510	490	510	540	590
1pm	530	550	430	440	540	560	540
2pm	560	470	470	470	510	580	540
3pm	570	440	460	470	560	650	520
4pm	550	450	430	500	580	590	520
5pm	570	500	490	500	520	640	470
6pm	620	470	490	500	550	700	450
7pm	590	390	350	380	460	580	400
8pm	520	280	270	260	290	500	350
9pm	460	200	200	250	240	400	300
10pm	350	190	180	200	210	290	290
11pm	210	140	130	160	140	220	200
12am	110	100	90	90	80	130	180
Totals	7700	6690	6380	6610	7160	8360	7210

Montana Department of Transportation. Traffic Records System. ~~1987-91~~1990-1994.

This table has been revised in the final EIS using traffic volumes for the year 1994.

LOS B characterizes the region of traffic flow wherein speeds of 55 mph or slightly higher are expected on level terrain. Passing demand needed to maintain desired speeds becomes important and approximately equals the passing capacity at the lower boundary of LOS B. Drivers are delayed up to 45% of the time on the average.

Further increases in flow characterize *LOS C*, resulting in noticeable increases in platoon formation, platoon size, and frequency of passing impediment. Average speed still exceeds 52 mph on level terrain, even though unrestricted passing demand exceeds passing capacity. At higher volume levels, chaining of platoons and major reductions in passing capacity begin to occur. While traffic flow is stable, it is becoming susceptible to congestion due to turning traffic and slow-moving vehicles. Percent time delays are up to 60%.

Unstable traffic flow is approached as traffic flows enter *LOS D*. The two opposing traffic streams essentially begin to operate separately at higher volume levels, as passing becomes difficult. Passing demand is high, while passing capacity approaches zero. Mean platoon sizes of five to 10 vehicles are common, although speeds of 50 mph can still be maintained under ideal conditions.

Table 6.1-13 Ravalli Automatic Recorder Data By Month and Day Of Week, 1991~~4~~

Month	Average Daily Number Of Vehicles							Average Day
	Day of Week							
	Sun	Mon	Tue	Wed	Thu	Fri	Sat	
JAN	3710	4580	4780	4820	4930	5650	4380	4650
FEB	4230	4670	4530	4550	4970	5730	5030	4820
MAR	5290	5140	5350	5450	5780	6490	6370	5680
APR	5600	5670	5630	5800	6060	7060	6550	6100
MAY	6360	6380	6240	6240	6490	7790	7190	6640
JUN	7510	7210	7170	7240	7600	8560	7510	7540
JUL	9290	8850	8490	8340	8690	10320	9260	9090
AUG	8990	8460	7960	8130	8700	9740	8770	8630
SEP	6900	7050	6740	6740	7170	8430	7990	7320
OCT	5690	5780	6070	6320	6380	7460	6400	6270
NOV	4790	5160	5520	5810	5390	6230	5270	5470
DEC	3970	5300	5160	5390	5620	6010	4910	5220
Average	6030	6190	6140	6240	6480	7460	6640	6450

Montana Department of Transportation. Traffic Records System. 1941-1990~~4~~.

This table has been revised in the final EIS using traffic volumes for the year 1994.

Table 6.1-14 Traffic By Geographic Origin

County/State	Percent of Vehicles Counted -- U.S. Highway 93 Intersections (July 1992)				
	Interstate 90	Montana 200	MTS 212	Montana 35	Totals
Lake	20.2	30.3	42.3	53.6	38.5
Missoula	35.9	22.7	14.4	12.4	20.5
Flathead	5.0	5.9	5.2	5.0	5.2
Sanders	3.5	1.6	1.6	1.0	1.9
Ravalli	2.5	1.6	1.3	1.0	1.5
Glacier/Lincoln	0.9	0.7	0.3	0.4	0.6
Other Montana	6.8	6.6	10.9	6.5	7.7
Canada	2.0	3.9	2.4	1.7	2.3
Other States	23.2	26.7	21.4	18.4	21.8
Total Vehicles Counted[1]	4,510	3,218	4,551	6,017	18,296

Morrison-Maierle. License Plate Classification Study. August 1993.
[1] Total vehicles do not include semi-trucks for which licenses are not registered by county.

The fraction of no passing zones along the roadway section usually has little influence on passing. Turning vehicles and/or roadside distractions cause major shock-waves in the traffic stream. The percentage of time motorists are delayed approaches 75%.

LOS E is defined as traffic flow conditions on two-lane highways having a percent time delay of greater than 75%. Under ideal conditions, speeds will drop below 50 mph. Average travel speeds on highways with less than ideal conditions will be slower, as low as 25 mph on sustained upgrades. Passing is virtually impossible under LOS E conditions, and platooning becomes intense when slower vehicles or other interruptions are encountered.

LOS F represents heavily congested flow with traffic demand exceeding capacity. Operations are characterized by stop and go waves and flow is unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion.

LOS E represents the capacity of the highway. As traffic demand exceeds the capacity (LOS E), congestion and unstable conditions occur and the flow rate on the highway decreases (LOS F).

In rural areas, desirable operation is defined as LOS B or better. In communities such as Arlee, Ronan, Pablo and Polson desirable operation is defined as LOS C or better.[21]

A major problem with two-lane highway operations involves the amount of time spent in a platoon behind slow moving vehicles unable to pass. Inability to pass leads to driver frustration and unsafe passing maneuvers. The amount of time spent in platoons rises rapidly as traffic volume increases, because the demand for passing maneuvers increases, while ability to pass decreases. This increases delay for vehicles traveling the highway.

On a multi-lane facility (four-lanes or more), vehicles traveling the highway have more than one lane in each direction so that slower moving vehicles can be overtaken and passed without entering opposing traffic lanes. Traffic in opposing directions operates independently on multi-lane highways. As a result of these differences, the service flow volume and capacity are generally several-times higher on a four-lane highway as compared with a two-lane highway.

When the highway crosses through a developed area or town, the roadway capacity is typically controlled by LOS at intersections. The majority of intersections along US 93 are three- or four-legged intersections with stop-sign control on the crossing street. Intersection capacity and LOS at these intersections are measured by the amount of delay turning vehicles will expect during peak hour conditions. Additionally, a number of intersections within the developed areas are signalized. The roadway capacity/LOS is again measured at the intersection, with respect to the amount of delay incurred by vehicles.

6.1.6. Existing Level-of-Service and Capacity

Results of the LOS analysis for the existing two-lane highway are summarized in Table 6.1-15 and indicate the existing highway is generally operating at LOS D and E.

As explained in Section 6.1.5, at ~~this level of operation~~ at LOS D, passing demand is high while passing capacity is near zero. Platoons are forming in the traffic stream and the percentage of time motorists are delayed approaches 75%. At LOS E, passing is virtually impossible, platooning becomes intense and vehicles are delayed more than 75% of the time.

An analysis of LOS at various intersections along the highway also has been completed and it has been determined that all movements are currently operating at LOS A except left turns from side streets onto US 93. LOS for these left turns ranges from A to E as summarized in Table 6.1-16.

[21]American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 1990.

Table 6.1-15 1994 Operation - Existing Roadway

Segment	Level-of-Service Year 1994
A - Evaro to Arlee	E(A)*
C - Arlee to Ravalli Canyon	E
D - Ravalli Canyon to Ravalli	E
E - Ravalli	D
F - Ravalli Hill	E(A)*
G - St. Ignatius	D
H - St. Ignatius to MTS 212	D
I - MTS 212 to Ronan	D
K - Ronan to Pablo	E
L - Pablo	E
M - Pablo to Caffrey Road	E
N - Caffrey Road to MT 35	E(A)*

*Level-of-service overall(in direction of passing lane)

This table has been revised in the final EIS using traffic volumes for the year 1994.

Table 6.1-16 1991~~4~~ Intersection Operation - Existing Roadway

Intersection	Peak Hour Level-Of-Service*
B Street, Arlee (Butch Larsen/Taelman St.)	A
MT 200, Ravalli	B
Main Access to St. Ignatius	B
MTS 212	C
MTS 211, Ronan**	B**
Division Street, Pablo	C
Clairmont Road, Pablo	C
Old U.S. 93, North of Pablo	C
MT 35, Polson**	E*/C***
Unsignalized Streets in Polson	E*/B***
First Street East in Polson** ~~Signalized~~	B

Morrison-Maierle, 1993
* Left turns from side streets onto U.S. Highway 93. ** Traffic signal currently in operation.
*** Left turn from U.S. Highway 93

This table has been revised in the final EIS using traffic volumes for the year 1994.

6.2. LAND USE

6.2.1. Land Use Plans

Lake County has a general plan, and Missoula County has a comprehensive plan to guide land use and development.[22,23] The Confederated Salish and Kootenai Tribes ~~are preparing, but have not yet adopted,~~ have adopted a comprehensive natural resource plan for protection and development of land-related resources.

CSKT, Lake County and Missoula County have not established zoning regulations in the area of US 93 from Evaro through Polson.

The city of Polson, which is a separate planning unit, is the only community in the area that has an urban comprehensive plan and zoning regulations. Polson's comprehensive plan was revised in 1993. The city of Ronan and the town of St. Ignatius also have zoning regulations, but no comprehensive plans. Ronan has been developing a comprehensive plan since~~began to develop a comprehensive plan in~~ late-1993.[24]

6.2.2. Intergovernmental Cooperation for Land Use Planning

CSKT, in cooperation with Lake and Missoula counties, is preparing a land use and growth projection study that will provide more detailed information about the area served by US 93. Results of the study should be available for future planning activities, such as developing an access control plan for the proposed action.~~the final environmental impact statement (EIS).~~ CSKT and Missoula County have a memorandum of agreement (MOA) regarding land use planning and resource management concerns for the portion of Missoula County that lies within the Flathead Indian Reservation.

6.2.3. Pattern of Land Use

~~#### 6.2.3.1. Lake County~~

~~The proposed action is in the south county area and city of Polson planning units. In 1988 approximately 50% of Lake County's 1,656 square miles (1.1 million acres) was forest land, 33% was agricultural land, and two percent was built development area.[25] (Table 6.2-1)~~

The Confederated Salish and Kootenai Tribes have divided the reservation into planning units called study areas. Three of the study areas, Jocko Valley, Mission Valley and Polson-Elmo cover the general area of the proposed action.[26] (Figure 6.2-1)

Table 6.2-1 shows land use for the Jocko Valley, Mission Valley and Polson-Elmo study areas. This information provides a general indication of patterns of land use for the area affected by the proposed action.

~~#### 6.2.3.2. Missoula County~~

~~Approximately 8.5 miles of the southern end of the proposed action is located in northern Missoula County. This area of Missoula County is rural and includes the small, unincorporated community of Evaro. Land is mostly~~

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[22]Lake County General Plan. 1988.
[23]Missoula County Comprehensive Plan. 1975.
[24]Montana Code Annotated. 76-2-310.
~~[25]Lake County General Plan. 1988.~~
[26]Confederated Salish and Kootenai Tribes. *Flathead Reservation Comprehensive Resources Plan* (November 1994). Page 6-2.

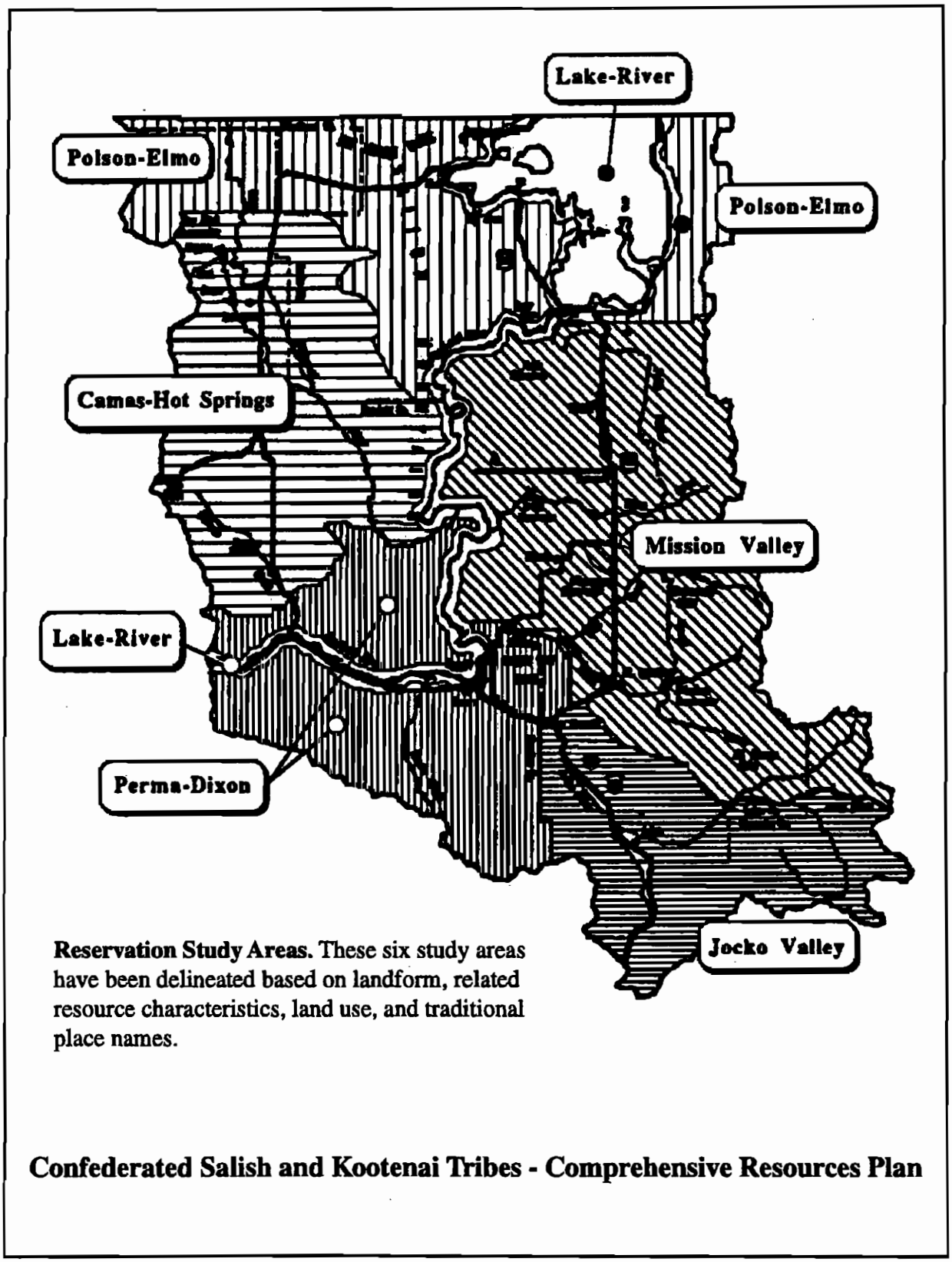

Figure 6.2-1 Flathead Indian Reservation Study Areas
This figure has been added in the final EIS using information for the Flathead Indian Reservation.

Table 6.2-1 Land Use for Jocko Valley, Mission Valley and Jocko Valley Study Areas

Land Use	Area (Acres)	Percent of Total Land Area (%)
Jocko Valley Study Area		
Irrigated Cropland	8,307	5%
Non-irrigated Cropland	760	1%
Rangeland	20,203	13%
Primitive Area (forested)	59,169	27%
Forest	57,261	47%
Rural and Suburban	9,755	6%
Urban and Built-Up	321	<1%
Mission Valley Study Area		
Irrigated Cropland	102,900	30%
Non-irrigated Cropland	91,778	27%
Rangeland	59,916	17%
Mission Mountains Wilderness	48,425	14%
Forest (excluding wilderness)	22,541	7%
Rural and Suburban	15,360	4%
Urban and Built-Up	3,878	1%
Water (major reservoirs)	1,519	<1%
Polson-Elmo Study Area		
Irrigated Cropland	856	<1%
Non-irrigated Cropland	13,003	6%
Rangeland	79,678	35%
Forest	119,492	53%
Rural and Suburban	12,225	>5%
Urban and Built-Up	821	<1%

SOURCE: Confederated Salish and Kootenai Tribes. Flathead Reservation Comprehensive Resources Plan. November 1994. Pages 6-6 through 6-15.
This table has been revised in the final EIS using information for the Flathead Indian Reservation.

~~forested with some agricultural valley bottom lands. As with Lake County and other parts of Missoula County, scattered residential development is increasing throughout forested and open areas.~~

6.2.3.3. Flathead Indian Reservation

US 93 is located in the eastern part of the Flathead Indian Reservation, and it spans approximately three-quarters of the north-south distance of the reservation. Overall, the reservation has 1,938 square miles of land (1.24 million acres) and covers parts of four counties in an area that is roughly 60 miles long and 40 miles wide: Lake (1,012 sq. mi.), Missoula (162 sq. mi.), Sanders (718 sq. mi.) and Flathead (47 sq. mi.). The south half of Flathead Lake also lies within the reservation.[27]

The Confederated Salish and Kootenai Tribes own the majority of land on the Flathead Indian Reservation. There also are hundreds of allotments owned in whole or in part by individuals and the Tribes. Generally, an allotment is a parcel of land assigned to a tribal member as a result of the Flathead Allotment Act in 1908 or 1920, or since inherited or purchased by a tribal member(s). Fee land is land that is not in trust status, nor is it owned by tribal, federal, state or local governments.[28]

The land base of the Confederated Salish and Kootenai Tribes encompasses the majority of forest resources and a substantial portion of the agricultural resources of the reservation. The Tribes administer more than 320,000 acres of rangelands and 62,000 acres of pasture lands. They control a much smaller portion of the cropland, about 10% of acreage irrigated by the Flathead Agency Irrigation Division is tribal or allotted trust lands. Tribal land is the dominant source of timber for the local forest products industry, with almost 46% of timber harvested in Lake County in 1988 being from tribal lands.[29]

The Flathead Indian Reservation has a variety of landforms that support a diversity of ecosystems:[30]

- Forested mountain ranges
- Low, broad valleys
- Drier prairies, having only sparse vegetation
- High and low elevation forested hills with wet and dry vegetation
- Rocky buttes, with shrub and grass communities
- Rivers, streams, lakes and ponds, with companion wetlands and riparian habitats
- Glaciers, surrounded by rock and alpine tundra

The Flathead and Lolo national forests, Burlington Northern and Champion International private timber holdings, individual sections of state land and small parcels of private land border the reservation. Forest, agricultural land, grassland and water are the four major types of land use for the reservation. Logging, cropland development, grazing, irrigation and other land uses have substantially altered the native vegetation.[31]

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[27]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1990.
[28]Ibid. Page 2-13 and 2-14.
[29]Ibid. Page 4-6.
[30]Ibid. Page 2-2.
[31]Ibid. Pages 2-2 and 2-12.

6.2.3.4. US 93

Land use adjacent to the highway is predominantly agricultural, interspersed with residential, commercial and industrial activities.

There is scattered residential development with 681 approaches to the highway. Commercial development outside communities is mostly highway-oriented, with lodging, gas station-convenience stores, restaurants and tourism specialty shops. (Tables 6.2-2 through 6.2-5)

Land use in communities combines residential, commercial, industrial and open areas with recreation facilities. Agricultural lands are located adjacent to municipal boundaries. Government and school property in Pablo is adjacent to the existing alignment of the highway. Open space used for recreation is adjacent to the highway at St. Ignatius and Ronan. A senior citizen's center is adjacent to the existing alignment in Ronan. Church property is adjacent to the existing alignment of the highway in Arlee, Ravalli, Ronan and Polson. Church property and a residential center for senior citizens is adjacent to the alignment alternative for a one-way couplet in Ronan. A railroad line generally runs parallel to the highway in some areas. (Section 6.4)

At the southern end of the proposed action, land is mountainous and forested, with some agricultural valley-bottom lands. There is abundant wildlife habitat. There is scattered residential development with numerous approaches to the highway. The Evaro and Schley areas are the largest residential developments, and individual homesites are located throughout the area. A one mile segment of land along US 93 south of Schley, which CSKT manages as a wildlife corridor, is the only segment of undeveloped land in the area. Approximately 8.5 miles of the southern end of the proposed action is located in northern Missoula County. This area of Missoula County is rural and includes the small, unincorporated community of Evaro. As with Lake County and other parts of Missoula County, scattered residential development is increasing throughout forested and open areas.

The middle part of the proposed action, between Arlee and Ronan, is mostly open agricultural land with areas of rolling hills. There is a lumber mill and some commercial development adjacent to the highway in the Post Creek area. The National Bison Range is adjacent to the highway north of Ravalli. The Ninepipe National Wildlife Refuge also is adjacent to the highway and provides extensive open space for wildlife and recreation south of Ronan.

The northern part of the proposed action, between Ronan and Polson, has open and forested land, with areas of rolling hills. A lumber mill at Pablo and a concrete plant at Polson create the heaviest concentration of industrial activity, with commercial strip development scattered between the two communities. ~~Lumber mills at Pablo and Polson create the heaviest concentration of industrial activity.~~ (Figure 6.2-2)

6.2.3.5. Communities: Arlee, Ronan and Polson

Land use in the Arlee area is influenced by US 93 and agricultural development of the Jocko Valley. US 93 has commercial and scattered residential development on the route through the town. Areas east and west of Arlee include open agricultural land and vacant land with scattered, rural residential development. The schools, powwow and rodeo grounds, a ballfield and a state fish hatchery are located on the east edge of Arlee. (Table 6.2-3)

US 93 and the forested slopes extending from the Mission Mountains into the Mission Valley influence land use in the Ronan area. US 93 has commercial and residential development along its route through Ronan. The highway has become an extension of the original central business district (CBD). (Table 6.2-3)

Table 6.2-2 Percent of Land Use* Based on Miles of Highway Right-of-Way Frontages: Existing Alignment

Highway Segment on Existing Alignment	Milepost	Forestland (%)	Rockland (%)	Agricultural Land (%)	Water/ Wetland (%)	Wildlife Refuge/ Recreation[2] (%)	Railroad Right-Of-Way[2] (%)	Built Development			TOTAL (%)**
								Commercial/ Industrial (%)	Residential (%)	Total (%)	
		Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
A: Evaro to Arlee	6.5 - 16.7	44	5.5	47	0	0	13	3	.5	3.5	100
B: Arlee[3]	16.7 - 18.2	0	0	63	0	0	0	27	10	37	100
C: Arlee to Ravalli Canyon	18.2 - 24.7	0	0	84	10	0	42	0	6	6	100
D: Ravalli Canyon to Ravalli	24.7 - 26.5	2.5	27.5	5	65	0	50	0	0	0	100
E: Ravalli	26.5 - 27.5	0	11	11	28	0	39	6	44	50	100
F: Ravalli Hill	27.5 - 31.2	0	46	46	7	28	0	0	1	1	100
G: St. Ignatius	31.2 - 33.5	4	8	84	0	0	0	0	4	4	100
H: St. Ignatius to MTS 212	33.5 - 42.1	0	4	71	24	6	0	1	0	1	100
I: MTS 212 to Ronan	42.1 - 46.1	0	0	45	53	0	0	2	0	2	100
J: Ronan[3]	46.1 - 47.6	0	0	30	0	0	0	53	17	70	100
K: Ronan to Pablo	47.6 - 50.8	0	9	81	6	0	0	2	2	4	100
L: Pablo	50.8 - 54.7	4	0	47	0	0	0	2	47	49	100
M: Pablo to Caffrey Road	54.7 - 56.5	0	3	67	0	0	0	19	3	21	100
N: Caffrey Road to MT 35	56.5 - 59.0	0	9	67	0	0	50	20	4	24	100
O: Polson[3]	59.0 - 61.0	0	0	0	10.5	10	4	61.5	18	79.5	100
P: Polson to End of Project	61.0 - 62.8	0	0	15	22	0	0	37	26	63	100
TOTAL: Existing Alignment		9	7	55	13	.5	11	8	7.5	15.5	100

Morrison-Maierle 1993. [1] Total is for east and west sides of the highway. [2] Underlined percentages represent types of land use that have a relatively narrow strip of direct highway frontage, but which are not the dominant land use in the corridor extending away from the highway. They are counted in other types of land use. [3] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. Refer to Table 6.2-3 for land use along the existing alignment that is adjusted to the lengths of the longest alternate highway alignments for each of the communities. * Dominant land use extending away from the highway. ** Totals do not include underlined percentages.

Table 6.2-3 Land Use: Arlee, Ronan and Polson Alignments

Highway Segment and Alignment Alternatives	Milepost	Forest-land (%)	Rockland (%)	Agricultural Land (%)	Water/ Wetlands (%)	Wildlife Refuge/ Recreation (%)	Railroad Right-Of-Way[3] (%)	Built Development			TOTAL (%)**
								Commercial/ Industrial (%)	Residential[3] (%)	Total (%)	
		Total[1]	Total	Total	Total	Total	Total	Total	Total	Total	Total
B: Arlee[4]											
Existing Alignment #1	15.0 - 22.4	0	1	80	4	0	24	11	4	15	100
West Alignment #2	15.0 - 22.4	0	1	94	2	0	4	3	4	3	100
East Alignment #3	15.0 - 22.4	0	1	88[2]	4	1[2]	23	6	0	6	100
Jocko Valley Align. #4	15.0 - 22.4	0	0	84	16	0	0	0	0	0	100
J: Ronan[4]											
Existing Alignment #1	45.1 - 48.8	0	0	72	0	0	0	23	5	28	100
One-Way Couplet #2	45.1 - 48.8	0	0	75	0	0	0	19	6	25	100
West Alignment #3	45.1 - 48.8	0	0	93	3	0	0	1	3	4	100
West Alignment #4	45.1 - 49.0	0	0	97	0	0	8	3	0	3	100
O: Polson[4]											
Existing Alignment #1	56.5 - 62.8	0	3	32	10	3	22	37	15	52	100
Alignment #2	56.5 - 62.8	0	0	71	5	5	0	4	15	19	100
Alignment #3	56.5 - 62.8	0	3	83	3	2	0	0	9	9	100

Morrison-Maierle. 1993. [1] Total is for east and west sides of highway. [2] Includes 0.1 miles for recreation. [3] Underlined percentages represent types of land use that have a relatively narrow strip of direct highway frontage, but which are not the dominant land use in the corridor extending away from the highway. They are counted in other types of land use. [4] Land use is for the length of roadway along each alignment, beginning at the southern end of the longest alignment. * Dominant land use extending away from the highway. **Totals do not include underlined percentages.

Table 6.2-4 Highway Approaches To Highway Right-Of-Way Frontage: Existing Alignment

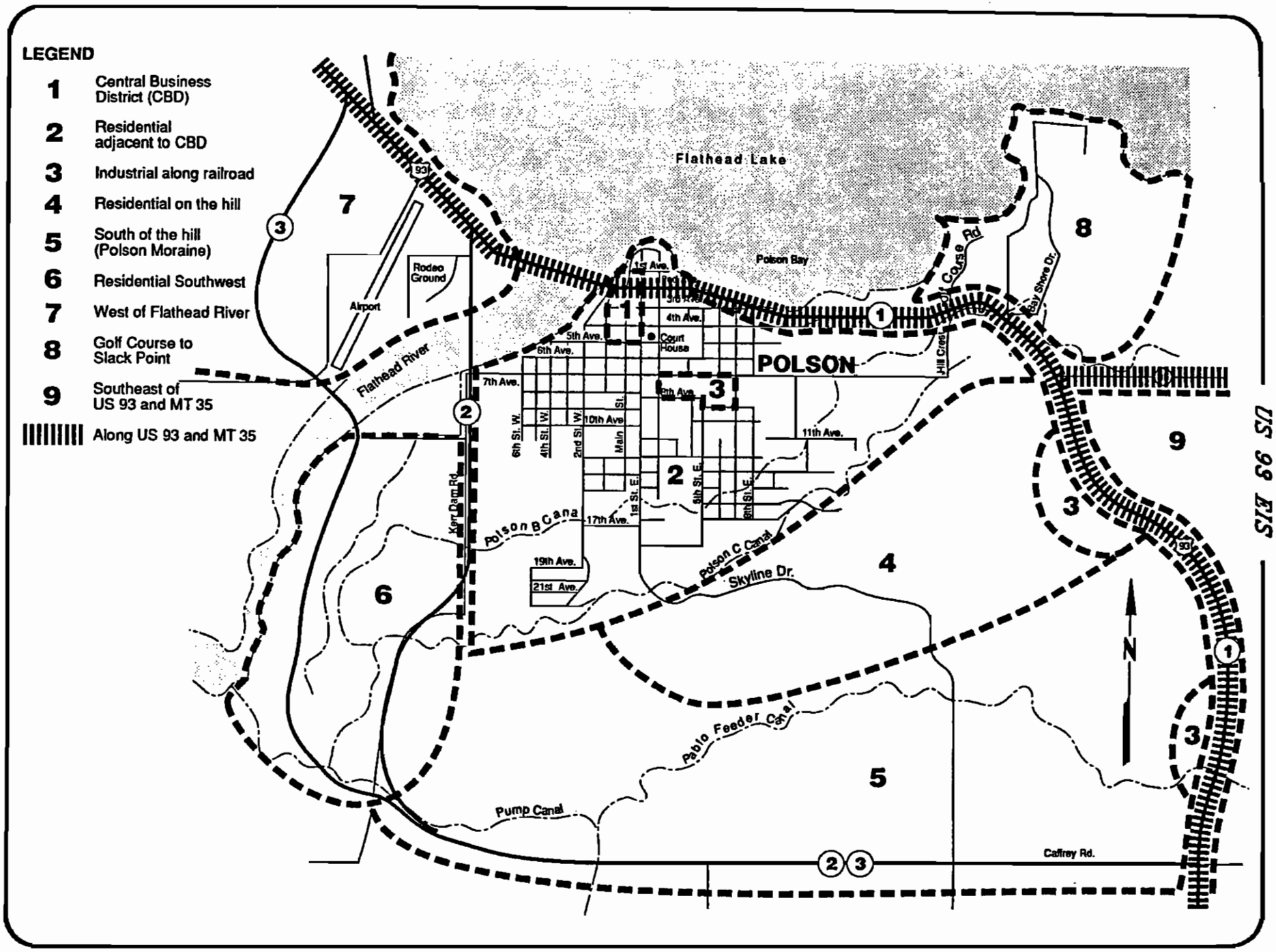
Highway Segment on Existing Alignment	Milepost	Residential	Commercial/ Industrial	County Road	State Highway	Trail/ Service Road	Field Approaches	Railroad Access	Public Use[3]	Turnouts[4]	City Streets	TOTAL
		Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
A: Evaro to Arlee	6.5 - 16.7	61	12	19	0	2	12	0	4	8	0	118
B: Arlee[2]	16.7 - 18.2	10	2	4	1	0	1	0	0	1	8	27
C: Arlee to Ravalli Canyon	18.2 - 24.7	10	7	8	0	0	5	2	0	6	0	38
D: Ravalli Canyon to Ravalli	24.7 - 26.5	3	0	1	0	1	3	2	0	3	0	13
E: Ravalli	26.5 - 27.5	0	0	0	0	0	0	0	0	0	0	0
F: Ravalli Hill	27.5 - 31.2	3	0	2	1	0	5	0	4	3	0	18
G: St. Ignatius	31.2 - 33.5	6	3	2	1	0	3	0	1	0	0	16
H: St. Ignatius to MTS 212	33.5 - 42.1	36	10	12	0	2	50	0	3	3	0	116
I: MTS 212 to Ronan	42.1 - 46.1	16	5	6	1	0	12	0	3	1	0	44
J: Ronan[2]	46.1 - 47.6	1	20	0	2	0	4	0	0	0	12	39
K: Ronan to Pablo	47.6 - 50.8	8	0	6	0	0	23	0	0	0	0	37
L: Pablo	50.8 - 54.7	23	9	9	0	0	11	0	2	0	5	59
M: Pablo to Caffrey Road	54.7 - 56.5	5	8	6	0	1	6	0	0	2	0	28
N: Caffrey Road to MT 35	56.5 - 59.0	2	6	2	0	0	2	0	0	2	0	14
O: Polson[2]	59.0 - 61.0	29	50	1	1	1	0	0	2	2	14	100
P: Polson to End of Project	61.0 - 62.8	5	5	3	0	1	0	0	0	0	0	14
TOTAL: Existing Alignment		218	137	81	7	8	137	4	19	31	39	681

Morrison-Maierle. 1993. [1] Total is for east and west sides of the highway. [2] Approaches for Arlee, Ronan and Polson are within the developed areas along the existing alignment. Refer to Table 6.2-5 for approaches along the existing alignment that are adjusted to the lengths of the longest alternate highway alignments for each of the communities.

Table 6.2-5 Approaches: Arlee, Ronan and Polson Alignments

Highway Segment and Alignment Alternative:	Milepost	Residential	Commercial/ Industrial	County Road	State Highway	Trail/ Service Road	Field Approaches	Railroad Access	Public Use[2]	Turn-outs[3]	City Streets	TOTAL
		Total[1]	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
B: Arlee[4]												
Existing Alignment #1	15.0 - 22.4	21	12	17	1	0	6	1	0	6	8	72
West Alignment #2	15.0 - 22.4	12	7	17	0	0	15	1	0	4	0	56
East Alignment #3	15.0 - 22.4	17	7	15	1	0	8	1	2	4	0	55
Jocko Valley Align. #4	15.0 - 22.4	11	0	12	0	0	40	0	0	0	0	63
J: Ronan[4]												
Existing Alignment #1	45.1 - 48.8	7	18	6	2	0	13	0	2	1	12	61
One-Way Couplet #2	45.1 - 48.8	9	5	6	2	0	18	0	1	1	13	55
West Alignment #3	45.1 - 48.8	9	4	5	2	0	15	0	0	1	3	39
West Alignment #4	45.1 - 49.0	8	2	6	2	1	6	2	1	0	2	30
O: Polson[4]												
Existing Alignment #1	56.5 - 62.8	36	61	6	1	2	2	0	2	4	14	128
Alignment #2	56.5 - 62.8	29	1	7	0	5	7	2	2	0	0	53
Alignment #3	56.5 - 62.8	10	1	9	0	13	12	2	0	0	0	47

Morrison-Maierle. 1993. [1] Total is for east and west sides of the highway. [2] Public use includes picnic, camping, and rest areas. [3] Turnouts include historic/scenic, school bus, mail, and recreation. [4] Land use is for the length of roadway along each alignment, beginning at the southern end of the longest alignment.



LAND USE IN THE POLSON AREA

FIGURE 6.2-2

US 93 EIS

Residential development extends east, south and west of the CBD. Schools are located adjacent to the north side of the CBD, and the hospital is located in the residential area west of the CBD. West of Ronan there is open land use with a wastewater treatment facility, ballfield and scattered residential and industrial development.

Land use in the Polson area is influenced primarily by Flathead Lake and River, the hills to the south, MRL, US 93 and MT 35. Commercial, residential and agricultural land use are the major forms of development. (Figure 6.2-~~12~~ and Table 6.2-3)

US 93 has commercial development along the route between its intersection with MT 35 and the downtown CBD. The municipal golf course and waterfront property, which includes multi-unit senior citizen housing, is adjacent to the highway east of the CBD. Residential development with medium density (four to eight dwelling units per acre) extends east, south and west of the CBD. Schools are located adjacent to the east side of the CBD, and schools and the hospital are located in the residential area southwest of the CBD.

Land use is primarily agricultural south of the hills in the Polson Moraine, and residential development with low density (one to four dwelling units per acre) occurs in the hills southwest of Polson. West of Polson, between the Flathead River and the residential area adjacent to the CBD, there is open land use with a wastewater treatment facility, ballfield and scattered residential and industrial development.

The municipal airport and rodeo grounds are adjacent to the west side of the river. West of the river there is scattered commercial and low-density residential development mixed with vacant and agricultural land.

6.2.3.6. Confederated Salish and Kootenai Tribes Policies and Objectives for Management of Land and Resources

The Confederated Salish and Kootenai Tribes have developed a set of policies and objectives to manage land and resources of the Flathead Indian Reservation. The *Flathead Reservation Comprehensive Resources Plan* identifies the resources and major goals:[32]

Air: Maintain the clean, Class I air quality status of the reservation.

Water: Protect and enhance the quality and quantity of reservation water resources.

Fisheries: Foster and maintain wild, self-sustaining fish populations to meet cultural, subsistence and recreational needs.

Wildlife: Manage wildlife resources and habitats for viable populations of all wildlife species.

Forest: Enhance forest values and maintain a perpetual source of forest resources and opportunities.

Range: Enhance and maintain multiple range resource values and opportunities.

Agriculture: Manage agricultural resources for sustainable levels of production that are environmentally sound, economically viable and socially acceptable.

Minerals and Energy: Wise use of mineral and energy resources, with appropriate environmental safeguards and cultural protection.

[32]The Confederated Salish and Kootenai Tribes. The Flathead Reservation Comprehensive Resources Plan. Volume II. Policies. November 1994.

Wilderness and Primitive Areas: Preserve specially designated areas for cultural, spiritual and recreational pursuits.

Land-Based Cultural Resources: Preserve and perpetuate tribal histories, cultures and languages.

Recreation and Scenic Areas: Protect and promote the recreational resources of the Confederated Salish and Kootenai Tribes.

Residential Areas: Encourage housing development and maintenance that considers human resource values while protecting natural resource qualities and minimizing effects for community infrastructure.

Commercial and Industrial Areas: Provide areas for commercial and industrial development that are easily accessible but minimally affect infrastructure and the surrounding environment.

Transportation, Communication and Utilities: Promote a transportation system, communications network and utility infrastructure that support existing and potential resource development and use and that is consistent with the protection of cultural and natural resources.

Government and Institutional Facilities: Provide government facilities/services that ensure protection of public health, welfare and safety and the environment and that improve educational opportunities.

The Confederated Salish and Kootenai Tribes have identified major planning issues, some of which concern these resources and the proposed action in the Jocko Valley, the Mission Valley and the Polson-Elmo study areas:[33]

- Water issues, which include the protection of groundwater and surface water from pollution.
- The effects of Missoula's suburban sprawl on infrastructure, farmland, air and water quality, cultural resources, and wildlife.
- Strip development along US 93.
- Rural residential growth.
- Effects on wildlife travel corridors from residential and highway development.
- Lack of public fishing access on major streams in the Jocko and Mission valleys.
- Tribal-federal-state interagency cooperation.

6.2.3.7. Major Land Use Considerations

A community opinion survey conducted as a part of the Lake County General Plan (1988), identified agriculture, US 93, floodplain development, wildlife and community growth as the major land use considerations in the south county planning area.[34]

[33]Confederated Salish and Kootenai Tribes. Flathead Reservation Comprehensive Resources Plan. November 1994. Pages 6-6 through 6-15.
[34]Lake County General Plan, July 1988.

Agriculture

Agriculture is the major resource use in Lake County, and the south county area is the principal farming area, with irrigated land that is considered prime or good by the U.S. Natural Resources~~Soil~~ Conservation Service (NRCS). Agriculture is based on irrigated forage crop production to support livestock. Agriculture also produces small grains, tree fruits, field crops, and some dairy and vegetable production. Scattered ranches and farms grow hay or grain.

Residential development that replaces production on agricultural land was a concern of local residents who responded to the community opinion survey. Most residents believe agricultural land should be protected. Residents of some areas expressed support for measures such as density guidelines on good farmland and conservation easements, which provide tax incentives to landowners in exchange for protection of land. Residents in all areas supported development of standards to protect agriculture from problems caused by residential development. There are several livestock underpasses on the existing roadway. Landowners have indicated some of these are used regularly and will continue to be needed.[35]

US 93

US 93 was a concern for respondents to the community opinion survey because of conflicts in safety, commercial development and scenic values. Most local residents were not in favor of restricting commercial development along the highway, but there was concern about "strip development" causing an undesirable pattern of growth. Generally, local residents favored control of commercial development through measures such as setbacks and design standards for building height, parking, highway signs and highway approaches.[36]

Public comment for the~~this draft~~ EIS indicates there is a need to control signage and growth of residential, commercial and industrial development outside communities. There is support for development of vacant land within communities to achieve compact, rather than scattered pattern of development. More development within communities is considered to be important for utilizing public utility systems and facilities/services, while avoiding further proliferation of individual utility systems. Public comments associate improvement of the highway with commercial strip development and residential sprawl on the edges of communities and in scattered locations between communities. Public comments also indicate there is a need to coordinate land use planning and regulation with access control and other transportation planning activities. (Chapter 10)

Floodplain Development

The Flathead and Jocko rivers, along with Post, Crow and Mission creeks, are flood hazard areas along parts of the route of US 93. Information from NRCS indicates Mud Creek, Ronan Spring Creek and Agency Creek, as well as other areas, have potential for flood hazard. Generally, residents support control of development in floodplains through measures such as locating new subdivisions outside flood hazard areas, setbacks from rivers and streams, anchoring new structures within flood hazard areas and requiring buildings to be above flood elevation of 100-year frequency.[37]

Wildlife

Wildlife habitat is intermingled with landholdings that are affected by population growth and economic development. Two 1992 surveys conducted by the CSKT Wildlife Management Program and a survey conducted by the Bureau of Indian Affairs (BIA), independent of the community opinion survey in the Lake County General Plan, found local

[35]Ibid.
[36]Ibid.
[37]Ibid.

residents support measures to protect wildlife.[38,39] ~~A poll conducted by the Bureau of Indian Affairs (BIA), independent of the community opinion survey in the Lake County General Plan, found local residents support measures to protect wildlife, especially bears.~~ Wildlife protection measures related to highway development include density guidelines to limit development in affected areas, conservation easements, which provide tax incentives to landowners in exchange for protection of habitat, and site design criteria to protect critical habitat areas.[40]

Community Growth

Most population growth has occurred in rural areas outside communities. Respondents to the community opinion survey favored locating residential, commercial and industrial development in or next to existing communities. The Lake County General Plan indicates residential development probably will continue to occur outside communities, while more commercial and industrial development will be located either in or near existing communities.

The Lake County General Plan identifies measures, which could be affected by improvement of US 93, to plan for growth and development:[41]

- Improve roads, water and sewage systems.
- Development of appearance standards to improve attractiveness of communities.
- Designate preferred areas with eased regulations for commercial and industrial development.
- Restrict or limit commercial and industrial growth in areas outside communities.

The Missoula County Comprehensive Plan identifies measures similar to those of Lake County for planning growth and development.

6.2.4. Land Status

~~In 1988 approximately 45% of land in Lake County was held in private ownership, and 31% of the land was held in tribal trust and allotment.~~[42] The pattern of land ownership of the Flathead Indian Reservation is mixed, but most tribal land is located in the forested, mountainous areas along the edges of the county. The majority of private land is located at lower elevations of the Mission and Jocko valleys, which has more economically valuable irrigated cropland and grazing land. ~~(Table 6.2-2)~~

Figure 6.2-3 identifies patterns of land ownership on the Flathead Indian Reservation in 1992.[43]

Lands with frontage on US 93 have mixed ownership among tribal, trust/allotment, private (fee), state and federal interests. Small blocks of each type of ownership are interspersed along the highway. There are concentrations of tribal ownership in the mountainous area north of Evaro, as well as the Ninepipe refuge and Kicking Horse Reservoir areas south of Ronan. State ownership is concentrated in the Ninepipe and Kicking Horse areas, and the National Bison Range is federal land. Private ownership is predominant through the remainder of the area.

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[38]Non-Indian Bird Hunters on the Flathead Reservation: Patterns of Use and Wildlife Management Scoping Issues. David Rockwell and Dale Becker. Unpublished report prepared by the Tribal Wildlife Management Program, Confederated Salish and Kootenai Tribes, Pablo, Montana, October 1992.

[39]Patterns of Use and Wildlife Management Scoping Issues: Tribal Member Hunting on the Flathead Indian Reservation. David Rockwell and Dale Becker. Unpublished report prepared by the Tribal Wildlife Management Program, Confederated Salish and Kootenai Tribes, Pablo, Montana, October 1992.

[40]The Border Grizzly Project, University of Montana. Living with the Grizzly, Perceptions of Mission Valley Residents. Frost, J.R. Prepared for Bureau of Indian Affairs, Pablo Agency. November 1984.

[41]Lake County General Plan. July 1988.

[42]Ibid.

[43]Ibid. Page 2-13.

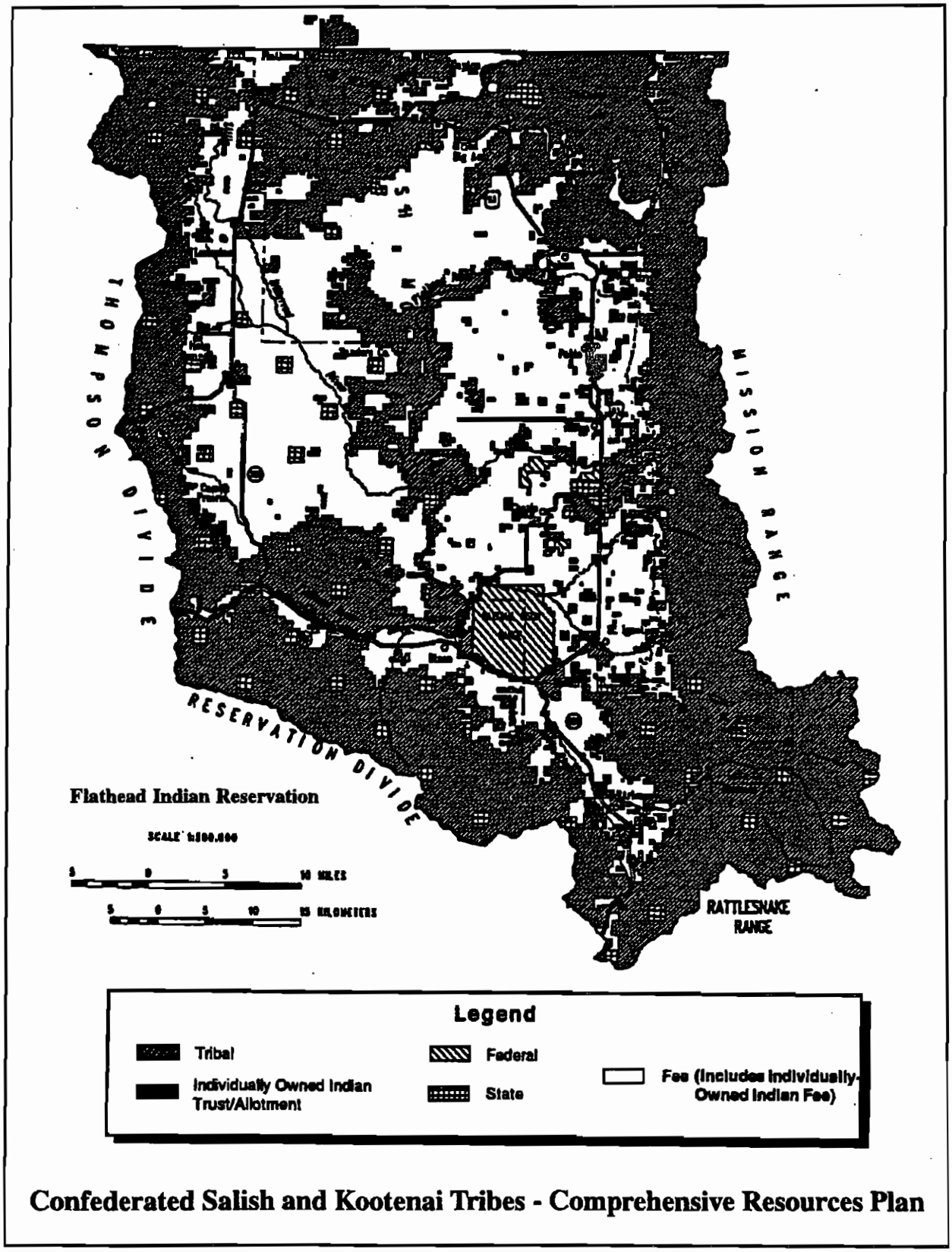

Figure 6.2-3 Land Status on the Flathead Indian Reservation (1992)
This figure has been added in the final EIS using information for the Flathead Indian Reservation.

6.2.5. Residential Development

6.2.5.1. Land Subdivision

Until 1904, all land in this area was owned in common by the Salish, Pend d'Oreilles and Kootenai tribes. The Flathead Allotment Act then forced tribal people to become enrolled and take land allotments. Amendments to the act gave several hundred acres of land to church organizations and thousands of acres to the state of Montana for school purposes. Thousands more were set aside for townsites, power reserves, the National Bison Range, general government needs and two-to-five acre lots around Flathead Lake. In spite of tribal protest, the federal government opened the Flathead Reservation to settlement in 1910.

From the early-1900s until~~Until~~ the late-1960s, land areas remained in larger blocks of 40 to 200 acres. Many of these parcels of land were originally settled under the Homestead Act. Beginning in the 1970s, land values began to increase due to outside public interest for recreation land. Many original homestead sites were subdivided, which has resulted in smaller lots and tracts of three to five acres.

Extensive subdivision of land has occurred in the area. Since 1973, 3,719 tracts have been created in Lake County. Of these, 16% were 20-40 acre tracts, 34% were occasional sales, seven percent were family transfers, and 44% were reviewed as subdivisions. There were 26,997 acres of land subdivided since 1973, of which 47% of the acreage was 20-40 acre exemptions, 28% was acreage in occasional sales, four percent was acreage in family transfers, and 20% was acreage reviewed as a subdivision.[44]

6.2.5.2. Residential Development

According to the Lake County General Plan, subdivision of land has been the major land use change in Lake County since 1970. Residential development outside communities has caused dispersed pattern of growth and reliance on individual, rather than municipal systems for facilities/services. Residential development has occurred in unincorporated communities such as Arlee and Pablo, and there has been development scattered throughout rural areas.

Between 1970 and 1990 the population density for Lake County increased from 10 to 14 persons per square mile (40%). During the same period population density for Montana increased from approximately 4.8 to 5.5 persons per square mile (15%).[45]

Ongoing growth and development in recent years has increased demand for and value of land. Total taxable value of land in Lake County increased by 46.2%, compared with a statewide increase of 13.6%, between 1990 and 1994.[46] (Table 6.2-6)

According to the U.S. Census, approximately 71% of the 10,970 housing units in Lake County were occupied in 1990. The rate of occupied housing units in Lake County is lower than the rate (85%) for the state of Montana in 1990. This is because a larger portion of Lake County's housing units are for seasonal/recreation/occasional use; they are considered to be vacant by the U.S. Census if persons who reside there have a permanent residence elsewhere. Approximately 76% of the 10,400 housing units in the Flathead Indian Reservation were occupied in 1990.[47] (Table 6.2-7)

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[44]Lake County Land Services. 1992.

[45]Bureau of Indian Affairs, Portland Area Office. Flathead Reservation Transportation Plan. September 1988.

[46]Montana Department of Revenue. Taxable Value By Class, By County. 1990-94.

[47]U.S. Department of Commerce, Bureau of the Census. 1990 Census of Population and Housing.

Table 6.2-6 Taxable Value (1990-94)

Years	Annual Rate of Growth of Total Taxable Value[1]	
	Lake County	State of Montana
1990 to 1991	6.4%	1.4%
1991 to 1992	3.0%	2.3%
1992 to 1993	27.7%	6.1%
1993 to 1994	4.5%	3.2%
Subtotal: 1990 to 1994[2]	46.2%	13.6%
Annual average: 1990 to 1994	11.5%	3.4%

State of Montana. Taxable Value by Class, by County. 1990-94.
[1]Total taxable value for Lake County increased from $28.7 million in 1990 to $41.9 million in 1994. Total taxable value for Montana increased from $1.6 billion in 1990 to $1.8 billion in 1994.
[2]Annual increments do not sum to equal the subtotal for 1990 to 1994.
This table has been added to the final EIS.

In 1990, approximately 52% of housing units in Lake County were homeowner units, 24% were rental units, and 24% were used for seasonal, recreational, occasional or migrant use. The homeowner and rental vacancy rates for Lake County were 2.2 and 9.8%, respectively. The county's homeowner vacancy rate was lower than the state's rate of 2.9%, but the county's rental vacancy rate was higher than the state's rate of 9.6%.[48] (Table 6.2-8)

According to the 1990 U.S. Census, approximately 90% of housing units in Lake County and the Flathead Indian Reservation are single family units, including mobile homes and trailers. Approximately 40% of the housing units in Lake County obtained water from a public system, and 30% of the county's housing units were connected to a public sewer system.[49] (Table 6.2-9)

CSKT has built and maintains several community water and sewer systems for homesites in areas of the Flathead Indian Reservation outside communities.

Housing units used for seasonal, recreational, and occasional use are an indication of the growth of tourism and recreation throughout the Flathead region. Between 1970 and 1990, seasonal housing units increased from 1,550 to 2,300 (48%) in Lake County. North of the proposed action, seasonal housing units in Flathead County increased from 1,680 to 2,520 (50%).[50]

Residents of Missoula and other places inside and outside Montana travel US 93 for access to seasonal housing throughout Lake and Flathead counties.

[48]Ibid.
[49]Ibid.
[50]Ibid.

Table 6.2-67 Occupied and Vacant Housing Units (1990)

Location	Total Housing Units			Vacant Housing Units			
	Total	Occupied (%)	Vacant (%)	Total	For Rent (%)	For Sale (%)	Seasonal/ Recreational/ Occasional/ Migrant/Other (%)
State of Montana	361,160	85%	15%	54,990	21%	16%	63%
Lake County	10,980	71	29	3,160	9	6	85
Polson Division[1]	4,960	64	36	1,770	6	5	89
City of Polson	1,560	90	10	160	38	18	44
Ronan Division	2,290	90	10	220	33	20	47
City of Ronan	720	90	10	70	45	20	45
Pablo CDP	500	88	12	60	45	17	38
St. Ignatius Division	1,440	88	12	170	32	15	53
Town of St. Ignatius	340	89	11	37	34	9	57
Arlee (CDP)	210	88	12	25	43	17	40
Charlo Division	500	83	17	80	16	9	75
Charlo (CDP)	160	93	7	11	55	--	45
Big Fork-Swan Rv. Division	1,790	49	51	920	4	5	91
Northern Missoula County							
Evaro Place (Off Reservation)	27	96	4	1	NA	NA	NA
Flathead Indian Reservation	10,400	76	24	2,530	11	18	71
Lake County Part	9,190	76	24	2,240	10	4	86
Missoula County Part	270	88	12	30	21	3	76
Sanders County Part	930	75	25	250	21	6	73
Flathead County Part	10	73	27	3	--	--	100

U.S. Department of Commerce Bureau of the Census; Census of Population 1970-1990. CDP is Census Designated Place. CDPs are unincorporated communities with distinct populations identified in the U.S Census. NA is Not Available. Numbers are rounded to the nearest ten. [1]Census county subdivisions are geographic areas identified by the U.S. Census for Lake County. The census county subdivisions include incorporated communities unincorporated census designated places, and other unincorporated places.

Table 6.2-78 Homeowner and Rental Occupancy (1990)

Location	Housing Units				Vacancy Rates	
	Total	Home-owner (%)	Rental (%)	Other[1] (%)	Home-owner Vacancy Rate (%)	Rental Vacancy Rate (%)
State of Montana	361,160	59%	31%	10%	2.9%	9.6%
Lake County	10,980	52	24	24	2.2	9.8
Polson Division[2]	4,960	45	23	32	2.0	7.8
City of Polson	1,560	49	46	5	2.0	8.0
Ronan Division	2,290	64	31	5	1.9	9.5
City of Ronan	720	56	38	6	3.2	9.6
Pablo CDP	500	63	33	4	2.3	15.2
St. Ignatius Division	1,440	64	29	7	1.4	12.0
Town of St. Ignatius	340	59	35	6	--	8.3
Arlee (CDP)	210	49	46	5	1.9	10.0
Charlo Division	500	66	21	13	1.2	11.7
Charlo (CDP)	160	67	26	7	--	11.4
Big Fork-Swan Rv. Division	1,790	41	13	46	4.6	15.7
Northern Missoula County						
Evaro Place (Off Reserv.)	30	85	15	NA	NA	NA
Flathead Indian Reservation	10,400	54	26	20	1.8	10.4
Lake County Part	9,190	54	26	20	1.8	9.2
Missoula County Part	270	78	19	3	0.1	18.4
Sanders County Part	930	56	27	17	2.9	20.1
Flathead County Part	10	70	10	20	--	--

U.S. Department of Commerce Bureau of the Census, Census of Population 1970-1990. CDP is Census Designated Place. CDPs are unincorporated communities with distinct populations identified in the U.S Census.
Numbers are rounded to the nearest ten. NA is Not Available. [1]Includes housing units for seasonal, recreational, occasional, and migrant use. [2]Census county subdivisions are geographic areas identified by the U.S. Census for Lake County. The census county subdivisions include incorporated communities unincorporated census designated places,and other unincorporated places.

Table 6.2-89 Type of Housing Units and Water and Sewer Facilities (1990)

Location	Type of Housing Unit			Water Systems			Sewer System	
	Total	Single Family/ Mobile Home	Multi-Family	Total	Public System/ Private Company (%)	Indiv. System/ Other Source (%)	Public System (%)	Septic Tank/ Cesspool/ Other (%)
Lake County	10,980	10,170	810	10,980	40%	60%	30%	70%
Polson Division[1]	4,960	4,450	510	4,960	43	57	34	66
City of Polson	1,560	1,130	430	1,560	98	2	99	1
Ronan Division	2,290	2,120	170	2,290	60	40	47	53
City of Ronan	720	590	130	720	99	1	98	2
Pablo CDP	500	470	30	500	60	40	45	55
St. Ignatius Division	1,440	1,370	70	1,440	32	68	28	72
Town of St. Ignatius	340	300	40	340	93	7	89	11
Arlee (CDP)	210	200	10	210	20	80	15	85
Charlo Division	500	480	20	500	26	74	22	78
Charlo (CDP)	160	140	20	160	84	16	70	30
Big Fork-Swan River Div.	1,790	1,750	40	1,790	15	85	1	99
Northern Missoula County								
Evaro Place (Off Reserv.)	30	30	--	30	--	100	--	100
Flathead Indian Reserv.	10,400	9,560	840	10,400	44	56	36	64
Lake County Part	9,190	8,420	770	9,190	44	56	35	65
Missoula County Part	270	270	--	270	5	95	2	98
Sanders County Part	930	820	110	930	56	44	54	46
Flathead County Part	10	10	--	10	--	100	--	100

U.S. Department of Commerce Bureau of the Census, Census of Population 1970-1990. CDP is Census Designated Place. CDPs are unincorporated communities with distinct populations identified in the U.S Census.
NA is Not Available.
Numbers are rounded to the nearest ten.
[1]Census county subdivisions are geographic areas identified by the U.S. Census for Lake County. The census county subdivisions include incorporated communities unincorporated census designated places,and other unincorporated places.

6.2.6. Pattern of Land Use and Development

Residential, commercial and recreational development have been the most recent major forms of new development in areas with frontage on highway ROW. KwaTaqNuk Resort, which was built by CSKT on the waterfront of Flathead Lake in Polson, is one of the larger land developments in the area ~~the largest land use development in recent years for the area.~~ New development also includes an expansion of the golf course at Polson. New commercial development in Polson includes a grocery store and a department store. The golf course and department store may cover larger land areas than KwaTaqNuk. New recreation fields adjacent to the highway have been built recently at St. Ignatius and Ronan. A new waste water treatment facility is planned adjacent to the highway at the north end of Arlee. A new furniture store was built in Ronan in 1993, and new grocery stores were built in Pablo and Ronan in 1995. ~~New grocery stores are planned for Ronan and Pablo.~~

CSKT also built the People's Center, a tribal cultural complex, ~~plans to build a cultural center~~ north of Pablo in 1995. The CSKT Housing Authority also moved north of Pablo, near Salish and Kootenai Electronics. A 60-unit housing development has been constructed east of Salish Kootenai College in Pablo. Other planned developments include expansion of the elementary school at Pablo, expansion of Salish Kootenai College, ~~a 60 unit housing development east of the college at Pablo,~~ construction of a new maintenance and operations center for Mission Valley Power at Pablo, and a recreation center near the southern edge of Arlee. A new golf course with adjacent residential development of up to 249 dwelling units is planned for Polson. The new and planned developments throughout the area are located adjacent to or near US 93.

6.3. FARMLANDS

This section is completed in accordance with the Farmland Protection Policy Act (FPPA) of 1981 which has as its purpose "to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, ...". FPPA requires that before implementing any action that will result in conversion of farmland, the effects of the action should be examined and, if there are adverse effects, action to lessen them should be considered.

Farmland, as defined by FPPA, refers to land in any of four different categories: 1) prime farmland; 2) unique farmland; 3) farmland other than prime or unique that is of statewide importance; or 4) farmland other than prime or unique that is of local importance. Farmland in these categories is referred to as FPPA farmland.

The following FPPA farmland exists in the counties in which the proposed action is located:

- In Missoula County, approximately 60,000 acres. Major crops on the FPPA farmland in the vicinity of the highway located in Missoula County (from the beginning of the proposed action near Milepost 6.5 to Dirty Corner near Milepost 15.1) include alfalfa, pasture and spring wheat.

- In Lake County, approximately 47,000 acres.[51] Major crops on the FPPA farmland in the vicinity of the highway located in Lake County (from Dirty Corner near Milepost 15.1 to the end of the proposed action northwest of Polson) include hay, potatoes and spring and winter wheat.

The location of FPPA farmland adjacent to the existing alignment and alignments under consideration is listed on Table 6.3-1. Most of the FPPA farmland that may be affected by the proposed action is located:

- In northern Missoula County between Mileposts 12 and 15 (Dirty Corner).

- East of Arlee in the area where Alignment 4 is being considered.

- West of Ronan in the area where Alignments 3 and 4 are being considered.

- West of Polson in the area where Alignment 2 and 3 are being considered.

[51]This represents the FPPA Farmland identified in soil surveys completed to-date. Not all of Lake County has been surveyed. Areas not surveyed include the Mission Mountains and the Swan Valley.

Table 6.3-1 Location of FPPA Farmland

Location (Milepost)		West or East Side of Highway	Prime Or Unique	Of State-Wide Or Local Importance
From:	To:			
Existing Alignment:				
6.5	7.2	Both		X
7.9	8.2	East		X
8.2	8.3	Both	X	
11.9	12.2	Both	X	
12.3	12.4	Both	X	
12.5	14.8	Both	X	
15.3	15.4	East	X	
47.2	47.4	Both	X	
47.6	47.9	Both	X	
48.1	48.2	Both	X	
48.3	48.4	East	X	
48.8	49.0	East	X	
49.5	49.6	Both		X
49.7	49.8	Both		X
50.0	50.1	Both		X
50.5	50.7	Both		X
55.9	56.3	Both	X	
Arlee, Alignment 4, Only:				
15.3	15.5	East	X	
18.3	18.5	Both	X	
18.6	18.8	Both	X	

Table 6.3-1 Location of FPPA Farmland - Continued

Location (Milepost)		West or East Side of Highway	Prime Or Unique	Of State-Wide Or Local Importance
From:	To:			
RONAN, ALIGNMENT 3, ONLY				
46.5	46.6	Both	X	
47.5	47.7	Both	X	
48.0	48.1	Both	X	
48.2	48.9	Both		X
RONAN, ALIGNMENT 4, ONLY				
46.2	46.3	Both	X	
47.7	47.9	East	X	
48.0	48.1	Both	X	
48.3	48.4	Both	X	
48.6	49.0	Both		X
POLSON, ALIGNMENT 1, ONLY				
58.4	58.4	Both		X
58.7	58.9	Both		X
POLSON, ALIGNMENT 2, ONLY				
57.6	57.8	Both		X
58.4	58.4	Both		X
58.5	58.5	Both		X
58.6	58.6	Both		X
58.7	58.8	Both		X
59.0	59.2	Both		X
59.6	60.5	Both		X
60.9	60.9	Both	X	

Table 6.3-1 Location of FPPA Farmland - Continued

Location (Milepost)		West or East Side of Highway	Prime Or Unique	Of State-Wide Or Local Importance
From:	To:			
POLSON, ALIGNMENT 2, CONTINUED				
60.9	61.4	Both	X	
61.4	61.6	Both	X	
POLSON, ALIGNMENT 3, ONLY				
57.6	57.8	Both	X	
58.4	58.4	Both	X	
58.5	58.5	Both	X	
58.6	58.6	Both	X	
58.7	58.8	Both	X	
59.0	59.2	Both	X	
59.6	60.5	Both	X	
60.4	60.5	Both		X
60.9	61.1	Both		X
61.2	61.6	Both	X	
61.7	61.7	Both	X	
62.1	62.3	Both		X
62.4	62.4	Both		X
Morrison-Maierle. 1993.				

6.4. SOCIAL

6.4.1. Setting

The Flathead Indian Reservation is the social setting for the proposed action. The social setting of the reservation ~~The social setting, which covers parts of Lake and Missoula counties,~~ is related to conditions throughout a broad geographic region of western Montana. In addition, the people and communities of northern Idaho, eastern Washington and southern Alberta, Canada interact with the area.

Polson, Ronan and St. Ignatius are incorporated communities in the area. Evaro, Arlee, Ravalli and Pablo are smaller, unincorporated communities located along the proposed action. Polson is the seat of Lake County, and Pablo is the center of government for CSKT. Charlo and Moiese, in Lake County, and Dixon in Sanders County, are other small, unincorporated communities in the vicinity of US 93.

Activities of Native Americans are the foundation for the social setting of the Flathead Indian Reservation. Communities, and areas around communities -- Arlee in the southern part, St. Ignatius and Pablo in the middle part, and Elmo in the northern part of the reservation are considered important centers of activity by Native Americans.

CSKT, federal and state agencies, Lake, Missoula, Sanders and Flathead counties, and the incorporated communities provide elected governments. Growth of the population and response by governments to provide public facilities/services have resulted in intergovernmental relations among tribal, federal, state and local governments being an important part of the social setting.

Residents of the Flathead Indian Reservation live in small communities and in dispersed residential developments outside communities. Native American and non-Native American residents of the Flathead Indian Reservation hold the rural character of the area and the natural environment as important aspects of lifestyle. Growth of the population and management of growth and development are sources of conflict for traditional values held by longtime residents of the reservation.

Residents of the Flathead Indian Reservation support and participate in a full range of traditional civic, cultural, religious and educational organizations and activities. Communities support schools, churches, community organizations and recreational facilities. Centers for senior citizens are important places for meetings in the communities. Integration of social and cultural perspectives of Native American and non-Native American people in these organizations is an important issue that influences the social setting.

The Flathead and Kootenai culture committees gather for meetings and traditional wakes at the *Longhouse* in St. Ignatius and the community center in Elmo. The elders also coordinate special projects such as language and plant gathering at these locations. The Salish and Kootenai people also gather at places such as the senior citizen's center in Arlee, Two Eagle River School in Pablo and Salish Kootenai College in Pablo.

6.4.2. Lifestyle

The population is rural with a unified lifestyle that is similar throughout lower Flathead, Mission and Jocko valleys. Residents have strong ties to the land and the small communities throughout the area. Population growth reflects people moving to the area because they are attracted by the rural lifestyle, with the natural environment and small town atmosphere. The rural areas are growing at a more rapid rate than the towns. Outside communities, development is more dispersed and individual homesites are located on multi-acre tracts of land.[52]

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[52]U.S. Environmental Protection Agency and Flathead Basin Commission, Flathead River Basin Environmental Impact Study Final Report, June 1983. Pages 1-36.

Communities experiencing growth are concerned about problems associated with expansion due to the arrival of new permanent and seasonal residents. New residents, who are employed in the area or who commute to employment outside the area, and retirees have been sources of growth in the permanent population. There is a continuous influx of tourism- and recreation-related newcomers during the summer. These groups regard their stay as temporary and do not expect to become permanent residents or participate as an integral part of community activities. Long-time residents identify "newcomers" as a cause of concern about land use and development, particularly the loss of agricultural lands.[53]

Residents have expressed desires for reasonable growth; but they also want to preserve natural resource values, such as clean air, pure water, productive soils, fish and wildlife populations, recreation and spectacular scenery.[54]

Residents of the area would like to improve and possibly expand industry, making communities less vulnerable to regional and national economic trends. There is interest in developing "clean" industries, with concern about the unwanted costs of development such as crowding and population growth. People choose to live in the area for reasons that go beyond availability of job opportunities; these include "quality of life" considerations such as a clean environment, recreational opportunities and small town and rural conditions. Residents are interested in environmental and land use-related problems, together with tourism and the scenic attractions. Concern about pollution and resource management reflects interest in maintaining the tourist economy and preserving stable industries in the region's economy.[55]

6.4.3. Population and Demographic Characteristics

6.4.3.1. Total Population

The reliability of the U.S. Census counts in rural areas and, in particular, on Indian reservations, has been the subject of much concern. Officials of local governments and CSKT have indicated the 1990 U.S. Census counts for Lake County and the Flathead Indian Reservation are less than the actual population.

6.4.3.1.1. Lake County and Western Montana

Lake and Missoula counties, the Flathead Indian Reservation and western Montana have a high rate of population growth. Between 1970 and 1990 the population of Lake County increased from 14,400 to 21,100 (47%). During the same period, the populations of Missoula and Flathead counties grew by 35 and 50%, respectively, while Montana's population increased by 15%. Population in eight counties of western Montana increased by 37% between 1970 and 1990. Population growth in Lake, Missoula, Flathead and Sanders counties was 46% of total growth for Montana between 1970 and 1990. The population of the four-county area increased from 17 to 21% of Montana's population between 1970 and 1990.[56] (Tables 6.4-1 and 6.4-2)

6.4.3.1.2. Flathead Indian Reservation

The population of the Flathead Indian Reservation, which contains parts of Lake, Missoula, Flathead and Sanders counties, increased from 15,490 in 1970 to 21,260 in 1990 (37%). In 1990, 89% of the reservation's population was located in Lake County, and 90% of the population of Lake County was located within the boundaries of the Flathead Indian Reservation.[57]

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[53]Ibid.
[54]Ibid.
[55]Ibid.
[56]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[57]Ibid.

Table 6.4-1 Population: Montana and Study Area

Location	1950	1960	1970	1980	1990
State of Montana	591,000	674,800	694,400	786,700	799,100
Western Montana[1]	114,500	128,500	157,400	202,300	216,000
Four-County Area[2]	87,800	97,700	119,300	155,700	167,600
Flathead Reservation	NA	NA	15,490	19,630	21,260
Lake County	13,800	13,100	14,400	19,100	21,100
Missoula County	35,500	44,700	58,300	76,000	78,700
Missoula	22,500	27,100	29,500	33,400	43,000
Flathead County	31,500	33,000	39,500	52,000	59,200
Kalispell	9,700	10,200	10,500	10,600	11,900
Sanders County	7,000	6,900	7,100	8,700	8,700

U.S. Department of Commerce, Bureau of the Census; Census of Population, 1950-1990. NA is Not Available. [1]Western Montana eight-county area, including: Lake, Missoula, Flathead, Sanders, Ravalli, Mineral, Lincoln, and Granite counties. [2]Four-county area in proximity to Proposed Action, including: Lake, Missoula, Flathead, and Sanders counties.

Table 6.4-2 Population: Flathead Indian Reservation

Location	Total Population			American Indian Population		
	1970	1980	1990	1970	1980	1990
Flathead Reservation	15,490	19,630	21,260	2,660	3,770	5,130
Lake County Part	NA	17,060	18,900	NA	3,140	4,470
Missoula County Part	NA	650	700	NA	280	280
Flathead County Part	NA	30	20	NA	10	10
Sanders County Part	NA	1,890	1,640	NA	340	370

U.S. Department of Commerce, Bureau of the Census; Census of Population, 1970-1990. NA is Not Available.

6.4.3.1.3. Communities in the Area of the Proposed Action

Between 1970 and 1990, Ronan and Pablo had the highest population growth (70%), while population in the Polson and St. Ignatius-Arlee areas increased by 40 and 28%, respectively. Population growth in Lake County has been highest in rural areas outside incorporated communities. The population of the three incorporated communities, Polson, Ronan and St. Ignatius, decreased from 33 to 27% of Lake County's total population.[58] (Table 6.4-3)

The pattern of increase in population has caused a change in the distribution of the total population for Lake County. Between 1970 and 1990, the population of the Polson Census Subdivision declined from 40 to 38% of the county's total population, while the Ronan Census Subdivision increased from to 25 to 29% of the population.[59]

In the part of northern Missoula County between Evaro and Lake County, the population within the borders of the Flathead Indian Reservation increased from 570 to 700 (23%) between 1970 and 1990. In 1990, the population was 70 at Evaro, which is outside the southern edge of the reservation.[60]

6.4.3.2. Race, Age and Sex Characteristics

6.4.3.2.1. Lake County

The population of Lake County is predominantly white and American Indian. In 1990, whites were 78% and American Indians were 21% of the county's population. Between 1970 and 1990, American Indians increased from 15 to 21% of the population.[61]

The population of Lake County is older than the overall population of Montana and younger than the population throughout western Montana. In 1990, the median age in Lake County was 34.7 years, compared with 33.8 years for Montana. Between 1980 and 1990, Lake County's median age increased from 30.1 to 34.7 years, and the percentage of people 65 years and older increased from 11 to 13% of the population. The population of the northern part of Lake County is older than the population of the southern part of the county.[62]

In 1990, the population of Lake County was evenly distributed between females and males, but females were the larger part of the population in communities. Females were 54% of the population in the cities of Polson and Ronan.[63]

6.4.3.2.2. Flathead Indian Reservation

As with Lake County, the population of the Flathead Indian Reservation in 1990 was predominantly white (75%) and American Indian (24%). American Indians increased from 17 to 19% of the population between 1970 and 1980, then increased from 19 to 24% of the population between 1980 and 1990. Between 1970 and 1990, American Indians increased from 2,660 to 5,130 (93%).[64] (Tables 6.4-1 and 6.4-2)

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[58]Ibid.
[59]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[60]Ibid.
[61]Ibid.
[62]Ibid.
[63]Ibid.
[64]Ibid.

Table 6.4-3 Population: Census County Subdivisions and Communities

Location	1950	1960	1970	1980	1990
Lake County	13,800	13,100	14,400	19,100	21,100
Polson Division[1]	NA	5,330	5,730	7,490	8,000
City of Polson	2,280	2,310	2,460	2,800	3,280
Ronan Division	NA	3,250	3,610	4,880	6,140
City of Ronan	1,250	1,330	1,350	1,530	1,550
Pablo CDP	NA	NA	NA	NA	1,300
St. Ignatius Division	NA	2,660	2,800	3,450	3,590
Town of St. Ignatius	780	940	930	870	780
Arlee (CDP)	NA	NA	NA	NA	490
Ravalli place	NA	NA	NA	NA	90
Charlo Division	NA	1,190	1,110	1,240	1,170
Charlo (CDP)	NA	NA	NA	NA	360
Big Fork-Swan River Division	NA	680	1,190	2,000	2,150
Northern Missoula County	NA	NA	NA	NA	NA
Flathead Res. Part	NA	NA	570	650	700
Evaro place (Off Res.)	NA	NA	NA	NA	70
Evaro area (Off Res.)[2]	NA	NA	NA	NA	120

U.S. Department of Commerce, Bureau of the Census; Census of Population, 1950-1990.
CDP is Census Designated Place. CDPs are unincorporated communities with distinct populations identified in the U.S Census. NA is Not Available. [1]Census county subdivisions are geographic areas identified by the U.S. Census for Lake County. The Census county subdivisions include incorporated communities, unincorporated Census designated places, and other unincorporated places. [2]Includes Evaro place. Numbers are rounded.

The American Indian population is younger than the total population. Among American Indians living on the Flathead Indian Reservation in 1990, 39% were younger than 18 years. The median age of American Indians was 23.7 years, compared with a median age of 34.2 years for the total population of the reservation.[65]

In 1990 the total population of the Flathead Indian Reservation was evenly distributed between females and males, but males were 52% of the American Indian population.[66]

[65]Ibid.
[66]Ibid.

6.4.3.3. Patterns of Natural Increase and Migration

The population growth in Lake County during 1980-1990 was approximately one-third of the growth during 1970-1980. As population growth slowed, the part of growth due to people moving into the county declined relative to natural increase of the county's population.

While the rate of population growth in Lake County decreased from 4,700 (33%) during the decade 1970-1980 to 1,900 (10%) during 1980-1990, the part of the growth in Lake County's population due to natural increase (births versus deaths) increased from 24% during 1970-1980 to 69% during 1980-1990. The part of the growth in population due to net migration (in-migration versus out-migration) decreased from 76% during 1970-1980 to 31% during 1980-1990.[67] (Section 6.4.4.2)

6.4.3.4. Population Projections ~~for Lake, Missoula and Flathead Counties~~

6.4.3.4.1. Flathead Indian Reservation

An estimate was made for population growth on the Flathead Indian Reservation for the 30-year period 1990-2020. The estimate was based on population projections available from the Montana Department of Commerce, Census and Economic Information Center (CEIC) for Lake, Missoula, Sanders and Flathead counties; parts of each of these counties are contained within the boundaries of the reservation. The estimate indicates the population of the reservation will increase from 21,260 in 1990 to 24,000 in 2000, 26,200 in 2010 and 28,600 in 2020.[68,69]

The Flathead Indian Reservation, including the area served by US 93, has experienced a recent increase in growth and development since 1990. Information is not available for 1991-94 about the distribution of population growth for the parts of Lake, Missoula, Sanders and Flathead counties that are on the Flathead Indian Reservation.[70]

6.4.3.4.2. Lake, Missoula, Sanders and Flathead Counties

Population projections for Lake County indicate there will be a rate of increase similar to the period 1980-1990. Information available from ~~the Montana Department of Commerce, Census and Economic Information Center (CEIC)~~CEIC estimates the population of Lake County will grow at a rate between nine and 13%, to a level between 22,900 and 23,800 during the period 1990-2000. During the period 2000-2010 the rate of growth is expected to be between seven and nine percent, resulting in a population between 24,400 and 25,900.[71] With continuation of a seven to nine percent rate of growth after 2010, Lake County's population would be between 26,100 and 28,200 in 2020~~25,300 and 27,100 in 2015~~.[72]

In 2020, population projections available from CEIC indicate the populations of Missoula, Sanders and Flathead counties will increase to 81,200, 10,700 and 101,300, respectively.[73,74]

Information available from the U.S. Census for the period 1991-94 indicates there was a higher rate of population growth throughout western Montana, including the Flathead Indian Reservation, during the first four years of this decade than during the past decade (1980-90). The populations of the counties that have lands within the reservation, Lake, Missoula, Sanders and Flathead, increased at annual rates of 3.1, 2.2, 3.1 and 3.4%,

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[67]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[68]Montana Department of Commerce, Census and Economic Information Center. Population Projection Information.
[69]Morrison-Maierle.
[70]Ibid.
[71]Montana Department of Commerce, Census and Economic Information Center. Population Projection Information.
[72]Morrison-Maierle.
[73]Montana Department of Commerce, Census and Economic Information Center. Population Projection Information.
[74]Morrison-Maierle.

respectively. For the 10-year period 1980-90, annual population growth for Lake, Missoula, Sanders and Flathead counties was approximately one percent.[75]

The population projections reflect estimates of long-term patterns of growth and development. It should be expected there will be brief periods when the rate of growth will be higher or lower than the long-term rate. ~~Officials in Lake County indicate population growth in 1991 and 1992 was higher than during recent years. The U.S. Census estimates the county's annual rate of population growth was 2.4% between 1990 and 1992, compared with one percent between 1980 and 1990.~~ If the rate of growth in 1991-1992 continues, the long-term rate of growth could be similar to the rate of growth between 1970 and 1980, when the populations of Lake, Missoula and Flathead counties increased by more than 30% ~~population of Lake County increased by 33%~~.[76]

~~Information available from CEIC estimates the population of Missoula County will grow by 10% between 1990 and 2000 and seven percent between 2000 and 2010, increasing from its 1990 level of 78,700 to 86,600 in 2000 and 92,900 in 2010. Estimates are for Flathead County's population to grow by 15% between 1990 and 2000 and nine percent between 2000 and 2010, increasing from its 1990 level of 59,200 to 68,100 in 2000 and 74,500 in 2010. Estimates of population growth for the state of Montana are five percent for the periods 1990-2000 and 2000-2010. Population projections are unavailable for the part of Missoula County that includes the area from Evaro northward to Lake County.~~[77]

6.4.4. Community Cohesion

Community cohesion is described as the level of commitment to a community, as demonstrated by the amount of interaction among individuals, groups and institutions. Traffic and physical features associated with the highway affect community cohesion as an aspect of social well-being that involves individual perceptions of communities or rural areas.[78]

Population growth, with a high level of in-migration, affects social stability and mobility, and it is an indicator of community cohesion. The rural lifestyle of the area is affected by population growth throughout the Flathead region. Communities in the area share a high degree of interdependence. Each community has distinctive attributes with varying conditions of lifestyles, occupations, land use patterns and concerns about land management.[79] (Section 6.4.2)

Arlee, Ronan and Polson are the communities for which there will be consideration of alignments. In public scoping meetings, residents of the three communities have identified the highway as a prominent physical feature that influences perceptions of their communities and interaction within the communities. Residents identify the traffic using the highway as being important for business activity in the community. The vitality of the community is considered to be dependent on businesses.

The effect of the highway as a barrier from Evaro through Polson was indicated by the results of a 1992-voting-day survey conducted in Polson. Nearly 75% of 1,400 Polson area respondents to the survey identified traffic on US 93 through Polson as a serious problem, and 60% of the respondents identified traffic on highways throughout the Flathead Valley as a serious problem.[80]

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[75]U.S. Bureau of the Census. Estimates of Montana's Resident Population: Counties. 1990-94. January 1995.

[76]U.S. Department of Commerce, Bureau of the Census. Census of Population and Housing. 1980-1990.

[77]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.

[78]U.S. Department of Transportation, Federal Highway Administration, Social Considerations in Highway Project Development, Page 5-8. 1992.

[79]U.S. Department of Transportation, Federal Highway Administration, Social Considerations in Highway Project Development, Page 5-8. 1992.

[80]Carter-Burgess. Polson Area Citizens Survey on Transportation Issues. November 1992.

Information available in the 1990 Census indicates the extent to which the highway may be a barrier to residents as they travel among residential, commercial, industrial, recreational and other open areas. In Arlee, 190 people live west and 300 people live east of the highway, while in Ronan 970 people live west and 580 people live east of the highway. In Arlee and Ronan, businesses and public and private services are located on either side of the highway, requiring residents to cross traffic on a regular basis. In Polson, 360 people live north of the highway and 2,960 live south of the highway. Much of the recreational activity in Polson is focused on the lakeshore and requires the residents living south of the highway to cross traffic on a regular basis.[81]

Residents of Arlee, Ronan and Polson recognize the disruption of community conditions caused by traffic congestion. Senior citizens regularly cross the highway for activities such as shopping, postal service and attending gatherings at senior citizens centers. Students cross the highway walking from residential areas to schools. The highway's physical presence and high traffic volume impede people from having direct, unobstructed access to stores, public and private facilities/services, recreational areas and residential areas in the main parts of the communities. The majority of residents support using more traffic controls, especially traffic signals, signing and enforcement, to decrease the disruption of traffic congestion and manage the flow of traffic. Residents of the communities believe highway improvement on the existing alignment will decrease traffic congestion, improve the physical appearance and function of the business districts and preserve the rural areas outside the communities.[82,83]

The Federal Highway Administration (FHWA) reports that half or more of traffic in smaller communities is through traffic that does not stop in the community. Observation of traffic in Arlee and Ronan during September and October of 1992 indicates 84% of vehicles in Arlee and 55% of vehicles in Ronan traveled through the communities without stopping. Vehicles stopping at businesses were 11% in Arlee and 22% in Ronan.[84,85] (Table 6.4-4)

Social conditions related to population growth, level of income, property ownership versus rental, poverty status, labor force participation and rate of unemployment have been used to provide indications of social stability.[86]
In 1990, Lake County's median family income and per capita income were 17% below the statewide average. Population with income below poverty level was five percent higher and unemployment was two percent higher in Lake County than for all of Montana. For the American Indian population living on the Flathead Indian Reservation in 1990, per capita income was 43% lower than the average for Montana; persons with income below poverty level was 23% higher and unemployment was 10% higher than for all of Montana.[87,88]

6.4.4.1. Social Stability

Lake, Sanders and Flathead counties have been designated by the U.S. Department of Labor as *labor surplus areas* since 1989 because the average rate of unemployment has been six percent or greater for two previous calendar years.[89] (Tables 6.4-5 and 6.4-6)

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[81]U.S. Department of Commerce, Bureau of the Census. Census of Population and Housing. 1990.

[82]Carter-Burgess. Polson Area Citizens Survey on Transportation Issues. November 1992.

[83]Morrison-Maierle. Results of public involvement process. 1993.

[84]National Cooperative Highway Research Program. Comparative Analysis of Highway Bypass Impact Studies. Nancy L. Bennett and Martin M. Stein. 1973.

[85]Morrison-Maierle. Results of public involvement process. 1992.

[86]Social Considerations In Highway Project Development, Chapter 5, from the Federal Highway Administration, describes social well-being and community cohesion as conditions that involve group social interactions and individual perceptions of common interests that affect their places of residence.

[87]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.

[88]Morrison-Maierle. Technical Report for Social Conditions: Supplement to U.S. Highway 93 Environmental Impact Statement. 1993.

[89]U.S. Department of Labor, Area Trends In Employment And Unemployment; 1989-1992.

Table 6.4-4 Vehicle Traffic Patterns

Geographic Origin	Total Vehicles Counted	Pass Through Without Stopping	Turn on Street	Stop at Highway-Oriented Business	Stop at Nonhighway-Oriented Business	Stop at Business: Total
ARLEE:						
(Weekend Traffic: End Peak Season)						
Northbound	111	92%	4%	5%	--	5%
Southbound	127	91%	3%	6%	1%	7%
TOTAL:	238	217 Veh. (91%)	8 Veh. (3%)	12 Veh. (5%)	1 Veh. (1%)	13 Veh. (6%)
(Weekday Traffic: End Peak Season)						
Northbound	517	81%	6%	11%	2%	13%
Southbound	464	83%	5%	9%	2%	11%
TOTAL:	981	808 Veh. (82%)	59 Veh (6%)	97 Veh. (10%)	17 Veh. (2%)	114 Veh. (12%)
TOTAL:	1,219	1,025 Veh. (84%)	67 Veh. (6%)	109 Veh. (9%)	18 Veh. (1%)	127 Veh. (11%)
Northbound	628	523 Veh. (83%)	38 Veh. (6%)	58 Veh. (9%)	9 Veh. (1%)	67 Veh. (11%)
Southbound	591	502 Veh. (85%)	29 Veh. (5%)	51 Veh. (9%)	9 Veh. (2%)	60 Veh. (10%)
RONAN						
(Weekend Traffic: End of Peak Season)	121	65%	21%	14%	--	4%
Northbound	157	11%	11%	24%	3%	27%
Southbound	278	178 Veh.	42 Veh.	54 Veh.	4 Veh.	58 Veh.
TOTAL:		(64%)	(15%)	(20%)	(1%)	(21%)
(Weekday Traffic: End of Peak Season)	163	43%	28%	18%	10%	28%
Northbound	168	33%	45%	17%	4%	22%
Southbound	331	159 Veh.	96 Veh	55 Veh.	21 Veh.	76 Veh.
TOTAL:		(48%)	(29%)	(17%)	(6%)	(23%)
TOTAL:	609	337 Veh. (55%)	138 Veh. (23%)	109 Veh. (18%)	25 Veh. (4%)	134 Veh. (22%)
Northbound	284	157 Veh. (55%)	68 Veh. (24%)	46 Veh. (16%)	13 Veh. (5%)	59 Veh. (21%)
Southbound	325	180 Veh. (55%)	70 Veh. (22%)	63 Veh. (19%)	12 Veh. (4%)	75 Veh. (23%)

Morrison-Maierle. 1993.

The social stability of the area has been affected by conflict associated with population growth. As discussed in Sections 6.4.2 and 6.4.4, residents of this area, as a part of the region covering Flathead, Mission and Jocko valleys, desire to maintain the rural lifestyle, natural environment and small town atmosphere, which are perceived as being important to social well-being and a high quality of life. Simultaneously, there is a desire to have a reasonable level of economic growth to raise the area's relatively low level of income. Conflict occurs when population growth, consisting of permanent and seasonal new residents, exceeds what is considered to be reasonable by established local residents. Over time, population growth results in change and conflict, with the benefits of

Table 6.4-5 Social Stability Characteristics

Montana And Lake County 1990 Characteristics Of The Total Population			
Location	Median Family Income ($)	Per Capita Income ($)	Percent Of Persons With Income Below Poverty Level (%)
State of Montana	28,000	11,200	16
Lake County	23,300	9,300	21
Flathead Indian Reservation 1990 Characteristics Of The American Indian Population			
Location	Median Family Income ($)	Per Capita Income ($)	Percent Of Persons With Income Below Poverty Level (%)
Reservation Total	NA	6,400	39

U.S. Department of Commerce, Bureau of the Census; 1990 Census of Population and Housing, Montana. U.S. Department of Commerce, Bureau of the Census; 1990 Selected Labor Force and Commuting Characteristics, Montana.
NA is Not Available.

Table 6.4-6 Labor Force Characteristics

Montana And Lake County 1990 Characteristics Of The Total Population			
Location	Civilian Labor Force	Percent Of Persons 16 Years And Older In The Labor Force (%)	Percent Of Labor Force Unemployed (%)
State of Montana	376,940	64	7
Lake County	9,100	59	9
Flathead Indian Reservation 1990 Characteristics Of The American Indian Population			
Location	Civilian Labor Force	Percent Of Persons 16 Years And Older In The Labor Force (%)	Percent Of Labor Force Unemployed (%)
Reservation Total	2,000	59	17

U.S. Department of Commerce, Bureau of the Census; 1990 Census of Population and Housing, Montana. U.S. Department of Commerce, Bureau of the Census; 1990 Selected Labor Force and Commuting Characteristics, Montana.
NA is Not Available.

increased economic activity a means to increase income and reduce poverty balanced against the values and traditions of a sparsely populated rural area with desirable aesthetic qualities. (Section 6.14)

6.4.4.2. Social Mobility

Two types of information have been used from the U.S. Census to describe social mobility: 1) place of residence for persons five years prior to the census; 2) the number of employed persons who commute to work outside their place or county of residence.

Since 1980, people moving to Lake County from places outside the county and outside Montana have been an important part of the growth of population. The number of people who moved to Lake County from another county in Montana or from outside Montana in the five-year period before the decennial U.S. Census decreased from 32 to 22% of the population between 1980 and 1990. In 1990, Lake County and Montana had similar percentages of the population that moved into the area from another county in Montana or from outside Montana.[90]

There has been an increase in the number of workers commuting between communities, both inside and outside Lake County. The number of workers commuting between places inside Lake County increased from approximately 145 (two percent of total employment) in 1980 to 1,500 (18%) in 1990.[91]

With population growth there has been increased commuter travel between the area of the proposed action and Missoula and Kalispell, which are the region's major trade centers. Between 1980 and 1990, the rates of population growth for Lake, Flathead and Missoula counties were 10, 14 and four percent, respectively. During that time, the number of workers commuting outside Lake County to other Montana counties increased from 710 to 1,200 (69%), and the percentage of workers commuting outside Lake County increased from 12 to 15% of all workers.

With the higher rates of population growth in Flathead and Lake counties, the growth in commuters from Lake County was toward Flathead County, which increased by 118%, rather than Missoula County, which did not change.[92]

Between 1980 and 1990, growth in workers commuting outside Lake County was concentrated in the northern part of Lake County. The number of commuters increased from 60 to 190 (217%) in the Polson area, while the number of commuters decreased from 230 to 220 (minus four percent) in the Arlee-St. Ignatius areas. Flathead County was the major destination for the increase in workers commuting outside Lake County. Commuters to Flathead County increased from 340 to 740 (88%), while commuters to Missoula County did not change from 260 workers. Workers commuting to Flathead County increased from 48 to 62% and workers commuting to Missoula County decreased from 37 to 22% of the total number of commuters from Lake County.[93]

In the Polson area, estimates of workers commuting to Flathead County increased from fewer than 10 in 1980 to 70 in 1990 (600%), and workers commuting to Missoula County increased from 40 in 1980 to 90 in 1990 (125%). Commuters to Missoula County increased by approximately 50 in the Polson area and decreased by 50 in the Ronan and St. Ignatius-Arlee areas.[94,95]

The increase in commuters consists of established residents of Lake County who obtained work outside Lake County, as well as new residents who moved into the county. Information is unavailable to identify what portions of the new commuters are established or new residents. However, for purposes of general comparison, if it is

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[90]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[91]Ibid.
[92]Ibid.
[93]Ibid.
[94]Ibid.
[95]Morrison-Maierle. Interpretation of U.S. Census Information. 1993.

assumed the increase in commuters consisted entirely of new residents in the county, the increase in commuters between 1980 and 1990 was 26% of the growth in population for Lake County. In contrast, if it is assumed all new commuters in the Polson area were new residents of that area, the increase in commuters between 1980 and 1990 was 10% of the growth in population for the Polson area. These estimates of commuters contributing to population growth are high, because, as noted above, long-time residents who obtained employment outside the county would have been a part of the new commuters.[96] (Tables 6.4-3 and 6.4-7)

Table 6.4-7 Workers Commuting Outside Lake County

Estimates of Commuter Travel From Lake County Census Subdivisions to Locations Outside Lake County						
Lake County Census Subdivision	Work Destinations of Lake County Commuters					
	1980			1990		
	Flathead County	Missoula County	Other Montana County	Flathead County	Missoula County	Other Montana County
Big Fork-Swan River	325	10	5	670	10	20
Polson	15	40	5	70	90	30
Ronan	--	20	30	--	10	35
Charlo	--	10	20	--	10	35
St. Ignatius	--	180	50	--	140	80
TOTAL	340	260	110	740	260	200
U.S. Department of Commerce, Bureau of the Census. Census of Population. 1960-1990.						

Generally, the number and percentage of workers who live in Lake County and commute to the Missoula area decrease as the distance increases between Missoula and locations in the area. In 1990, seven percent of all workers living in the area between Arlee and Polson commuted to work outside Lake County; 28% of workers living between 15 and 35 miles from Missoula commuted to work outside Lake County. In contrast, eight to 10% of workers living between 45 and 50 miles from Missoula and six percent of workers living between 60 and 70 miles from Missoula commuted to work outside Lake County. However, the extreme southern (Arlee-St. Ignatius areas) and northern (Polson area) parts of the area have the highest numbers of workers commuting to the Missoula area.

In 1990, the number of workers commuting outside Lake County ranged from approximately 150 in the Arlee area to 45 in the Ronan area.[97]

The majority of commuters to Missoula live within 30 miles of Missoula. (Figure 6.4-1)

Between 1970 and 1990, more workers who commuted to Missoula chose to live in Ravalli County than on the Flathead Indian Reservation, and there was low growth in the commuter-related population (i.e., the sum of

[96]Ibid.
[97]Ibid.

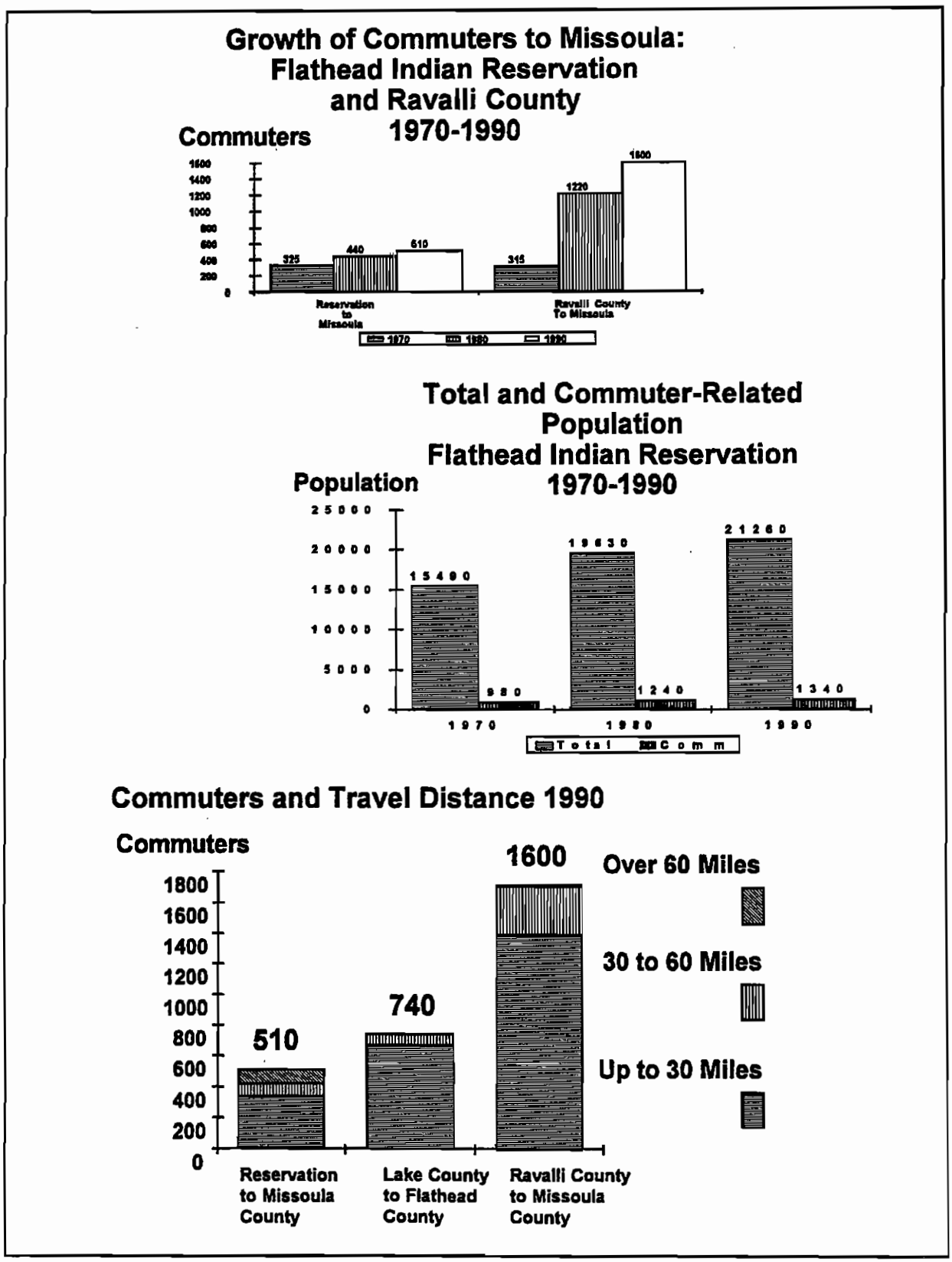

Figure 6.4-1 Commuters and Commuter-Related Population
This figure has been added to the final EIS.

commuters and their families) of the reservation. On the Flathead Indian Reservation, most of the increase in commuters has been from the Missoula County part of the reservation.

- Of the 510 commuters to Missoula in 1990, more than 90% were from the Lake (260 commuters) and Missoula (210) county parts of the reservation. The other 40 commuters were from the Sanders and Flathead county parts of the reservation.

  - Commuters from the Lake County part of the reservation increased from 210 in 1970 to 260 in 1980, then did not increase between 1980 and 1990.

In 1990, 20% of commuters to Missoula from the Flathead Indian Reservation were Native Americans.

In the extreme southern part of the Flathead Indian Reservation~~proposed action~~, past improvement of US 93 has occurred when there also was population growth. In the northern part of Missoula County, US 93 between the I-90 DeSmet Interchange and Evaro was widened to four lanes in 1986. That portion of highway borders the southern part of the proposed action and provides access to the part of the Flathead Indian Reservation that is located in Missoula County.

In the part of northern Missoula County between Evaro and Lake County, the 1990 population was 820 for the Evaro area, which includes lands both within and outside the Flathead Indian Reservation. Between 1980 and 1990 the population of the part of the Flathead Indian Reservation in Missoula County increased from 650 to 700 (eight percent), which is double the rate of population increase for all of Missoula County. Persons not American Indians increased from 370 in 1980 to 420 in 1990 (14%), and the entire increase for the area was persons who were not American Indians.[98]

Information currently is not available to determine the prior residential locations of new residents in this part of northern Missoula County between Evaro and Lake County. Information also is not available to determine how many workers from this part of northern Missoula County commute to the Missoula area or Lake County. For all of Missoula County, workers who commute to work in Lake County increased from 105 in 1980 to 160 in 1990. Most workers would be expected to travel on US 93 between Missoula and Lake counties.[99]

Some students at the University of Montana in Missoula and Flathead Community College in Kalispell travel on US 93, either daily or several days each week. Information is not available from the schools about the number of students who live outside Missoula and Kalispell.

6.4.5. Facilities/Services

CSKT, federal, state and local governments, and community groups provide facilities/services throughout the area. US 93 is the primary travel route for residents of the area to utilize available facilities/services.

There are five public high school districts and five public elementary school districts. Each school district operates school bus routes that require travel and stops on US 93. Between 1970 and 1990, total enrollment in the public and elementary school districts increased from approximately 3,650 to 4,250 (16%). High schools in Ronan, St. Ignatius and Polson and elementary schools in Ronan and St. Ignatius report enrollment is approaching capacity. Enrollment in Arlee schools is not approaching capacity. Salish Kootenai College (with 900 students) and Two Eagle River School, a private high school (with 100 students), are located adjacent to US 93 at Pablo. Two Eagle River School serves approximately 10 students who require wheelchair access.[100]

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[98]Morrison-Maierle, based on information from Summary Tape File 3 of the 1980 and 1990 U.S. Census.
[99]U.S. Department of Commerce, Bureau of the Census. Census of Population and Housing. 1990.
[100]Lake County Superintendent of Schools.

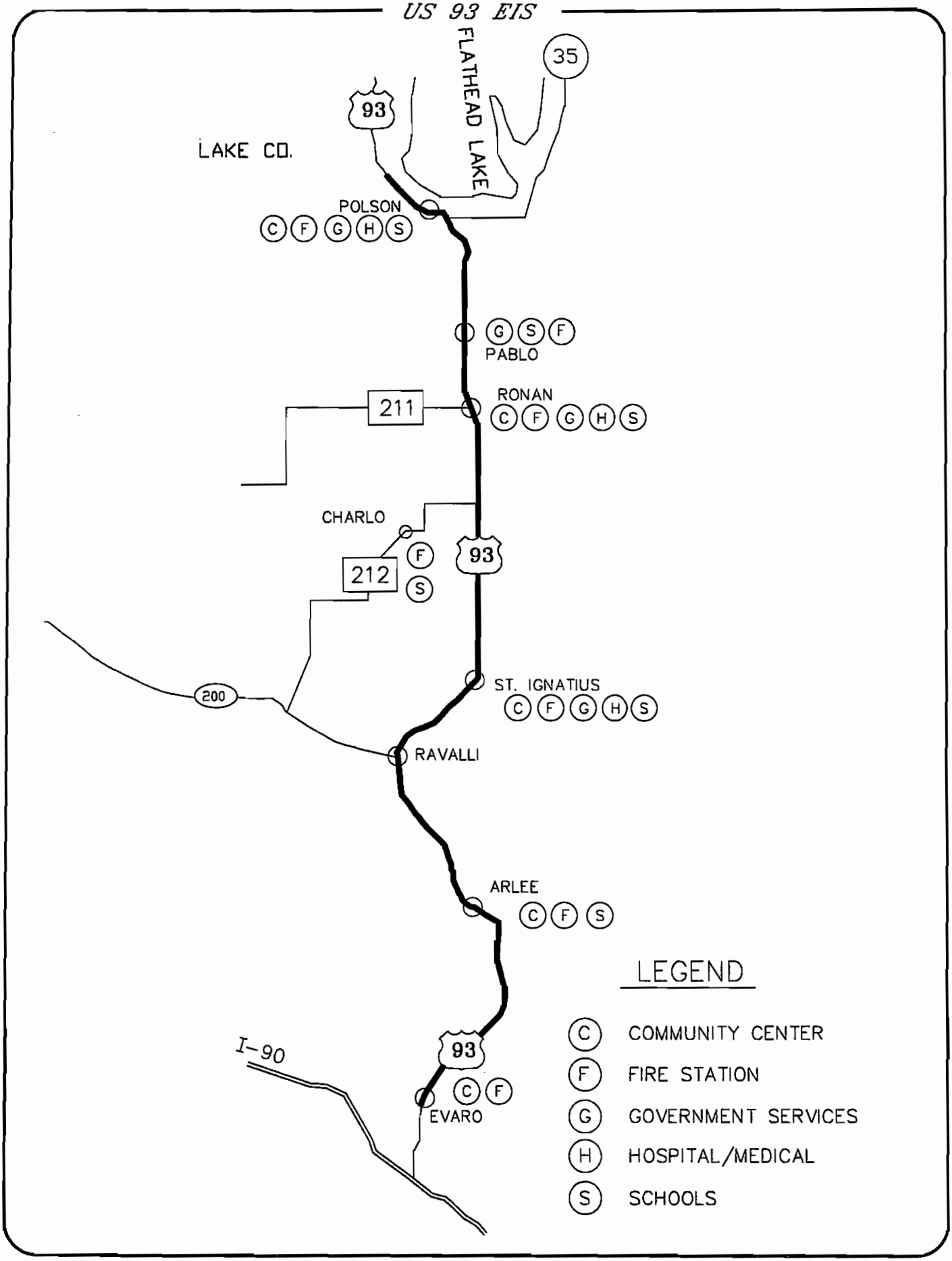
The incorporated communities of Polson, Ronan and St. Ignatius operate municipal water and wastewater treatment facilities. Water and wastewater treatment systems in Charlo and Pablo are operated with rural special improvement districts. A community wastewater treatment system is planned for development in Arlee. Residential, commercial and industrial developments in rural areas outside the communities use individual water wells with septic tanks and drain fields for sewage disposal.[101]

CSKT operates community water and sewer systems at Turtle Lake (east of Polson), St. Ignatius Southside and three homesites east of Ronan. There also are tribal community water systems in Arlee, Schley, Evaro, the Mission Dam area east of St. Ignatius and in areas that are more distant from US 93.

Hospitals are located in Polson and Ronan, and the CSKT Health and Human Services Department~~Indian Health Service Center~~ is located in St. Ignatius. Mental health and social services offices, operated by the state, Lake County, CSKT and municipal governments, are located in Polson, Pablo, Ronan, St. Ignatius and Arlee. There are nursing homes in Polson, Ronan and St. Ignatius. Community and senior citizen centers are located in Polson, Ronan, St. Ignatius, Arlee and Evaro. Churches of many denominations are located in all of the communities; several churches have direct approaches to US 93, while others are in areas away from the highway. There is a cemetery with a direct approach to US 93 south of St. Ignatius. Other cemeteries are located near the communities of Arlee, St. Ignatius, Ronan, Pablo and Polson, but they do not have direct approaches to US 93.

Municipal and volunteer fire departments are located near US 93 in all of the communities. The highway is the major route of travel for law enforcement agencies, such as the Montana Highway Patrol, Lake County Sheriff, CSKT police and police from communities. Emergency ambulance services are located in Polson, Ronan and St. Ignatius. Missoula area ambulance services also travel on US 93 to respond to emergencies. Municipal airports are operated by the communities of Polson, Ronan and St. Ignatius. MRL operates a railroad freight line between Missoula and Polson. Passenger bus service is available, but no passenger rail service is available between Missoula and Kalispell. (Figure 6.4-2 and Appendix A, aerial photographs and maps)

[101]The Lake County Overall Economic Development Plan, 1990 Update; P. 14.



FACILITIES/SERVICES IN COMMUNITIES **FIGURE 6.4-2**

6.5. ECONOMICS

6.5.1. Employment And Personal Earnings In The Area Economy

Western Montana and Lake County

Natural resources generate a major portion of business activity, employment and earnings for the economy of Lake County and other counties in western Montana. These resources include forest products, agricultural livestock and crop production and water and wildlife. Water and wildlife provide tourism and outdoor recreation opportunities, hydroelectric power and irrigation. Irrigated cropland is used for growing seed potatoes. Seed potatoes are one of Montana's crops with highest value per acre. Dryland and irrigated hay, wheat, and barley production also occurs on farmlands. Area rangeland is used for grazing cattle and horses. The orchards in the Polson area are a major part of the agricultural economy.

Between 1970 and 1990, total employment for Lake County increased from 4,540 to 9,130, and employment in retail trade and services increased from 34 to 46% of total employment. Farm employment decreased from 23 to 14% of total employment. Manufacturing employment increased from eight to nine percent, but employment in the wood and lumber products segment of manufacturing went down from six to four percent of total employment.[102,103] (Table 6.5-1)

Employment in Lake County is subject to seasonal variation because of the importance of natural resources and tourism in the economy. In 1991, reports from the Montana Department of Labor and Industry showed that average monthly total employment for non-farm wage and salary workers was five percent higher during the summer months than the winter months. Levels of employment in 1991 for the retail trade, services and construction industries was higher during the summer months than the winter months by amounts of 23, 12 and 94%, respectively.[104]

In 1990, the services sector had the largest amount of personal earnings with 28% of the total, followed by government (19%), retail (14%) and manufacturing (12%). Wage and salary personal earnings for retail trade and services increased from 30 to 42%, while farm personal earnings decreased from 18 to eight percent of total personal earnings between 1970 and 1990. Manufacturing personal earnings increased from 11 to 12%, but wood and lumber products manufacturing decreased from 10 to nine percent of total personal earnings. Missoula, which is the region's major trade center, provides retail trade and services that compete with local businesses in the area of the proposed action.[105,106]

The economies of counties in western Montana, stretching from the Canadian border in the north to the Idaho and Wyoming borders in the south, have grown at rates three to five times faster than the statewide average. The expansion has occurred despite a decline in the region's traditional extractive industries.[107]

Flathead Indian Reservation

Unlike many Indian reservations, the Flathead Indian Reservation is not isolated from the larger state and regional economies. The reservation contributes to the region's development, just as change in the regional economy influences the economic health of the reservation.[108]

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[102]U.S. Department of Commerce, Bureau of Economic Analysis; Regional Economic Information System, 1970-1990.

[103]Morrison-Maierle. Technical Report for Social Conditions: Supplement to U.S. Highway 93 Environmental Impact Statement. 1993.

[104]Montana Department of Labor and Industry, Covered Employment and Wages in Montana By Standard Industrial Classification for Quarters Ending March 31, June 30, September 30, and December 31, 1991.

[105]Ibid.

[106]Morrison-Maierle. Technical Report for Social Conditions: Supplement to U.S. Highway 93 Environmental Impact Statement. 1993.

[107]Flathead Reservation Comprehensive Resources Plan. Volume I, Existing Conditions. 1994. Page 4-3.

[108]Flathead Reservation Comprehensive Resources Plan. Volume I, Existing Conditions. 1994. Page 4-2.

Table 6.5-1 Lake County Total Employment (1970-1990)

Category	Employment		Rate of Growth	Percent of Total	
	1970	1990	1970-1990 (%)	1970	1990
By Industry:					
Total	4,540	9,130	101	--	--
Farm	1,040	1,270	22	23	14
Construction	250	530	112	6	6
Manufacturing	370	800	116	8	9
Wood Products Mfg.[1]	270	360	33	6	4
Retail Trade	760	1,680	121	17	18
Services	790	2,530	220	17	27
Government	920	1,290	40	20	14
Other	410	1,030	151	9	12

U.S. Department of Commerce, Bureau of Economic Analysis; Regional Economic Information System, 1970-1990.
Numbers have been rounded. Other includes agriculture/forestry/fishery, mining, construction, transportation/public utilities, wholesale trade, and finance/insurance/real estate.
[1]Wood products mfg. is a subset of manufacturing.

The Confederated Salish and Kootenai Tribes are the most important actor on the reservation. They spend tens of millions of dollars locally, and they own most of the timber, range and recreation resources, as well as the lands that are the origins of irrigation waters. Tribal members own and operate over 130 local businesses (primarily in construction, retail trade and services sectors). Indian businesses represented 14% of retail businesses and seven percent of service businesses in Lake County in 1992. The tribal organization also operates businesses, schools and the reservation's electric utility.[109]

Indians participate less in the reservation money economy than non-Indians. The 1990 Census reports that, on average, annual income of Indians was 36% less than non-Indians. The difference is due in part to the types of jobs held by Indian people.[110]

For Lake County, most of which is contained within the Flathead Indian Reservation, Indian people have an unemployment rate approximately double that of the total population. (Table 6.4-6)

[109]Ibid. Pages 4-2 and 4-6.
[110]Ibid. Page 4-17.

Economic growth for the Flathead Indian Reservation is expected to be concentrated in the corridor of US 93 from Evaro northward to the southern end of Flathead Lake.[111]

The Flathead Reservation Comprehensive Resource Plan (1994) identifies several factors that are expected to contribute to continued expansion of the economy of the Flathead Indian Reservation:[112]

- The reservation is between Missoula and Kalispell, both of which are large, growing population and economic centers
- Economic activity in Montana is shifting to western Montana
- Expansion is planned for US 93, which links Missoula and Flathead counties

6.5.2. Highway-Oriented Businesses And Nonhighway-Oriented Businesses

FHWA identifies highway-oriented and nonhighway-oriented categories of retail businesses for which highway development is related to economic conditions. Traffic-serving retail businesses, such as gasoline service stations/convenience stores, lodging and eating establishments and tourism specialty stores, are considered to be primarily highway-oriented. Gasoline service stations may have automotive repair facilities and convenience stores. Lodging includes hotels, motels, campgrounds, resorts and bed-and-breakfast. Eating establishments include restaurants, cafes and drive-ins. Generally, restaurants also sell alcoholic beverages. Tourism specialty stores include souvenirs and gifts, arts and crafts and antiques.[113,114]

Some types of nonhighway-oriented businesses, such as automotive repair/parts/dealers, grocery, sporting goods, recreation and entertainment are considered to have traffic-serving commercial activity, but purchases not related to travel and traffic from residents of the local area are the primary source of their trade.[115]

Between 1980 and 1990 in Lake County, employment in eating and drinking establishments, lodging establishments, and gasoline service stations increased from 360 to 540 (50%). Employment in these highway-oriented businesses increased from 22 to 26% of total employment for retail trade and services in Lake County.[116,117]

There are 543 businesses in the vicinity of US 93 from Evaro through Polson, with 254 (47%) located adjacent to US 93. The other 53% of businesses are located away from the highway, either in business districts or in areas with dispersed residential, commercial and industrial development. There are 126 highway-oriented businesses; of these, 92% are located adjacent to the highway, and eight percent are located away from the highway. Of the 417 nonhighway-oriented businesses, 38% are located adjacent to the highway. Highway-oriented businesses are 23% of all businesses. The percentages of highway-oriented businesses outside towns range from 15% between Pablo and Polson to 59% between St. Ignatius and Ronan.[118] (Tables 6.5-2 and 6.5-3)

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[111]Ibid. Page 4-17.

[112]Ibid. Page 4-19.

[113]National Cooperative Highway Research Program, Community Consequences of Highway Improvement, P. 8; 1965.

[114]National Cooperative Highway Research Program, Comparative Analysis of Highway Bypass Impact Studies, Nancy L. Bennett and Martin M. Stein, January 1973.

[115]National Cooperative Highway Research Program, Community Consequences of Highway Improvement, P. 8; 1965.

[116]U.S. Department of Commerce, Bureau of the Census; County Business Patterns; 1980 and 1990.

[117]National Cooperative Highway Research Program, Comparative Analysis of Highway Bypass Impact Studies, Nancy L. Bennett and Martin M. Stein, January 1973.

[118]Morrison-Maierle. Inventory of businesses along U.S. Highway 93 between Evaro and Polson. 1991-1992.

Table 6.5-2 Highway-Oriented And Nonhighway-Oriented Businesses (1991-1992)

Location	Business Establishments			Percent Of Businesses	
	Highway-Oriented	Nonhighway-Oriented	Total	Highway-Oriented (%)	Nonhighway-Oriented (%)
Evaro	3	2	5	60	40
Evaro to Arlee	3	7	10	30	70
Arlee	6	24	30	20	80
Arlee to Ravalli	–	1	1	–	100
Ravalli[1]	9	5	14	64	36
St. Ignatius	16	28	44	36	64
U.S. Highway 93 Corridor	14	7	21	66	34
Other Business District	2	21	23	9	91
St. Ignatius to Ronan	10	7	17	59	41
Ronan	19	169	188	10	90
U.S. Highway 93 Corridor	12	31	43	28	72
Other Business District	7	138	145	5	95
Ronan to Pablo	4	1	5	80	20
Pablo	6	30	36	17	83
U.S. Highway 93 Corridor	5	3	8	62	38
Downtown Business District	1	27	28	4	96
Pablo to Polson	5	29	34	15	85
Polson (North of Caffrey Road)	45	114	159	28	72
U.S. Highway 93 Corridor	33	42	75	44	56
Downtown Business District	12	72	84	14	86
Total	126	417	543	23	77

Morrison-Maierle, 1991-1992. [1]No businesses were identified between Ravalli and St. Ignatius.

Table 6.5-3 Highway-Oriented And Nonhighway-Oriented Businesses In Communities (1991-1992)

Location	Business Establishments*								
	Highway-Oriented				Nonhighway-Oriented				
	Gas Service Station & Convenience Store	Eating	Lodging	Tourism Specialty	Automotive Services	Entertainment[1] & Recreation	Grocery & Pharmacy	Sporting Goods & Hardware	Other Retail & Services
Evaro	--	1	--	2	--	1	--	--	1
Arlee	1	2	--	3	3	3	2	1	15
Ravalli	2	3	--	4	2	1	--	--	2
St. Ignatius	3	4	4	5	1	4	2	2	19
US 93	3	3	3	5	1	--	--	--	6
Other Areas	--	1	1	--	--	4	2	2	13
Ronan	6	9	2	2	8	7	7	5	142
US 93	6	4	2	--	5	1	4	2	19
Other Areas	--	5	--	2	3	6	3	3	123
Pablo	2	2	1	1	3	4	1	1	21
US 93	2	2	1	--	1	1	--	--	1
Other Areas	--	--	--	1	2	3	1	1	20
Polson (North of Jct. 93 & 35)	5	17	8	15	6	16	5	11	76
US 93	5	11	5	12	2	9	3	3	25
Other Areas	--	6	3	3	4	7	2	8	51

Morrison-Maierle, 1991-1992. [1]Bars are included in entertainment. * Refer to Table 6.5-2 for total businesses in communities.

6.5.3. Economic Characteristics Of Communities Considered For Highway Alignments

6.5.3.1. Arlee

Arlee is the southern most community in Lake County, and the local economy is strongly influenced by its proximity to the larger Missoula economy. Most businesses on US 93 are oriented to serving highway travelers and local tourists (tourists purposely staying in Arlee).

In 1990, of the 180 persons who lived in Arlee and were employed, 110 (60%) were employed outside the community; 72% of Arlee residents were employed in retail trade and services establishments, with 17% employed in manufacturing and 11% employed by other types of businesses.[119]

Arlee residents regularly purchase goods and services in Missoula; this inhibits development and expansion of local commercial businesses and the creation of secondary jobs and earnings for Arlee's local business sector.[120]

Economic activity in Arlee is concentrated along the route of US 93. In 1992, there were 30 businesses located in Arlee, of which 20% were highway-oriented establishments. In 1990 businesses in Arlee were estimated to have 100 employees, with the highest level of employment occurring during the summer tourist season.[121] (Tables 6.5-2 and 6.5-3)

According to the results of a 1993 survey of Arlee businesses, 57% of retail sales are generated by Lake County residents. Drive-through travelers and local tourists account for 37 and six percent, respectively. Similarly, 55% of receipts for services in the survey are due to Lake County residents, with 40 and five percent of services receipts generated by drive-through travelers and local tourists, respectively. Drive-through traveler expenditures are important and occur mainly at retail businesses.[122]

Other findings of the Arlee business survey are listed below:

- Arlee business operators consider Arlee's trade area to extend into southern Lake County and Missoula, and 69% believe they have a competitive advantage because of their location. Major competitors are viewed as being in Missoula and located outside Arlee on US 93.

- Through traffic on US 93 tends to be seasonal. Arlee's highway traveler and tourism-oriented businesses tend to be more busy in the summer months.

- Traffic congestion interferes with customer access to businesses on US 93 during summer months; 44% of businesses cited summer highway congestion as "frequently" or "occasionally" restricting access.

- Compared with Ronan, Arlee indicated less growth in the local economy; fewer than 50% reported 1992 was at least an above average year, and 25% said 1992 was the best year ever.

- Arlee businesses are optimistic about the future; 63% expect to grow by at least five or 10% a year in the next five years; 25% of businesses said sales in 1992 were the best ever.

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[119]U.S. Department of Commerce, Bureau of the Census. Census of Population. 1950-1990.
[120]Morrison-Maierle, based on information from Summary Tape File 3 of the 1980 and 1990 U.S. Census.
[121]Morrison-Maierle, Inc., Social and Economic Field Research at Arlee, Montana; April 1990.
[122]Jim Boyer. Ronan Business Operators Survey. 1993.

In 1990, a study that included 22 Arlee businesses found that retail trade generated 59% of sales and 51% of employment. The study also found that 62% of sales by retail trade businesses were made to Arlee residents, with the remaining 38% of sales made to people who did not live in Arlee.[123]

6.5.3.2. Ronan

Ronan benefits from being the largest community in the central part of Lake County. Economic activity in Ronan is concentrated along the route of US 93 and on Main Street, the original business district. Many businesses on US 93 are oriented to serving highway travelers and local tourists.

In 1990, of the 560 persons who lived in Ronan and were employed, 200 (36%) were employed outside the community; 68% of Ronan residents were employed in retail trade and services establishments, with seven percent employed in manufacturing and 25% employed by other types of businesses.[124,125]

In 1992, there were 188 businesses located in Ronan, of which 10% were highway-oriented establishments. There were 12 highway-oriented businesses located along US 93. Overall, 23% of total businesses in Ronan were located along US 93.[126] (Tables 6.5-2 and 6.5-3)

According to the results of a 1993 survey of Ronan businesses, 75% of retail sales are generated by Lake County residents. Drive-through travelers and local tourists account for 20 and five percent of retail sales, respectively. Similarly, 92% of receipts for services in the survey are due to Lake County residents, with six and two percent of services receipts generated by drive-through travelers and local tourists, respectively. As with Arlee businesses, drive-through traveler expenditures are important and occur mainly at retail businesses.[127]

Other findings of the Ronan business survey are listed below:

- Most businesses identify Ronan's trade area as south and central Lake County, from Ravalli to Polson. Ronan's role as the county's agricultural service center is especially important to the local economy.

- Eighty-six percent of businesses located on US 93 believe they have a competitive advantage because of their location, and 81% identify major competitors as other businesses on the highway in Ronan. Polson and Missoula businesses also are important competitors.

- Businesses on US 93 have higher sales and more employees than businesses located in the central business district (CBD) on Main Street.

- Ronan's highway traveler and tourism-oriented businesses are more busy in the summer months, the period when those businesses indicate they must achieve most sales. Seasonality of trade is reflected in higher employment in retail trade and services in the summer months.

- Businesses in the CBD are less oriented to serving travelers and tourists and more oriented to the area's local and regional populations. Only 36% of CBD businesses believe they have a competitive advantage because of their location. Businesses in the CBD most frequently identified Polson and Missoula as the locations of major competitors.

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[123]Estimated Economic Impact on Arlee of Rerouting U.S. Highway 93; Paul Polzin; 1990.

[124]U.S. Department of Commerce, Bureau of the Census, Census of Population, 1990.

[125]National Cooperative Highway Research Program, Comparative Analysis of Highway Bypass Impact Studies, Nancy L. Bennett and Martin M. Stein, January 1973.

[126]Morrison-Maierle, Inc., Social and Economic Field Research at Arlee, Montana; April 1990.

[127]Jim Boyer. Ronan Business Operators Survey. 1993.

- During summer months traffic congestion interferes with customer access to businesses on US 93; 72% cited summer highway congestion as "frequently" or "occasionally" restricting access.

- Only 10% of CBD businesses cited congestion as a problem.

- The Ronan economy is growing; 71% of businesses reported that 1992 was at least an above average year, and 38% reported 1992 was the best year ever.

- Ronan businesses are optimistic about the future; 67% expect to grow by at least five or 10% in the next five years.

6.5.3.3. Polson

Polson benefits from being the southern most community on Flathead Lake, as well as the largest community in the area. Polson serves as a local and regional trade center for Lake County. Drive-through travelers and local tourists also are important for Polson businesses.

Polson's trade area is northern and central Lake County, and Polson's role as the county seat and a tourism destination are especially important to the local economy. Polson retail trade and services are concentrated on US 93 and in the city's CBD. Many businesses on US 93 are oriented to serving highway travelers and local tourists.

In 1992, there were 159 businesses located in Polson, of which 28% were highway-oriented establishments. There were 33 highway-oriented businesses located along US 93. Overall, 47% of total businesses in Polson were located along US 93.[128] (Tables 6.5-2 and 6.5-3)

According to the results of a 1993 survey of Polson businesses, 85% of retail sales are generated by Lake County residents. Drive-through travelers and local tourists account for nine and six percent of retail sales, respectively. In comparison, only 44% of receipts for services in the survey are due to Lake County residents, with 23 and 34% of services receipts generated by drive-through travelers and local tourists, respectively.[129]

Other findings of the Polson business survey are listed below:

- Eighty-eight percent of businesses located on US 93 feel they enjoy a competitive advantage because of their locations, and 60% identify major competitors as other businesses on the highway in Polson.

- Businesses on US 93 have higher sales and more employees than CBD businesses.

- As with Ronan, businesses in Polson's CBD are less oriented to serving travelers and tourists, and more oriented to providing goods and services to local and regional populations. Only one-third of downtown businesses believe they have a competitive advantage because of their locations.

- Drive-through traffic on US 93 and local tourism tend to be seasonal. Polson's highway traveler and tourism-oriented businesses are more busy in the summer. The offseason downturn in the local economy is further intensified by the winter out-migration of many of Polson's retired residents. Seasonality of trade is reflected by reductions of workforce and payroll in the offseason.

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[128]Morrison-Maierle, Inc., Social and Economic Field Research at Arlee, Montana; April 1990.
[129]Jim Boyer. Ronan Business Operators Survey. 1993.

- During summer months traffic congestion on US 93 interferes with customer access; 64% cited summer traffic congestion as frequently or occasionally restricting customer access, compared with 44% for CBD businesses.

- In the summer months, for businesses on US 93, 20% experience frequent restrictions of customer access, 44% experience occasional restrictions and 36% do not experience a problem. In the winter months, for businesses on US 93, 12% experience frequent restrictions of customer access, 16% experience occasional restrictions and 68% do not experience a problem. In the summer months for downtown businesses, 11% experience frequent restrictions, 33% experience occasional restrictions and 47% do not experience a problem. In the winter months for downtown businesses, zero percent experience frequent restrictions, 14% experience occasional restrictions and 81% do not experience a problem.

- The Polson economy is growing; 60% of businesses reported 1992 was at least an above average year, and 25% reported 1992 to be their best year ever.

- Polson business operators are optimistic about the future; 62% expect business to grow by at least five or 10% a year in the next five years. Local tourism is expected to make an increasingly positive contribution to Polson's local economy; 68% of businesses expect local tourism to grow at least five or 10% annually.

6.5.4. Tourism

According to the *Lake County Overall Economic Development Plan: 1990 Update*, tourism, with its emphasis on sales and employment in retail trade and services, is one of Lake County's four major industries.[130] The scenic attractions of the region make it a destination for the travel and tourism industry. (Section 6.5.1)

US 93 is the major north-south route for tourism and recreation traffic between Missoula and the Flathead Valley-Glacier National Park region. Between 1980 and 1991, annual visits to Glacier National Park increased by 36%.[131] Similarly, between 1985 and 1991, winter skier visits at Big Mountain Ski Resort north of Whitefish increased by 20%.[132]

The highway also is important for tourism travel between Glacier and Yellowstone National Parks. In 1990, 36% of nonresidents traveling on US 93 also visited Yellowstone National Park, and 21% of all nonresidents traveling on the highway visited both national parks.[133]

Between 1988 and 1991 the amount of revenue (not adjusted for inflation) collected by the accommodations tax in Lake County increased by 69%. The tourism industry has seasonal variations in activity. In 1990 and 1991, 83% of revenue from the accommodations tax was collected from June to December.[134] (Figures 6.5-1 and 6.5-2)

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[130]Lake County Overall Economic Development Committee. Lake County Overall Economic Development Plan: 1990 Update. 1990.
[131]Bureau of Business and Economic Research, University of Montana, Montana Business Quarterly: Outlook Winter 1991; P. 22.
[132]Flathead Convention and Visitors Association, 1991.
[133]Montana Department of Commerce, Montana Promotion Division and Institute for Tourism Research, University of Montana, 1992.
[134]Ibid.

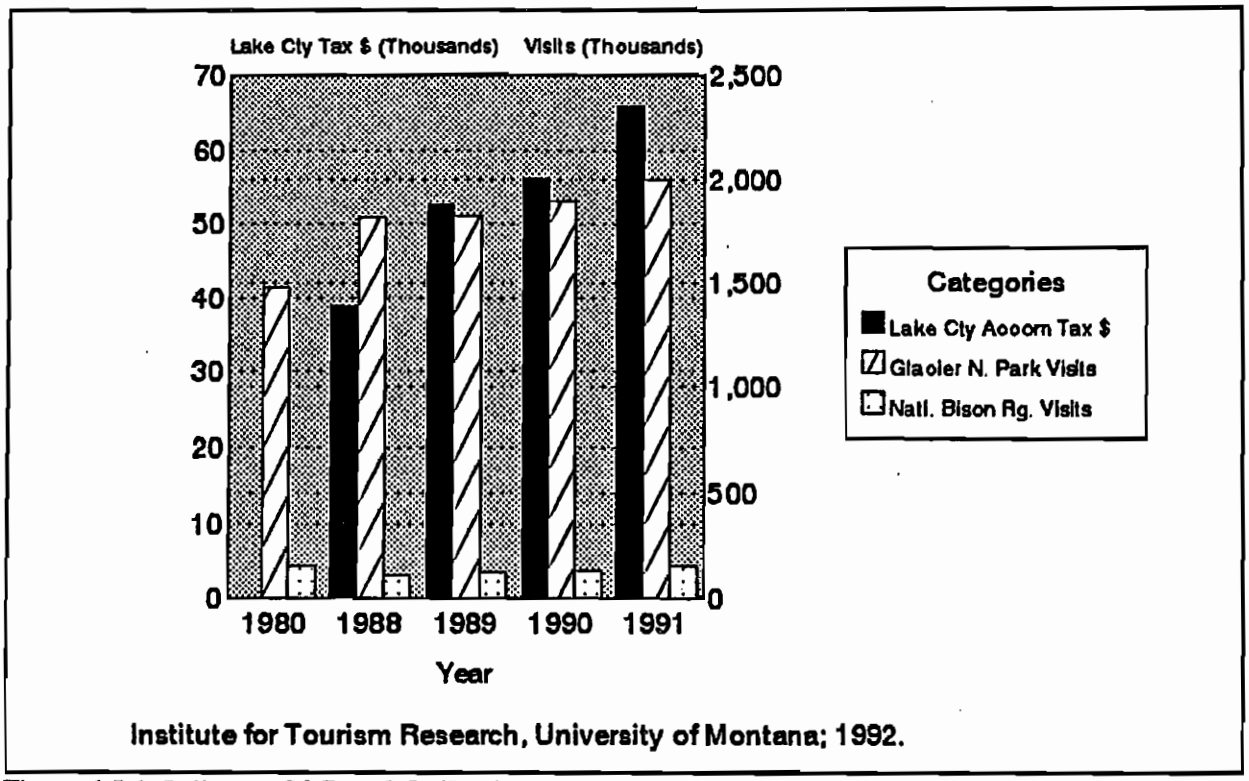

Figure 6.5-1 Indicators Of Growth In Tourism

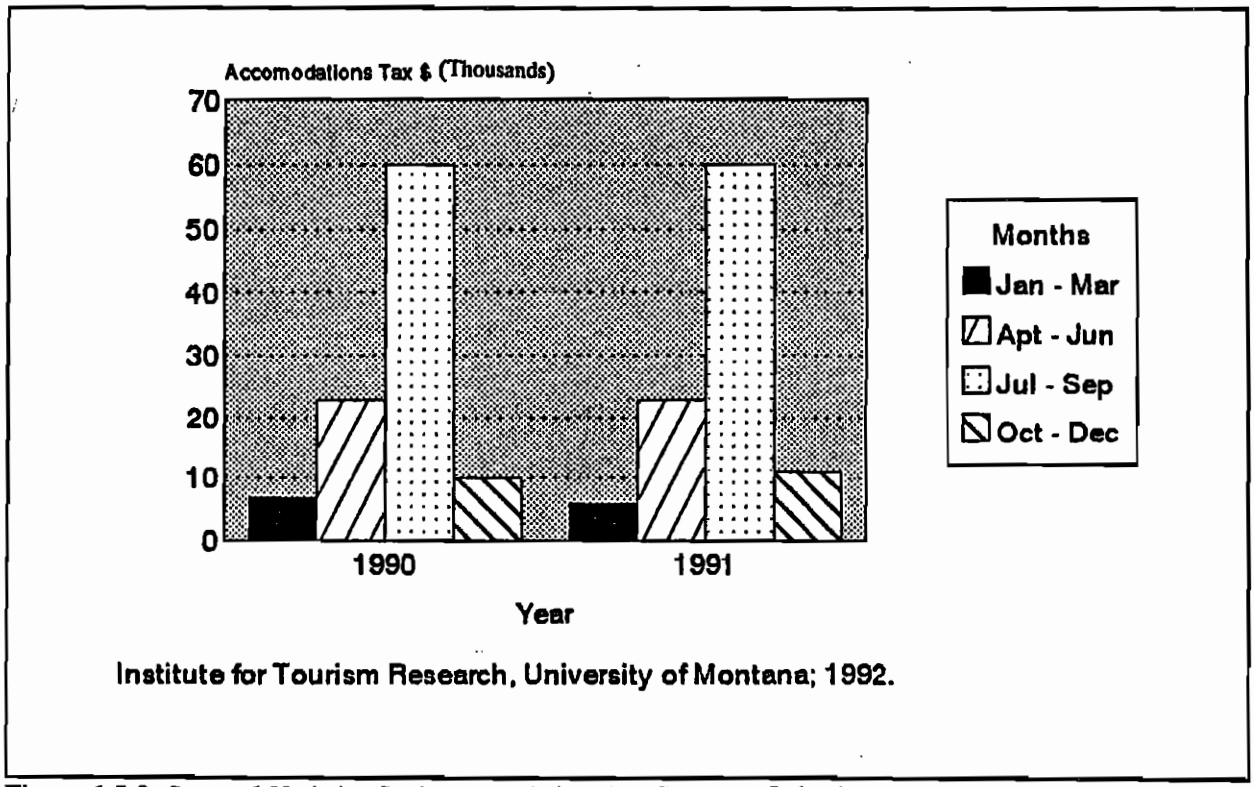

Figure 6.5-2 Seasonal Variation In Accommodations Tax Revenue: Lake County

6.6. PEDESTRIANS AND BICYCLISTS

Most pedestrian travel is concentrated in Evaro, Arlee, Ravalli, St. Ignatius, Ronan, Pablo and Polson. Only limited numbers of pedestrians travel along or cross US 93 in rural areas -- distances between communities are generally too long.

School age (under 16) bicycle travel is also mostly concentrated in and around these communities. Travel along the highway in rural areas between the communities occurs but volumes are currently not high. Table 6.6-1 summarizes bicyclists counted during eight-hour periods during the summer of 1992 (July) at four separate locations along US 93.[135] A growing number of bicyclists (mostly adults) are traveling greater distances along the highway and bicycle touring is increasing. The route is becoming known as a high quality bicycle touring area. Nine known tour groups pass through the area each year. Local agencies and business groups have indicated they expect the numbers and size of these tours to increase. Residents have indicated that once a year a tour of 500 to 600 bicyclists goes through the area. Because of the existing narrow shoulders, vehicles are hesitant to pass them and traffic backs up, causing a safety problem.

In a letter to the Montana Department of Transportation dated August 26, 1992, the Federal Highway Administration states: *"It is important to keep in mind the needs on Indian Reservations. Indian homes are often spread out along a major road, not grouped together in a subdivision...The exposure rate is high and separate bike paths need to be considered between housing developments and local communities on Indian Reservations."*

There are no existing designated facilities for pedestrians or bicyclists in rural areas of the highway between the communities. As indicated on Table 6.1-1, existing paved shoulder widths are generally two- to four-feet wide with short areas of six, eight and 10-foot shoulders. Shoulder width of four feet or less will accommodate some of the utilitarian[136] type bicycle trips, but they are not considered desirable for most pedestrian or bicycle traffic. The AASHTO Bicycle Guide[137] indicates that if motor vehicle speeds exceed 35 mph or if the percentage of trucks and recreational vehicles is high, then additional width is particularly desirable.

School children are picked-up and dropped-off at various locations along the length of the proposed action. There are currently no special pullouts or pavement widening for school buses. School officials have indicated that there is a policy, and school children and parents are advised that children should enter and leave the buses on the same side of the roadway on which they live. The school officials indicate, however, that the policy is not currently strictly enforced and some school children cross US 93.[138]

In the Evaro, Ravalli and Post Creek areas, pedestrian and bicycle crossings occur, but no particular problems have been identified during the public scoping process. There are no active public schools in the these areas. There are no existing designated pedestrian or bicycle facilities.

At the "Mule Palace" area near Milepost 9.9, a complex which includes an outdoor arena and a convenience store/gasoline station, owners of the property and other participants in the public scoping process have indicated

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[135]Morrison-Maierle, License Plate Classification and Count Study, August 1992

[136]In general, bicycle trip purposes can be divided into two broad types, utilitarian and recreational. For a bicyclist on a utilitarian trip, the primary objective is reaching a specific destination quickly with few interruptions. The utilitarian bicyclist has the ability to ride safely and confidently in heavy traffic and commonly does so because the route is more direct and saves time. A recreational bicyclist is riding primarily for pleasure and the destination is of less importance. Recreational bicyclists commonly avoid busy streets and highways because they perceive the route as less aesthetically pleasing and less safe, and they are willing to go out of their way to ride on residential streets or paths. In actual practice, most trips will have some utilitarian and some recreational purpose. Bicyclists touring the length of the proposed action, or segments of the highway between communities, in some cases, have a recreational purpose to their trip, but for analysis in this document, they are considered principally utilitarian because they are experienced and confident travelling along a busy highway.

[137]American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities, August 1991.

[138]Lake and Sanders County Superintendents Meeting, 11 September 1995, conducted by Joyce Decker Wegner, County Superintendent of Schools.

Table 6.6-1 Bicycles Counted within the Study Area

Location	Total Bicycles Counted
U.S. Highway 93, North of I-90	2
Intersection, U.S. Highway 93 and Montana 200	5
Intersection, U.S. Highway 93 and Secondary Highway 212	1
Intersection, U.S. Highway 93 and Montana Highway 35	7

Morrison-Maierle. License Plate Classification Study. August 1993.

that substantial numbers of vehicles park on both sides of the highway during large events. Substantial numbers of highway crossings by pedestrians occur. Many of these crossings occur at night. There were no recorded accidents involving pedestrians or bicyclists at the site during the 1987 - 1991 period, but individuals have indicated they feel the area is dangerous for pedestrians, and there have been several "near misses."

In Arlee, there is currently one designated pedestrian crossing which consists of a painted crosswalk, advance warning signs and a flashing, amber colored warning light mounted over the highway at "B" Street. This street is the main route from US 93 to the Arlee Schools (elementary, middle and high schools) located two blocks to the east. Many pedestrians, particularly students, use this crossing, but a large number do not and instead cross at various locations where it is most convenient. Most of the crossings occur during the lunch hour and after school as a result of students crossing from the schools on the east to homes and convenience stores, restaurants and other businesses located on the west side of the highway. School representatives have indicated that many students, who are close enough to walk, choose to be bussed to school instead of crossing the busy highway.

Representatives of the schools and other individuals have indicated the "B" Street flashing light should be upgraded. Pedestrian counts, studies and analyses that have been conducted indicate that, based on guidelines of FHWA,[139] a full traffic signal (a signal with red, green and amber indications as opposed to the existing amber colored warning light) is not yet warranted by pedestrian patterns and volume at "B" Street but may be in the near future.

There are no sidewalks in Arlee. Pedestrians and bicyclists travel along both sides of the existing highway through the business and residential areas. The existing, mostly unpaved space between the highway and business fronts is generally more than 25-feet wide. Pedestrians and bicyclists also travel along residential streets paralleling and intersecting US 93. There is one recently constructed eight-foot asphalt paved bicycle/pedestrian path paralleling the east side of the highway from "A" Street (Whitworth/Morigeau) at Milepost 17.8 to Finley Creek Road at Milepost 18.1.

The existing highway in Arlee includes two driving lanes (one for each direction of travel) with no designated left-turn bays. The highway is straight and level, and the posted speed limit is 35 mph with most drivers traveling at this speed but a few driving faster. Participants in public scoping meetings have indicated that some people ignore the speed limit and some ignore crosswalks.

Members of the staff of the Confederated Salish and Kootenai Tribes have indicated that they have witnessed pedestrians and bicyclists utilizing highway ROW south of Arlee between town and Jocko Road. A member of the community team in Arlee recommended that a bicycle/pedestrian path be constructed here.

[139]Federal Highway Administration, Manual on Uniform Traffic Control Devices, 1988.

In St. Ignatius, the existing highway is located at the west edge of the city limit and away from schools and most businesses. Pedestrian and bicycle volumes are low and no problems have been identified during the public scoping process. At the public hearings, comment was made about the need for safe pedestrian crossing to and from Doug Allard's store and museum.

In Ronan, one designated crossing exists at Adams Street (two blocks south of Round Butte Road) and consists of a painted crosswalk with no flashing warning light or traffic signals. A full traffic signal, without pedestrian activated phases is in place at Round Butte Road (MTS~~FAS~~ 211), and a flashing amber warning light is in place at Eisenhower Street (six blocks south of Round Butte Road), but no designated crosswalks have been installed. Residents and city officials have indicated the crosswalk at Adams Street is used by some pedestrians, but it is ignored by a large number who cross the highway wherever it is most convenient. A substantial portion of the pedestrians in Ronan are school children -- school representatives have expressed opinions that additional and improved pedestrian crossings are needed. School representatives have indicated that many students, who are close enough to walk, choose to be bussed to school instead of crossing the busy highway.

There are intermittent areas with sidewalks along US 93 in Ronan. There is no designated bicycle path. Generally, pedestrians and bicyclists travel along the sides of the existing highway using the sidewalks and an open area between the existing pavement and business fronts that is generally over 20-feet wide. Pedestrians and bicyclists also travel along residential streets paralleling and intersecting US 93.

The existing highway in Ronan includes two driving lanes (one for each direction of travel) and a continuous two-way left-turn center median. The posted speed limit is 35 and 25 mph with most drivers traveling at these speeds but a few driving faster. Participants in public scoping meetings have indicated that some people ignore the speed limit and some ignore crosswalks.

In Pablo, Two Eagle River School (a private high school) and Salish Kootenai College are located adjacent to the east side of the highway. The tribal complex and other buildings~~, a restaurant and other businesses~~ are located on the west side. Residences are located on both sides of the highway. These conditions have generated substantial numbers of pedestrians crossing the highway and public comments have been received indicating problems, describing many near misses. They express the need for revisions to the existing highway and for proper safety measures to be incorporated in the proposed action. Representatives of the two schools have indicated that a larger than normal number of handicapped students attend the schools and cross the highway -- the schools are handicapped accessible.

The existing highway in Pablo includes two driving lanes (one for each direction of travel) and a continuous two-way left-turn center median. Public comment has reported that drivers often illegally use this median lane for passing. The highway is straight and level, and when the posted speed limit was 55 mph, public comment indicated ~~and the posted speed limit is 55 mph -- public comment has indicated that~~ many drivers travel faster. There are no designated facilities for pedestrians or bicyclists.[140]

In Polson, US 93 is used by both pedestrians and bicyclists for utilitarian and recreational purposes. Bicycle use is intermittent, with usage along US 93 probably owing to the high number of unrestricted access drives, the narrow or lack of shoulders and the narrow sidewalk along the Flathead River bridge. Many Polson residents who are familiar with the difficulties associated with bicycling along the highway use Fourth Avenue instead of US 93.

A gravel pedestrian and bicycle path separated from the highway is located in Polson between Rocky Point Road and the west end of the Flathead River bridge. A local citizens group has plans to extend this path along the

[140] After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

lakeshore to the east through Polson. Paved shoulders are located along most of the highway, east of Second Street East, with varying width. Between Bay Shore Drive and MT 35, the north-side shoulder is not well defined and blends into the parking lots for the commercial properties in this location. In the segment directly adjacent to Flathead Lake, Second Street East to Fourth Avenue, a five-foot shoulder is provided on the north side. Although this segment is signed as a designated bicycle route, it is not an official bikeway.

There are sidewalks along Second Avenue (US 93 through downtown Polson) on the north and south sides, and along the south side of the Flathead River bridge. East of the downtown area, however, there are no sidewalks along the highway.

Most pedestrian activity is concentrated in downtown Polson, which extends from the east end of the Flathead River bridge for four blocks to the KwaTaqNuk resort. Although painted crosswalks exist at the intersection of Main Street and Second Avenue, the safest pedestrian crossing is at First Street East, where a traffic signal is installed.

There is a designated pedestrian crossing which consists of a flashing, amber colored warning light and pedestrian crossing sign located near the Super 1 Foods grocery in Polson. Some residents have expressed the need for a pedestrian-activated traffic signal and crosswalk to be located in even closer proximity to Super 1 Foods. Many pedestrians, particularly residents of the senior complex, use this crossing but some do not and instead cross at various locations where it is most convenient.

As expressed by participants at the public meetings in Polson, crossing US 93 can be difficult for residents living both north and south of the highway. Many of the pedestrians are residents of a large senior citizen apartment complex, located north of the highway, who seek access to the shopping, churches and other services south of the highway. The majority of Polson residents, however, live south of US 93. These residents, including children on bicycles or foot, must cross the highway to access Flathead Lake and the several parks located along the lake. Boettcher Park, located north of the highway, is extensively used by Polson children.

~~Accident records on US 93 indicate that, during the five-year period including 1987 through 1991:~~

- ~~One fatal pedestrian accident occurred in Arlee.~~
- ~~In Ravalli, one bicycle accident occurred that resulted in a non-incapacitating injury.~~
- ~~In St. Ignatius, one bicycle accident occurred that resulted in a non-incapacitating injury.~~
- ~~In Ronan, no pedestrian or bicycle accidents occurred.~~
- ~~In the Pablo area, one bicycle accident occurred that resulted in a non-incapacitating injury and one pedestrian accident occurred that resulted in an incapacitating injury.~~
- ~~In Polson, one bicycle accident occurred that resulted in a non-incapacitating injury, and two pedestrian accidents occurred; one resulted in a fatality and one a non-incapacitating injury.~~

~~Individuals have indicated, during the public scoping process, that a bicycle tourist was fatally injured on US 93 near Post Creek Road (Milepost 38.1) during the summer of 1992, and that a pedestrian attempting to cross the highway was struck by an automobile near the senior apartment complex.~~ Several accidents involving pedestrians and bicyclists have occurred during the years 1990 to 1994. These are listed in Table 6.6-2.

Table 6.6-2 Accidents Involving Pedestrians and Bicyclists

Type	Milepost	Date	Injury Severity
Bicycle	27.1	Sep 1990	Non-Incapacitating
Bicycle	45.7	Aug 1990	Incapacitating
Pedestrian	52.8	Oct 1990	Incapacitating
Pedestrian	9.3	Apr 1992	Incapacitating
Pedestrian	27.1	Aug 1992	Fatal
Bicycle	39.1	Aug 1992	Fatal
Pedestrian	4..0	Mar 1992	Incapacitating
Pedestrian	60.9	Jul 1992	Incapacitating
Pedestrian	32.5	Oct 1993	Fatal
Pedestrian	46.3	Oct 1993	Incapacitating
Bicycle	51.9	Jun 1994	Non-Incapacitating
Pedestrian	60.9	Jan 1994	Incapacitating
Pedestrian	60.9	May 1994	Fatal

Montana Department of Transportation. Accident Records System. 1990-94.
This table has been added to the final EIS

6.7. AIR QUALITY

More detailed information on the affected environment regarding air quality is included in Appendix F.

6.7.1. Regulatory Background

The United States Environmental Protection Agency (EPA) has the primary responsibility of ensuring compliance with the National Ambient Air Quality Standards (NAAQS). This is accomplished by classifying all parts of the country as either 1) "attainment," where existing concentrations are less than the NAAQS limits, 2) "non-attainment," where concentration levels exceed the NAAQS limits more than once or twice a year, or 3) "unclassified," where there are insufficient data to establish a classification. Regulations require that non-attainment areas develop implementation plans to lower the pollutant concentration to less than NAAQS levels.

Ronan and Polson are designated as non-attainment areas for PM_{10}. As a result, a draft Technical Support Document (TSD)[141] has been prepared by EPA Region VIII to address control strategies for these areas prior to the development of a tribal implementation plan. The Polson portion of the draft TSD was finalized in February 1993.[142] Future finalization of the Ronan portion is anticipated.

Remaining areas are currently classified as either "attainment" or "unclassified".

Because the proposed action is almost entirely within the boundaries of the Flathead Indian Reservation, the Montana Ambient Air Quality Standards (MAAQS) are not applicable. EPA regulations and NAAQS regulations apply and are supported by local Tribal Air Quality Program oversight. The federal government maintains enforcement authority. Such authority necessarily recognizes Tribal Class I Air Quality Redesignation for the Flathead Indian Reservation. ~~EPA regulations, the NAAQS regulations and local regulations apply.~~

6.7.2. PM_{10} Violations

Because Ronan and Polson are designated as non-attainment areas for PM_{10}, a draft TSD[143] has been prepared by EPA Region VIII to address control strategies for these areas preliminary to the development of a tribal implementation plan. The Polson portion of the draft TSD was finalized in February 1993.[144] Future finalization of the Ronan portion is anticipated.

6.7.3. PM_{10} Sources

Particulate emissions from mobile sources consist of exhaust or tailpipe emissions of lead, organic compounds, and sulfates, and fugitive emissions from travel on roadways. Tailpipe particulate emissions are approximately three orders of magnitude less than the fugitive emissions and so they were not included in this quantitative study. Fugitive particulate emissions and PM_{10} ambient concentrations arise from the presence of particulate matter, typically soil and winter sanding material, on the roadway. Soil may be deposited on paved roadways by tracking from unpaved areas by vehicle tires. Fugitive emissions may be high for a short period of time in early-spring due to the accumulation of sanding material on highways over the winter months. Some respirable particles are present in the sanding material; in addition, the grinding action of tires on the dry roadway surface creates respirable

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[141]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[142]Personal communication with Ms. Susan Zazzali, EPA Helena Office, March 4, 1993.

[143]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[144]Personal communication with Ms. Susan Zazzali, EPA Helena Office, March 4, 1993.

particulates from the larger particles. Ideally, sanding material is removed from streets and highways within two weeks after the last spring snow. The highest PM_{10} concentrations are expected in the areas where large volumes of sanding material are used and where many unpaved streets intersect US 93.

On 10 April 1991, a road dust study was conducted in the non-attainment areas of Polson and Ronan by the Montana Air Quality Division (AQD)[145] to help identify the source of high ambient PM_{10} concentrations measured in those two communities. The study included a turning lane on US 93 in Ronan and a southbound lane on Main Street in Polson. The study measured the amount of small particles found on the roadway and used the data to calculate PM_{10} emission factors. These emissions factors are applicable in a limited area for a limited time, but the AQD was able to demonstrate that fugitive emissions from travel on roadways with these levels of particulate matter can be expected to produce ambient levels of PM_{10} which exceed the standards.

6.7.4. TSD Strategies

The PM_{10} control strategies discussed in the draft TSD[146] for PM_{10} attainment on the Flathead Indian Reservation include: street and highway sweeping on an average of once every five days; the use of "clean" sand which contains fewer smaller particles; and the use of alternative road applicants such as chemical deicer.[147]

The draft TSD recommends a combination of the aforementioned strategies to reduce PM_{10} concentrations by 43% and thus bring the area into compliance. The use of chemical deicer and clean sand since the winter of 1992-93 has resulted in no PM_{10} exceedences at Polson and Ronan between January 1992 and April 1996.

An MOA for the Polson PM_{10} Non-Attainment Area has been developed between CSKT, the city of Polson, Lake County, MDT and EPA. The MOA requires two control measures: 1) the application of only clean sand or chemical deicer to road surfaces and 2) sweeping and cleaning driving lanes, shoulder gutters and drop drains within the Polson city limits. These are current practices for MDT on US 93. A strategy is also presented to determine the frequency of street sweeping activities. Jurisdiction of the various agencies for specific streets within the Polson city limits has not been finalized. A similar MOA is anticipated for the Ronan PM_{10} non-attainment area.

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[145]GeoResearch, Inc., Confederated Salish and Kootenai Tribes of the Flathead Reservation, Air Quality Data Report, Second Quarter 1990 - First Quarter 1991.

[146]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[147]Komp, pp. 55-63.

6.8. NOISE

6.8.1. Noise Parameters and Criteria

Sound is the result of objects being set into vibration. The range of magnitude from the faintest to the loudest sound humans can hear is so large that sound pressure is expressed on a logarithmic scale in units called decibels (dB). Under the logarithmic decibel scale, a noise source emitting a noise level of 60 dB combined with another noise source of 60 dB yields a noise level of 63 dB, not 120 dB. To simulate how humans hear various frequencies of sounds, the overall frequency spectrum is measured as A-weighted decibels (dBA). Loudness, compared to physical sound measurement, refers to how individual humans subjectively judge a sound.

Noise levels from traffic depend on volume, speed, percentage of trucks, topography, vegetation, and distance from the roadway to receptor. Generally, an increase in volume or speed will increase traffic noise levels. For a line source such as roadway traffic, noise levels will decrease three dBA over hard ground (concrete, pavement) or 4.5 dBA over soft ground (grass) for every doubling of distance between the roadway and receptor. For a point source such as stationary construction equipment, noise levels will decrease six dBA for every doubling of distance.

Environmental noise commonly is expressed as the equivalent sound level (Leq), which can be considered the average noise level. Leq places more emphasis on occasional high noise levels that accompany general background noise levels. Leq measured over a one-hour period is the hourly Leq (Leq(h)), which FHWA uses for roadway noise impact and abatement analyses.

6.8.2. Existing Noise Levels

Land uses in the area along US 93 range from rural farmland to the communities of Evaro, Arlee, Ravalli, St. Ignatius, Ronan, Pablo, and Polson. The primary existing noise source is traffic on US 93. Approximately three trains per week use the railroad tracks that intermittently run parallel to US 93.

Noise measurements were taken along US 93 from 1988 through 1990. At locations between 50 and 100 feet from the centerline of US 93, measured Leq noise levels ranged from 64 to 68 dBA. At locations without roadway noise, measured ambient noise levels were an Leq of 47 dBA.

6.9. WATER QUALITY

6.9.1. Surface Water Hydrology

6.9.1.1. Location and Characteristics of Surface Water Features

Tributaries of the Flathead River, including the Jocko River, have headwatersheadwater on the west side of the Mission Mountains. The rivers and streams cross US 93 throughout the area ~~and cross the highway.~~ Surface water runoff is to the Jocko and Flathead rivers, to various creeks crossing the existing highway, to several reservoirs including Ninepipe and Pablo reservoirs and to various other ponds and wetlands. Portions of the city of Polson and surrounding areas drain into Flathead Lake.

Table 6.11-1 lists streams and drainages crossed by US 93 and indicates their drainage areas, 100-year flood flows and crossing type (bridge or culvert). Locations of stream crossings are shown on Figure A-2 in Appendix A.

Appendix A, Figure A-2, Project Map, shows stream locations in relation to highway alignments.

6.9.1.2. Stream Flow and Lake Levels

Surface water is derived from precipitation and runoff. Maximum periods of runoff occur in spring and early-summer, primarily from melting snow in the Mission Mountains. Figure 6.9-1 shows the average pattern of runoff for the years 1970 to 1980 from the North Fork of the Jocko River and the Middle Fork of the Jocko River. Natural patterns of runoff in the valleys have been greatly modified by irrigation facilities which divert water from stream channels to irrigated fields and storage reservoirs.

Surface water discharge on the Flathead River five miles downstream from its outflow from Flathead Lake (Existing US 93 bridge location) has been continually measured since 1907. The drainage area of the Flathead River above this station is 7,096 square miles. The average discharge for this 84-year period has been 11,640 cubic feet per second (cfs). The maximum discharge was 82,800 cfs recorded in 1928, prior to the construction of Kerr Dam.

~~The surface elevation of Flathead Lake has been recorded at Somers, Montana sporadically from 1900 to 1910 and continuously since 1910. Prior to the completion of Kerr Dam in 1938, surface elevations ranged from 2,881 to 2,896 feet above sea level. Lake levels have been more stable since dam completion. During water year 1991, lake levels ranged from 2,885 to 2,893 feet. This represents a range in lake water storage from 843,800 to 1,810,000 acre feet.~~The pool elevations of Flathead Lake are controlled by Kerr Dam which is operated by the Montana Power Company under a license with the Federal Energy Regulatory Commission (FERC). The lake elevations follow a general cycle starting at full pool elevation of 2,893 feet about September 1. From October 1 through late-March or early-April, the lake is drawn down to a low pool elevation of 2,883 feet. Runoff normally begins to refill the lake by mid-April with elevations reaching about 2,890 feet by May 31 and full pool at 2,893 feet by June 15. The lake is operated near full pool elevation throughout the summer recreation season. Some variations of these general operating guidelines are allowed under the FERC license to meet requests for flood control and minimum releases.

6.9.1.3. Frequency and Magnitude of Precipitation Events

Normal mean annual precipitation at the Kalispell, Montana station north of the proposed action is 16.24 inches.[148] June is the wettest month with a mean normal precipitation total of 2.56 inches and a record monthly total of 4.72 inches.

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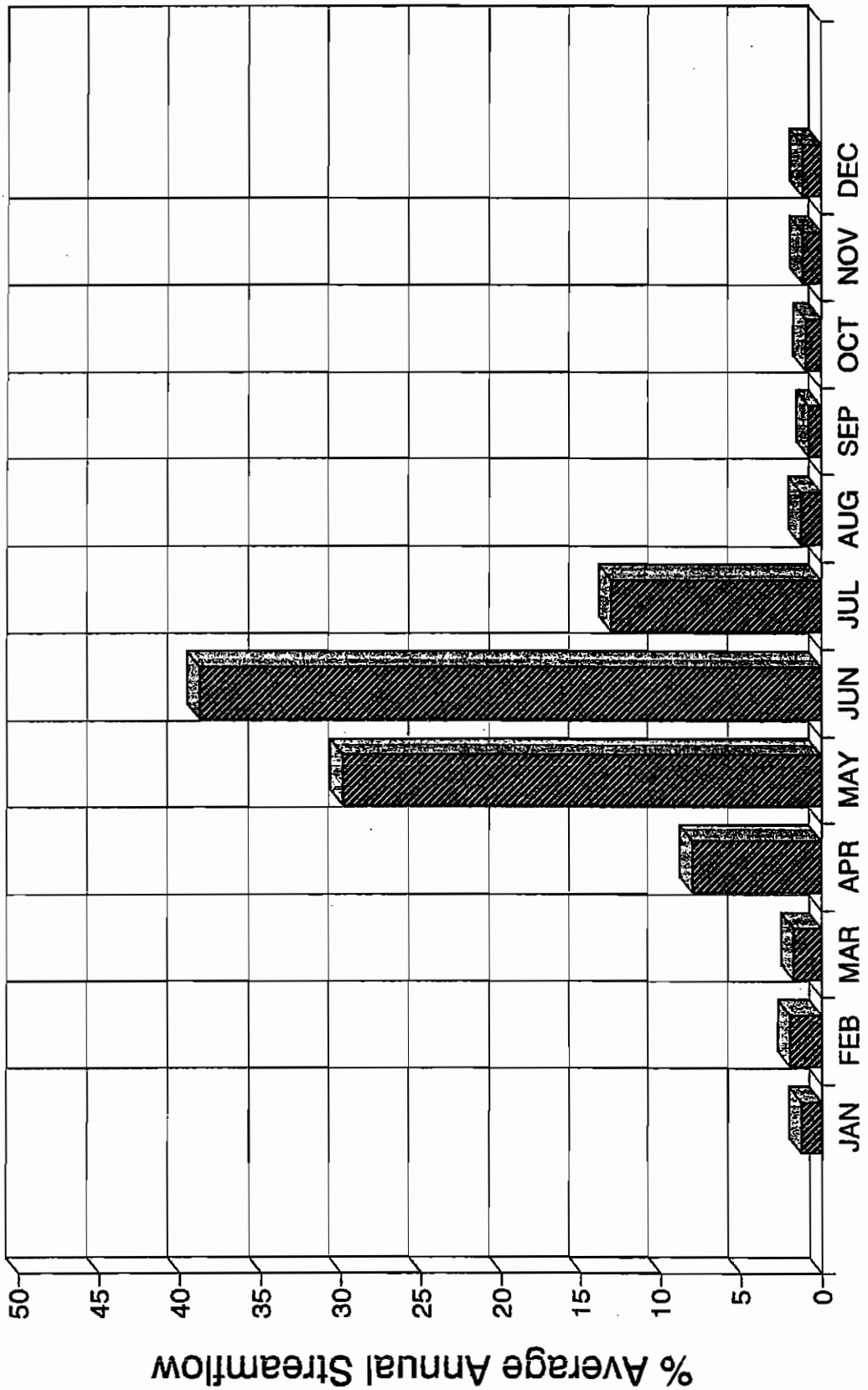
[148]National Oceanic and Atmospheric Administration. 1982. Climate of Montana, Climatography of the U.S. No. 60. National Climate Center, Ashville, North Carolina.



ANNUAL STREAMFLOWS, NORTH FORK JOCKO RIVER FIGURE 6.9-1

Maximum expected precipitation in the Polson area for events of six- and 24-hour duration has been calculated using National Weather Service data.[149] For a 100-year storm, more than three inches of precipitation can be expected in a 24-hour period. (Table 6.9-1)

Table 6.9-1 Maximum Projected Precipitation for Polson

	Return Period (years)					
Event Duration	2	5	10	25	50	100
6 hours	0.8"	1.1"	1.3"	1.5"	1.7"	1.8"
24 hours	1.4"	1.8"	2.1"	2.5"	2.8"	3.1"

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-Frequency Atlas of the Western United States, Vol. I-Montana. U.S. Dept. of Commerce, NOAA, National Weather Service.

6.9.2. Surface Water Quality

6.9.2.1. Water Quality Standards

Three streams, as indicated in Table 6.9-2, have been classified by the Confederated Salish and Kootenai Tribes.[150,151] ~~Water Quality Bureau of the Montana Department of Health and Environmental Sciences (MDHES - WQB), Administrative Rules of Montana (ARM 16.20.606). These classifications have remained unchanged since their designation in 1988. Jocko River and other streams and water bodies in the area of the proposed action have not been classified. CSKT has an ongoing water quality collection program, but information from that program is not available for this document.~~

6.9.2.2. Water Quality Data

In general, water quality is excellent at high elevations, but decreases in the lower elevations due to return flows from irrigated agriculture, drainage from septic tanks and runoff from farm and ranch sites. Water quality analyses of the Jocko River above Tabor Canal near Dixon showed that water quality decreases, but not greatly, between upstream and downstream sampling sites ~~(Table 6.9-3)~~. Data collected for the Jocko River from above Arlee and near Dixon showed that temperature, dissolved solids, fecal coliform, alkalinity, and specific conductance increase between upstream and downstream sites. Water quality for Flathead Lake has been monitored continuously at

[149]Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-Frequency Atlas of the Western United States, Vol. I--Montana. U.S. Department of Commerce, NOAA, National Weather Service, Silver Spring, MD. 41 pp.

[150]Confederated Salish and Kootenai Tribes, Surface Water Quality Standards and Antidegradation Policy, effective April 27, 1995. On February 27, 1995, the Environmental Protection Agency approved the TAS (Treatment as a State) application from the Salish and Kootenai Tribes to administer Section 303 of the Clean Water Act. The Tribes have now adopted water quality standards of Reservation-wide applicability.

~~[151]Presented for information only. State of Montana water quality standards do not apply on the Flathead Indian Reservation.~~

Table 6.9-2 Water Quality Classifications

Classification	Description
B-2	Mission Creek (mainstem), from its U.S. Highway 93 culvert crossing near St. Ignatius downstream to its confluence with the Flathead River.
B-2	Crow Creek (mainstem) from the road crossing in Section 16, T20N, R20W, P.M.M. to the Flathead River, including Lower Crow Reservoir.
A-1	That portion of Flathead Lake within the Flathead Indian Reservation.
B-1	Flathead River from the U.S. Highway 93 bridge in Polson downstream to its confluence with the Clark Fork.

Confederated Salish and Kootenai Tribes of the Flathead Nation, Surface Water Quality Standards and Antidegradation Policy, Effective Date: April 27, 1995.

several stations since 1977 by the Flathead Lake Biological Station.[152] These data indicate a trend of deteriorating water quality (increased nutrient loads) during the period of record due primarily to rapidly increasing human population within the drainage basin. Discharge from the lake to lower the Flathead River at Polson is generally cleaner than water entering the lake since much of the suspended sediment settles out to the lake bed.[153] (Table 6.9-3)

In conclusion, available water quality data indicate a relatively high quality aquatic environment for both lakes and streams in the headwaters and a decreasing water quality in the lower elevation stream valleys.

6.9.2.3. Erosion Rates

Natural sedimentation rates have been estimated using average soil textures, slope, and vegetative cover. For a 10-year, 24-hour storm (the greatest amount of rainfall during a 24-hour period expected during a 10-year period), it is estimated that 0.01 ton of sediment per acre (0.0075 cubic yard) would result.

6.9.2.4. Sole-Source Aquifers and Wellhead Protection Areas

There are no designated sole-source aquifers in the area of the proposed action.[154]

Polson is in the process of delineating a wellhead protection area to the south and east of the town as shown on Figure 6.9-2.[155] The area includes two zones: Zone I is the most sensitive zone as it immediately surrounds the Polson municipal water supply wells; Zone II is a less sensitive buffer area situated farther from the wellhead.

~~A w~~Wellhead protection areas ~~are~~is also proposed in Pablo and on property owned by the public schools on the east side of Arlee. The delineation process either has not begun or has not progressed sufficiently to provide site boundaries or other specific information in these areas.

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[152]Stanford, J.A., B.K. Ellis, D.W. Chess, J.A. Craft, and G.C. Poole. 1992. Monitoring Water Quality in Flathead Lake, Montana. Flathead Lake Biology Station, University of Montana, Open File Report 128-92. Polson, Montana 31 pp.

[153]Flathead Basin Commission. 1993. Flathead Basin Commission 1991-1992 Biennial Report (draft). Kalispell, Montana 64 pp.

[154]Personal communication with Mackin, C., Wellhead Protection Specialist, Water Quality Bureau, Water Resources Division, Montana; National Resources and Conservation Department, 1520 East Sixth Avenue, Helena, Montana. 1992.

[155]Ibid.

Table 6.9-3 Water Quality Parameters In The Jocko River Above Arlee and Near Dixon

Water Quality Parameter	May 18	June 15	July 13	August 24
Temperature (C°)				
Above Arlee	5°	9°	9.5°	9.5°
Above Dixon	8°	13°	14°	13°
Total Suspended Solids (mg/1)				
Above Arlee	1	2	<1	<1
Near Dixon	37	<1	5	2
Fecal Coliform (coliforms per 100 ml)				
Above Arlee	6	1	10	5
Near Dixon	66	18	67	76
Alkalinity (mg/1)				
Above Arlee	104	112	107	83
Near Dixon	99	119	127	141
Specific Conductance (nicromohs per cm)				
Above Arlee	170	190	210	180
Near Dixon	160	210	250	270

U.S. Fish and Wildlife Service. 1976.
Water quality parameters that were similar at both Arlee and Dixon are not presented.

Existing highway ditches intercept very shallow (generally less than 10-feet deep) aquifers at numerous sites, mainly in the Evaro, Post Creek and Ninepipe areas. Narrow wetland strips, most with abundant cattails, have developed along these wet ditches. The aquifers are developed in gravely and sandy alluvial fan deposits in the Evaro/Jocko Valley and St. Ignatius/Post Creek areas, and in gravely and sandy glacial and alluvial deposits in the Ninepipe, Ronan and Polson areas. The aquifers are supplied with water by natural infiltration of rain and snowmelt and, at many sites, by seepage from irrigated areas and nearby canals. ~~None of the shallow aquifers have any commercial or domestic use; existing wells all tap deeper aquifers.~~ These shallow aquifers~~, however,~~ are important water bodies since they can not be separated from the hydrologic unit because of surface-groundwater interaction. It is likely that shallow water is used for domestic purposes at several locations along the route. Wells in Arlee mostly draw water from a shallow aquifer developed in sand and gravel of the alluvial fan deposited by the Jocko River. Pablo has many shallow wells, many of them very old, hand dug wells which are not recorded -- these wells are mostly in the shallow aquifer.

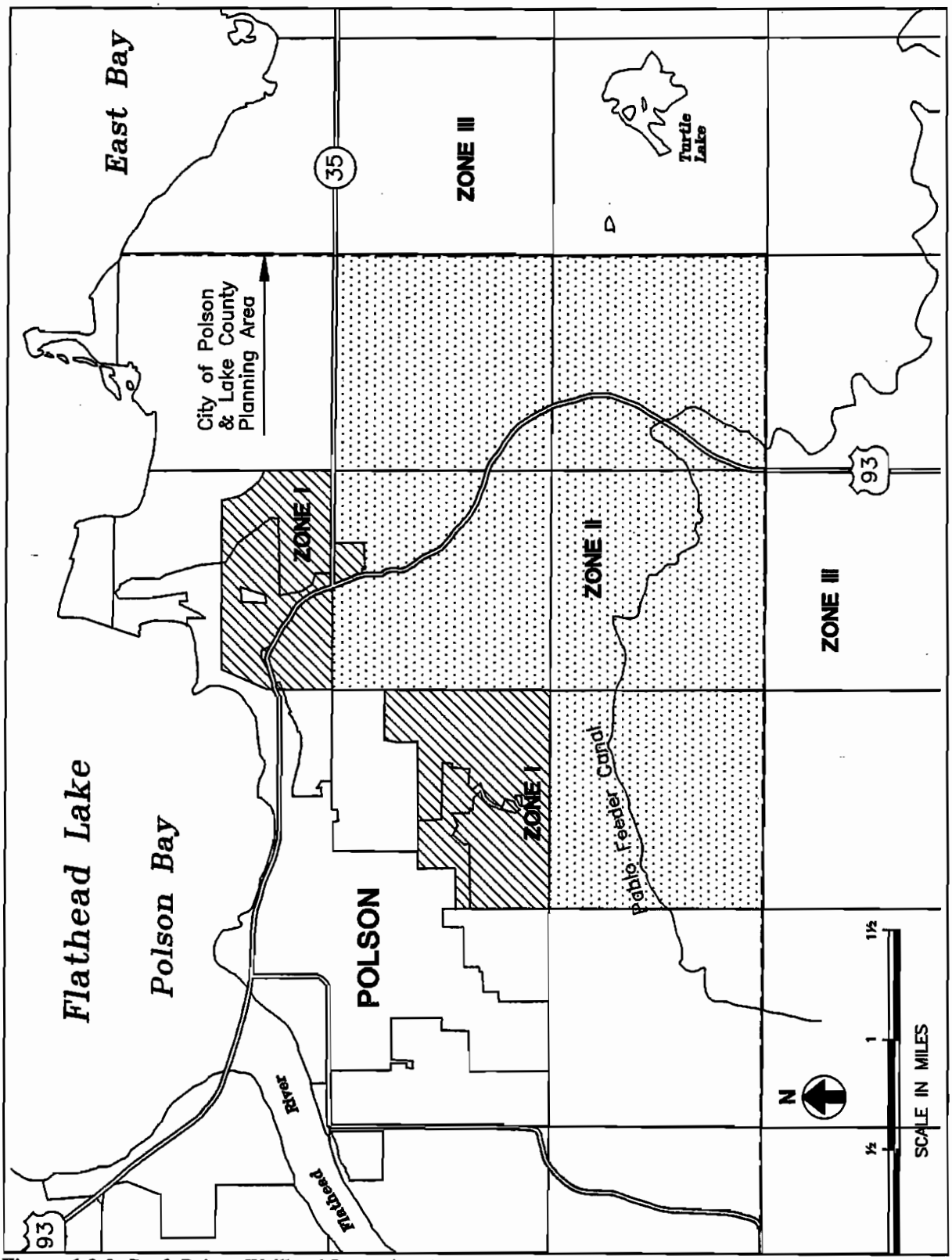

Figure 6.9-2 Draft Polson Wellhead Protection Areas

6.10. WETLANDS

US 93 traverses various wetlands and non-wetland riparian areas on the existing alignment. Additional wetlands and non-wetland riparian areas would be ~~are~~ crossed by the alignments under consideration at Arlee, Ronan and Polson. Wetlands, non-wetland riparian areas, and mixed wetland/riparian areas identified along the existing alignment were mapped on photo sheets and are presented in Appendix A. Each wetland along the existing alignment and Polson Alignments 1, 2 and 3 was delineated ~~mapped and described~~[156,157,158,159,160] ~~,~~ using the ~~draft process of the Montana Interagency Wetlands Group~~[161] ~~and~~ U.S. Army Corps of Engineers 1987 delineation manual ~~guidelines~~.[162] (Appendix A, aerial photographs and maps) Wetlands along the Arlee and Ronan alternative alignments were identified from national wetland inventory maps and color infra-red aerial photographs.

Generally, non-wetland waters of the U.S. occur as narrow perennial or intermittent channels which bisect wetland communities. As such, these channels were generally included within delineated wetland borders to minimize the "piece mealing" of jurisdictional areas. Non-wetland riparian areas were identified using the definition of riparian areas that was developed by CSKT and MDT in an MOA addressing wetland and riparian mitigation on tribal lands.

Each wetland and non-wetland riparian area along the existing and alternative alignments was classified, quantitatively evaluated in terms of its functions and values, and assigned an overall rating of Category I (exceptional value) to IV (low value) using the MDT wetland site evaluation method.[163]

The study complies with the requirements of Executive Order 11990, Section 404 of the Federal Clean Water Act as amended; ~~the Montana Stream Protection Act;~~ and Federal Highway Administration (FHWA) Technical Advisory T6640.8A.

Table 6.10-1, which is presented at the back of Appendix A, identifies a set of characteristics for each wetland and non-wetland riparian area along the existing and alternative alignments: classification; hydrologic type; hydrologic source; estimated size; prominent functions; overall rating; and estimated effects relative to each lane configuration under consideration. Four general wetland types are represented in the area: emergent (dominated by erect herbaceous species); shrub (dominated by woody species less than 20 feet tall); forested (dominated by woody species greater than 20 feet tall); and open water. Although many wetlands consist solely of emergent communities, many are comprised of a combination of these types. Non-wetland riparian areas are dominated by forested and/or shrub communities.

~~There are three types of wetlands in the area: Category I - ponds, Category II - marshes, and Category III - stream (riparian) zones.~~ Most open water areas occur as ~~ponds are in~~oval to circular potholes in the Ninepipe area; a few are in old borrow pits and abandoned river channels. Emergent communities ~~Marshes~~ the most abundant wetland type, occur in association with potholes, in strips along moist valley bottoms and in irregular patches in low springy

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[156]Morrison-Maierle, 1993. Wetland Inventory and Delineation, Project F 5-1(9)6. Unpublished report prepared for Montana Department of Transportation, Helena, Montana.

[157]Reichelt, L.S., 1989. Wetland Inventory and Biological Assessment for Montana Department of Transportation, Project F 5-1(8)6 Evaro - Dirty Corner. Unpublished report prepared for Stensatter Druyvestein & Associates, Missoula, Montana. p. 22

[158]Reichelt, L.S., 1989. Wetland Inventory and Biological Assessment for Montana Department of Transportation, Project F 5-2(34)17 Dirty Corner - Ravalli. Unpublished report prepared for Morrison-Maierle, Helena, Montana. p. 19

[159]Reichelt, L.S., 1989. Wetland Inventory and Biological Assessment for Montana Department of Transportation, Project F 5-2(38)28 Ravalli - North. Unpublished report prepared for Stensatter Druyvestein & Associates, Missoula, Montana. p. 19

[160]Reichelt, L.S., 1990. Wetland Inventory and Biological Assessment for Montana Department of Transportation, Project F 5-2(33)48 Ronan -Polson. Unpublished report prepared for Neil Consultants, Great Falls, Montana. p. 18

~~[161]Montana Interagency Wetlands Group. 1989. Interagency Memorandum of Understanding: Management and Mitigation of Highway Construction Impacts to Wetlands in the State of Montana. Helena, Montana.~~

[162]Environmental Laboratory, U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Department of the Army Waterways Experiment Station. Vicksburg, Mississippi. p. 100

[163]Montana Department of Transportation, Wetlands Site Evaluation Form. Unpublished methodology. Helena, Montana. 1994.

areas. Many of these sites have standing water or unchanneled surface flow during the spring and after rains, but they lack surface flow during the rest of the year. Narrow strips of emergent wetlands ~~marsh~~ also are in highway ditches wherever shallow groundwater is intercepted or surface runoff is blocked. Forested and shrub ~~Riparian~~ wetlands include large, complex areas along major creeks such as Post Creek and narrow, marshy to shrubby strips along small streams and roadside borrow ditches. Forested and shrub wetlands along drainages are often interspersed with non-wetland riparian areas. Similar marshy and shrubby wetland strips lie along canals with reliable water. Forested and shrub-dominated non-wetland riparian areas generally occur along active and historic drainage courses and adjacent to seeps and other wetland areas.

As determined using the MDT wetland site evaluation forms, the overall ~~functional~~ value of ~~each~~ individual wetlands varies from ~~is generally~~ low to exceptional ~~moderate~~, but the cumulative value of all the wetlands is high, especially for the Ninepipe area. Highest ratings were generally assigned to diverse, complex wetlands at Evaro Hill, in the Ninepipe area, and along perennial drainages (Table 6.10-1). Lowest ratings were generally assigned to monotypical roadside ditch wetlands. Prominent functions of wetlands and non-wetland riparian areas ~~values~~ include food chain support, wildlife ~~and plant~~ habitat, potential habitat for threatened and endangered species, flood attenuation and storage ~~of water~~, trapping and filtration of sediment, groundwater discharge/recharge and recreation. Some wetlands are heavily grazed. The Ninepipe area, which has high waterfowl use for both breeding and migration, is an area of national importance.

Wetlands in the Jocko Valley are at Finley Creek and the Jocko River, at crossings of many small streams and several canals with reliable water, and in many roadside ditches which intercept shallow groundwater. Most of the wetlands are comprised of forested/shrub communities associated with seeps and drainages between Evaro and the Schley homesites. In Ravalli Canyon there are a few wetlands in roadside ditches and narrow, low areas with shallow groundwater.

In the Mission Valley south of Post Creek Hill, most wetlands are narrow, forested or grassy strips at crossings of small streams, which have well-defined channels. Near Post Creek are many small springs, wet meadows, and several shallow streams.

Between Mileposts 39.5 and 44.1, the corridor leads directly north through the Ninepipe area of potholes. The potholes are either glacial kettles (shallow, closed depressions left after glacial ice blocks melted) or pingo scars (similar depressions where thick lenses of permafrost ice melted). Marshes, ponds, Ninepipe Reservoir (Milepost 40.8) and the Ninepipe National Wildlife Refuge are in the pothole terrain. Potholes are oval, circular, or irregular ~~in plain view~~, and contain ponds and marshes with cattails and sedges. Some of the pothole ponds are dry in mid- to late-summer.

North of the Ninepipe area, there are only a few wetlands at waterway crossings and along the roadway ditches. There are few ~~no~~ wetlands between Pablo and Polson Hill. Habitat values are high for waterfowl, pheasants, shorebirds, small mammals, furbearers, raptors, passerine birds, reptiles and amphibians. Hydrologic functions of individual potholes are minor because the watershed providing runoff is usually small. Collectively, these wetlands are regionally important for groundwater recharge and flood desynchronization. These wetlands are effective sinks for trapping and retaining sediment and nutrients.

Fish and wildlife use of wetlands and riparian areas are further discussed in Section 6.12.

6.11. FLOODPLAINS AND STREAM CROSSINGS

6.11.1. Flood Peaks

U.S. Geological Survey (USGS) Water-Resources Investigation Report 92-4048 was used to determine the 100-year flood peak.[164] The proposed action is in the West region defined by the USGS report. The regional analysis equations developed to predict flood peaks are based on drainage area and mean annual precipitation. The 100-year flood flows and drainage areas for each stream crossing are listed in Table 6.11-1.

6.11.2. Existing Floodplain Study

Flood insurance studies, under the National Flood Insurance Program (NFIP), have been performed for Missoula and Lake counties. Both counties have adopted the standards for floodplain management and are participating in the NFIP. The standards~~Standards have been which~~ require a floodplain permit for any encroachment or crossing of a designated floodplain.

CSKT is not participating in the NFIP so the floodplain regulations are not in effect on tribal lands. This situation produces a checkerboard pattern of land subject to and not subject to floodplain regulations.

The type of floodplain delineations for the area are summarized in Table 6.11-1.

6.11.3. Existing Culverts and Bridges

Existing stream crossings along the proposed action include culvert and bridge crossings. Most of the existing stream crossings such as Finley Creek, Agency Creek, Spring Creek, Sabine Creek, Mission Creek and Mud Creek are crossed using culvert structures. The Jocko River, Post Creek and the Flathead River ~~and Post Creek~~ are crossed with bridges.

A summary of the existing culvert and bridge crossings for drainage areas greater than one square mile are listed in Table 6.11-1.

6.11.4. Fish Passage

~~As described in Section 6.12.1, s~~Several streams which cross the highway have fishery values, and design of crossings to provide fish passage will be important. The Bureau of Indian Affairs (BIA) has established interim instream flow requirements for several of these crossings as ~~these streams which include Jocko River, Spring Creek near Ravalli, Finley Creek, Post Creek, Mud Creek, Crow Creek, Sabine Creek, Spring Creek near Ronan and Mission Creek. Fish passage will be required for all crossings~~ listed on Table 6.12-1. (Section 6.12)

6.11.5. Specific Stream Crossings

The following paragraphs describe existing stream crossing problems at specific sites along the highway.

Agency Creek

The highway crosses Agency Creek near Milepost 15.9. Agency Creek flows out from the mountains onto an alluvial floodplain located above the highway crossing. The channel on this fan is perched, or higher than the

[164]U.S. Geological Survey, Analysis of the Magnitude and Frequency of Floods and the Peak-Flow Gaging Network in Montana, Water-Resources Investigations Report 92-4048, July 1992.

Table 6.11-1 Stream Crossing Summary

Milepost	Stream Name	Drainage Area (Sq Mi.)	100-Year Flood Flow (CFS)[1]	NFIP Delineation	Culvert	Bridge	Size
7.8	Frog Creek	2.0	35	None	X		36" RCP
9.6	Finley Creek, Left	3.1	80	None	X		72" CSP
9.7	Finley Creek, Right	10.7	230	None	X		72" CSP
10.0	Unnamed Creek	1.8	35	None	X		36" RCP
10.3	Unnamed Creek	2.2	60	None	X		4X4' Box
10.8	Drainage	1.2	37	None	X		36" RCP
11.8	Schley Creek	2.4	66	None	X		60" RCP
12.2	East Fork, Finley Creek	6.6	153	None	X		6X8' Box
14.3	E Canal*	1.7	23	None	X		36" CSP
15.7	Agency Creek	8.4	212	Approx	X		18" CSP
19.0	Jocko River	153.2	2608	Approx		X	59' Span, 36' Wide
23.3	Spring Creek, Ravalli	22.2	371	Approx	X		3X6' Box
28.2	Drainage	1.4	26	None	X		36" RCP
28.3	Drainage	1.3	24	None	X		36" RCP
30.2	Drainage	1.2	22	None	X		4X6'Stockpass
30.5	Pistol Creek	3.1	56	None	X		60" RCP
30.7	Drainage	1.5	31	None	X		36" CSP
31.8	Sabine Creek	15.7	334	Approx	X		84" CSP
32.4	Mission Creek	48.6	994	Approx	X		12.9X8.3' CSPA
34.7	Drainage	1.2	23	None	X		36" RCP
35.4	Drainage	2.5	41	None	X		6X6' Box
37.8	Post Creek	61.1	1209	Approx		X	51' Span, 31' Wide
44.2	Crow Creek	49.3	1009	Approx	X		14'0"x9'8" SSPPA, TWIN
47.0	Spring Creek, Ronan	5.5	157	Approx	X		6'1"X4'7" SSPPA
51.0	Mud Creek	12.9	323	Approx	X		11'5"X7'3" SSPPA
61.1	Flathead River	7,000	77,500	Approx		X	1,536' Span 38.5' Wide

U.S. Geological Survey (USGS) Water-Resources Investigation Report 92-4048. [1]CFS = Cubic Feet Per Second * E Canal is listed because it also is a drainage crossing for an area more than one square mile. Other canals are not listed because they do not carry drainage water, or they serve smaller areas.

surrounding overbank in some areas. Flood water exceeding the channel capacity is lost to overbank flows which spread out over a wide area. There are also irrigation diversions which reduce the flows.

A county road crossing is located approximately 1,600 feet up-stream of the highway crossing. This crossing consists of a 30" corrugated steel pipe (CSP) and a 27" x 43" corrugated steel pipe arch (CSPA). The capacity of this crossing is approximately 75 cfs. The capacity of the channel between this crossing and the highway is no more than 75 cfs. Flood flows more than 75 cfs most likely do not reach the highway culvert by way of the stream channel.

The existing culvert underneath the highway is an 18" CSP. There is little headwater depth available to push water through the culvert. Additionally, the upstream banks are low where they cross the borrow ditch. The capacity of the existing culvert is about eight cfs. Excess water is diverted to the north down the east borrow ditch towards Arlee. Local MDT maintenance personnel report that runoff exceeds the culvert capacity almost every year, and the excess flow is carried in the east borrow ditch.

Water discharged from the existing 18" culvert drops down a steep channel into a gravel pit. Water ponds to a depth of approximately four feet above the pit floor before it overtops the bank elevations at the northwest corner. Water flowing out of the northwest corner of the gravel pit follows along the east side of the railroad tracks and eventually ends up in Finley Creek. Water flowing along this drainage path causes minor flooding of the railroad ROW and adjacent properties.

Spring Creek Near Ravalli

The highway crosses Spring Creek near Milepost 23.3. Spring Creek carries a base flow which is estimated to range from 25 to 50 cfs throughout the year. The existing crossing consists of a double three-feet high by six-feet wide concrete box culvert. Fish passage is a concern at this site. The existing culvert size is inadequate -- it is estimated that minimal roadway overtopping will occur with the 50-year flood. The channel of Spring Creek is parallel with and immediately adjacent to the existing highway for approximately 800 feet in the area upstream and downstream from the crossing. Most of this section of Spring Creek was modified by previous highway and railroad construction and is not in its natural channel.

Spring Creek in Ronan

A 290-feet long, six-feet, one-inch span by four-feet, seven-inch rise structural steel plate pipe arch (SSPPA) culvert currently carries Spring Creek across US 93, across a city block, across First Avenue Southwest and then discharges to a city park. The culvert will not accommodate the estimated 100-year flood flow.

6.12. FISH AND WILDLIFE

US 93 traverses wildlife habitat including aquatic habitat (lakes, streams and rivers), wetlands, riparian areas, agricultural croplands, prairie grasslands, conifer-dominated forests and urban areas. This habitat provides food and cover for fish, reptiles, amphibians, small mammals, birds, furbearers, and big game. Most wildlife species in the area of the proposed action (such as fish, waterfowl, meadow vole, ring-necked pheasant, elk, mountain lion, and grizzly bear) are associated with specific habitats, whereas others (such as magpie, red-tailed hawk, white-tailed deer, deer mouse, and coyote) are nearly cosmopolitan. The following sections describe wildlife-habitat associations.

6.12.1. Aquatic Habitats and Wetlands

Aquatic habitat includes the Flathead and Jocko rivers, Flathead Lake, streams, reservoirs, ponds, and springs. Streams are periodically crossed over the length of the highway. Ponds, reservoirs, and associated wetlands are primarily in the Ninepipe area between St. Ignatius and Pablo.

There are few amphibians in the area. Prior to the 1970s, leopard frogs were common in the Ninepipe-Pablo wetlands; however, since that time, their numbers have been greatly reduced.[165] The cause of the local population decline of this species is not known. Long-toed salamanders, tiger salamanders, spotted frogs and western toads are found in aquatic habitats, particularly during breeding season in the spring. In 1979, Peterson reported the tailed frog from Revais Creek, west of the highway.

Reptiles in the area include ~~rattlesnakes,~~ bull snakes, garter snakes, rattlesnakes and painted turtles. Painted turtles are locally abundant in the Ninepipe area in ponds and reservoirs. Many turtles are killed by vehicles while crossing US 93 between Ninepipe and Crow Creek.

Streams with important fishery values that would be traversed by the highway include the Flathead and Jocko rivers, Jocko Spring Creek (also known as Valley Spring Creek), Finley Creek, Post Creek, Mud Creek, Crow Creek, Sabine Creek, Ronan Spring Creek and Mission Creek. ~~Jocko River provides habitat for brown, rainbow, brook, bull, and westslope cutthroat trout, mountain whitefish, and non-game species such as slimy sculpin, longnose dace, redside shiner, northern squawfish, peamouth chub, longnose sucker, and largescale sucker. Lower Jocko River (between Ronan and Arlee) provides critical spawning and rearing habitat for rainbow and brown trout.[166] Resident trout and trout from Flathead River spawn in lower Jocko River.[167]~~

~~Bull trout are rare in Jocko River and occur primarily in the upper portions of the drainage.[168] The South and Middle forks of Jocko River are managed for native populations of westslope cutthroat trout. Jocko River is managed for catch and release fishing, but limited harvest may be allowed in the future if populations increase sufficiently.~~

The Jocko River, upstream of Arlee, is managed primarily for native species. The Jocko River below Arlee is a non-native rainbow and brown trout fishery. Lake trout have also been recently discovered within this area. Eastern brook trout are scattered throughout this drainage. Fishing regulations are catch and release for all species except brook and lake trout.[169]

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[165]Morrison-Maierle; personal communication with West. 1992.

~~[166]DosSantos, J., J. Darling, and D. Cross. 1988. Lower Flathead System fisheries study. Main River and tributaries, Volume II. Final Report FY 1983-1987. Confederated Salish and Kootenai Tribes, Pablo, Montana.~~

~~[167]Morrison-Maierle; personal communication with DosSantos. 1991.~~

~~[168]Ibid.~~

[169]Confederated Salish and Kootenai Tribes, comments on the draft EIS dated 27 June 1995.

The section of the Flathead River crossed by the existing US 93 bridge at Polson, ~~within the area of the proposed action~~ is inhabited primarily by non-game species such as northern squawfish, peamouth chub, and other minnow species.[170] Longnose and largescale suckers are found in this section of the river~~lakes throughout the area~~, and westslope cutthroat and bull trout are occasional seasonal visitors~~ to the South Bay of Flathead Lake and connecting Flathead River~~. However, the area contains no spawning grounds and no critical habitat for any fish species.[171]

Post and Mission creeks also provide spawning habitat for rainbow and brown trout and largescale sucker from the Flathead River, and they have resident spawning populations of rainbow, brown, and brook trout. Mud Creek and Crow Creek are important spawning streams for brown and rainbow trout which migrate upstream from Crow Creek Reservoir. Jocko Spring Creek has resident populations of rainbow, brown, and brook trout and provides spawning habitat for mountain whitefish moving upstream from the Jocko River.[172] Ronan Spring Creek has resident populations of rainbow and brook trout and mountain whitefish. Finley Creek supports populations of brook trout, cutthroat trout, brown trout, mountain whitefish, slimy sculpin, and longnose dace.[173] Westslope cutthroat trout are present in Finley Creek, upper Jocko River (above the proposed action), and Sabine Creek.

Non-game fish species in streams traversed by US 93 include largescale sucker, peamouth chub, northern squawfish, longnose dace, slimy sculpin, longnose sucker, black bullhead, and redside shiner. Ninepipe and Pablo reservoirs have reproducing populations of largemouth bass and yellow perch. Yellow and black bullhead, pumpkinseed sunfish and occasional rainbow trout also occupy Ninepipe Reservoir.

To protect critical fish habitat, the BIA has established instream flows for streams with important fisheries. Instream flows for reaches of streams traversed by US 93 are shown on Table 6.12-1. Fish passage will be required for all crossings listed on the table, except Agency Creek. Tribal biologists have indicated it will not be desirable to provide fish passage from Finley Creek to Agency Creek in order to protect the native cutthroat trout population in Agency Creek. Providing fish passage will also be required in Spring Creek near Ravalli, Sabine Creek and Spring Creek in Ronan.

Wetlands in the Ninepipe-Pablo and Polson areas provide breeding habitat and important resting areas for numerous species of migratory waterfowl and shorebirds. The most numerous nesting species are Canada goose, mallard, redhead, ring-billed gull, red-winged blackbird, yellow-headed blackbird, and California gull. Pintail, American widgeon, shoveler, blue- and green-winged teal, ruddy duck, gadwall, and coot also are common.[174] Waterfowl numbers vary seasonally. As many as 80,000 waterfowl may be present in October and November on the Ninepipe and Pablo National Wildlife Refuges.[175]

During migration, numerous waterfowl and shorebirds are transient visitors in the area. Tundra swans are commonly observed and trumpeter swans are occasional migrants.[176] Nesting colonies of double-crested cormorant and great blue heron are located in trees along the margin of Ninepipe and Pablo reservoirs.

More than 190 bird species have been identified for wetlands in the Ninepipe-Pablo area.[177] Of these species, approximately 75 are known to nest in the area.

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[170]Carter-Burgess; personal communication with DosSantos. 1993.

[171]Carter-Burgess; personal communication with DosSantos. 1993.

[172]Decker-Hess, J. 1989. An inventory of the spring creeks in Montana. Unpublished report. Montana Department of Fish, Wildlife and Parks, Kalispell, Montana.

[173]Riggs, V. and R. Skates. 1978. Acid spill within Flathead Indian Reservation, September 20, 1978. U.S. Fish and Wildlife Service, Kalispell, Montana.

[174]U.S. Fish and Wildlife Service. 1983. Ninepipe and Pablo National Wildlife Refuges. RF 6-61541-1.

[175]Ibid.

[176]Morrison-Maierle; personal communication with Bishop. 1992.

[177]Ibid.

Table 6.12-1 Instream Flows For Streams In the Study Area

Stream	Minimum Instream Flow
Finley Creek	8.5 cfs
Agency Creek	8.0 cfs
Jocko River	43.0 cfs
Mission Creek	20.0 cfs
Post Creek	22.0 cfs
Crow Creek	22.0 cfs
Mud Creek	0.8 cfs

U.S. Department of the Interior, Bureau of Indian Affairs, 1990. Flathead Agency Operating Procedures for Irrigation and Fisheries.

Portions of both the Ninepipe National Wildlife Refuge and Flathead Lake adjacent to US 93 are important feeding areas of shorebirds such as avocet, black-necked stilt, phalaropes, killdeer, and sandpipers. Shallow areas of the reservoir are often exposed mudflats during periods when the reservoir is below full capacity. Alternating periods of inundation and exposure provide optimum feeding habitat for shorebirds where shorelines slope gently down to mudflats and shallow water.

Avocets and other shorebirds and waterfowl are present during migration at a small wetland north of Arlee near Spring Creek ("avocet pond"). This small pond (less than 0.1 acre), created by excavation for gravel or borrow material, is a popular area for viewing birds.

Muskrat, mink, and beaver are common mammals closely associated with wetlands. River otter, infrequent in the area, occur in habitats along the Jocko River and Mission Creek.[178] Raccoon are common and usually associated with wetlands and riparian areas. Striped skunk are common.

6.12.2. Riparian Areas

Riparian or streamside vegetation is composed of plant communities which grow in a transitional zone between aquatic and terrestrial ecosystems. Riparian plant communities have distinctive vegetation and soils and are characterized by the combination of high species diversity, high species density, and high productivity. Riparian areas provide important feeding and breeding habitat for numerous species of birds and other wildlife. Riparian zones along the Flathead River and Lake, Finley Creek, Post Creek, Mission Creek, the Jocko River, and Crow Creek are travel corridors for wildlife because the dense vegetation allows animals to move with greater security

[178]Mack, C., A. Soukkala, D. Becker, and I. Ball. 1990. Impacts of regulated water levels on raptors and semiaquatic furbearers in the lower Flathead drainage, Flathead Indian Reservation, Montana. U.S. Fish and Wildlife Service Cooperative Wildlife Research Unit, Missoula, Montana.

through open grasslands and agricultural areas. Species with affinities for riparian habitat include numerous songbirds, ruffed grouse, ring-necked pheasant, beaver, mink, raccoon, bobcat and white-tailed deer.

6.12.3. Agricultural Lands and Grasslands

Agricultural lands are predominantly irrigated and non-irrigated hay meadows and small grainfields. Hay meadows are interspersed with wetlands in the Ninepipe-Pablo area.

Grasslands include remnants of the native Palouse prairie, but most grasslands are abandoned fields and pastures seeded with non-native species and colonized by invader species. Palouse prairie grasslands are dominated by rough fescue, Idaho fescue, bluebunch wheatgrass, and a variety of forbs, whereas abandoned fields are dominated by grasses such as reed canarygrass, quackgrass, creeping meadow foxtail, Kentucky bluegrass, red-top, and basin wildrye. Remnants of Palouse prairie occur in the Ravalli area near the National Bison Range and south of Polson. However, most of the area south of Polson contains agricultural habitats.

Some grassland and agricultural areas have been purchased by the federal government as waterfowl production areas (WPAs). US 93 ROW is adjacent to the Kicking Horse and Duck Haven WPAs, which are located north of Ninepipe National Wildlife Refuge. Typically WPAs include grassland/wetland complexes, managed to favor nesting waterfowl. Common wildlife species associated with the complex of hay meadows and wetlands are meadow vole, shorttail weasel, longtail weasel, striped skunk, badger, ring-necked pheasant, gray partridge, short-eared owl, long-eared owl, northern harrier, red fox, and white-tailed deer. High densities of nesting short-eared owl were observed on the Duck Haven WPA, abutting the proposed action. Shelterbelts of shrubs and trees in grassland/wetland complexes provide critical nesting and perching sites for a variety of birds. Typically, perching and roosting sites for hawks and owls are limited in grassland/wetland complexes.

A colony of bank swallows has excavated several hundred nests in the silt and clay roadcut south of Ravalli. Bank swallows breed and rear young approximately from early-May through July. They may arrive in the area in mid-April and reside here into August. These colonial birds typically nest in firm soil banks and cliffs. The colony south of Ravalli inhabits steep banks comprised of glacial lake sediments where the existing highway is constructed between the Jocko River and the steep hillside.

6.12.4. Coniferous Forests

Coniferous forests occur primarily in the Evaro area, but small stands also remain near Pablo and Ravalli. The Evaro area may be important to wildlife because of the narrow zone of forest linking isolated montane habitats of the Mission and Rattlesnake mountain ranges to the north and east with the Ninemile-Squaw Peak-Bitterroot Mountains to the west and south. The coniferous forest provides security for wildlife moving between large portions of habitat, isolated by human development in the Evaro area.

Currently expanding subdivision development and past construction of pipelines, powerlines, US 93 and other roads have reduced forest cover and have displaced wildlife species from the area. Species which use the coniferous forests of the Evaro area include elk, mule deer, white-tailed deer, mountain lion, moose, bobcat and black bear. Species which occasionally may be present in this habitat include grizzly bear, wolf, lynx, wolverine, northern goshawk, sharp-shinned hawk, pileated woodpecker, great gray owl and pine marten.

6.12.5. Urban Areas

Most urban habitat is in the city of Polson. This area is predominantly private businesses and residential property. Although wildlife is limited, some species do use the area. A variety of small mammals, including deer mice, house

mice, striped skunks, and raccoons may be found.[179] Depending on the season, a variety of bird species may occur here; common species are American robin, rock dove, blue jay, European starling, evening grosbeak, house finch, and house sparrow.[180]

6.12.6. Species of Special Concern

The Montana Department of Fish, Wildlife and Parks (MDFWP)[181] and the Montana Natural Heritage Program have designated fish and wildlife species of "special concern" in Montana. These species have been designated on the basis of their relative rarity or concern for their continued existence in their current range.[182] Species of special concern, known or suspected to occur in Flathead and Lake counties, are listed in Table 6.12-2.

Of the 17 sensitive species known or suspected to occur in Lake and Flathead counties, two mammals (grizzly bear and gray wolf) are occasionally present in portions of the area (Section 6.13). A nursery colony of Townsend's big-eared bats occurs within 0.25 mile of US 93 in the Ravalli area. This colony is comprised of approximately 60 females.[183]

Four mammals have a low probability to occur in the area--California bat, fisher, wolverine, and lynx. California bats are usually associated with caves, mine tunnels, and bridges; they could occasionally use highway bridges for day roosts. Fisher, wolverine, and lynx are uncommon in Montana. If present in the area of the proposed action, they would be in conifer forests as transients between mountainous habitat on the east and west.

Two sensitive fish are present in streams that would be traversed by the highway--cutthroat trout and bull trout. Cutthroat trout are present in the Jocko River, Sabine Creek, and Finley Creek. Bull trout are present in the Jocko River.

Tailed frog is the only sensitive species of amphibians or reptiles known to be present near the area. In 1979, Peterson found the tailed frog in Revais Creek, several miles west of the highway.

Sensitive bird species known to occur in the area are common loon, harlequin duck, osprey, bald eagle, Cooper's hawk, long-billed curlew, peregrine falcon, prairie falcon, long-eared owl, and clay-colored sparrow. None of these species are known to nest on the area, and most are present for only short periods as seasonal migrants. Bald eagle and osprey nest near Polson on Flathead Lake and near the Flathead River. Bald eagles also are present as winter residents along the Flathead River.

Six occurrence records of plant species of special concern occur in the vicinity of T. 20 N., R. 20 W. These are: California waterwort (Elatine californica), Toothcup (Rotala ramosior), Oregon checker-mallow (Sidalcea oregana), Columbia water-meal (Wolffia columbiana), and spotted water-meal (Wolffia punctata, at two sites). The California waterwort and toothcup sites are beside pothole ponds near Kicking Horse Reservoir; the Oregon checker-mallow is in weedy rangeland south of Ronan; the Columbia water-meal and spotted water-meal are by pothole ponds near Ninepipe Reservoir.

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[179]Ratti, J.T. 1990. Mammals and Birds of the Flathead Indian Reservation. Confederated Salish and Kootenai Tribes of the Flathead Reservation. Pablo, Montana.

[180]Ratti, J.T. 1990. Mammals and Birds of the Flathead Indian Reservation. Confederated Salish and Kootenai Tribes of the Flathead Reservation. Pablo, Montana.

[181]Flath, D. 1984. Vertebrate species of special interest or concern. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

[182]Board of Oil and Gas Conservation. 1989. Programmatic environmental impact statement on oil and gas drilling and production in Montana. Helena, Montana.

[183]Morrison-Maierle; personal communication with Butts. 1992.

Table 6.12-2 Species of Special Concern Known Or Suspected To Occur In Flathead and Lake Counties

Species		Habitat	Probability Of Occurrence in Study Area
MAMMALS	Pygmy shrew	Wooded and open areas	Unknown
	California bat	Tunnels, bridges, and caves	Low
	Townsend's big-eared bat	Caves, mine adits, and bridges	Present
	Grizzly bear	Mountains and adjacent areas	Occasionally present
	Fisher	Mountainous areas	Low
	Wolverine	Mountainous areas	Low
	Wolf	Primarily remote mountainous areas	Occasionally Present
	Lynx	Mountainous areas	Low
	Hoary marmot	Alpine areas	None
	Northern bog lemming	Alpine areas	None
AMPHIBIANS	Coeur d'Alene salamander	Coniferous wetlands and moss	Very low
	Tailed frog	Mountain streams	Present (rare)
	Wood frog	Moist forests	Very low
FISH	Cutthroat trout	Coldwater streams	Present
	Bull trout	Coldwater streams	Present
	Arctic grayling	Coldwater lakes	None
	Shorthead sculpin	Coldwater streams	Unknown
BIRDS	Common loon	Remote lakes	Present as migrants
	Harlequin duck	Turbulent mountain streams	Present as migrants
	Osprey	Lakes and rivers	Present

(Continued)

Table 6.12-2 Species of Special Concern Known Or Suspected To Occur In Flathead and Lake Counties (Continued)

Species		Habitat	Probability Of Occurrence In Study Area
BIRDS (Continued)	Bald eagle	Lakes and rivers	Present
	Cooper's hawk	Riparian and conifer forests	Present
	Northern goshawk	Conifer forests, often old growth	Low
	Ferruginous hawk	Prairies and grassland	Very low
	Long-billed curlew	Prairies and grassland	Present
	Merlin	Riparian and conifer forests	Low
	Peregrine falcon	Cliffs and waterbodies	Present
	Prairie falcon	Cliffs	Present
	Upland sandpiper	Prairies and grasslands	Unknown
	Northern pygmy owl	Conifer forests	Low
	Barred owl	Conifer forests	Low
	Great gray owl	Conifer forests	Low
	Long-eared owl	Forests and prairies	Present
	Northern saw-whet owl	Riparian and conifer forests	Unknown
	Pileated woodpecker	Conifer forests	Present
	Olive-sided flycatcher	Conifer forests	Low
	Swainson's hawk	Riparian forests	Low
	Western bluebird	Open woodlands and grassland	Present (rare)
	Clay-colored sparrow	Prairies and shrublands	Present (rare)
	Brewers sparrow	Sagebrush and alpine meadows	Very Low

Flath. 1984.

6.12.7. Wildlife Movement Corridors

Wildlife crosses US 93 at locations where vegetation, topography, and low levels of disturbance allow relatively secure movement across the highway between portions of suitable habitat. Movement corridors exist near Evaro, and at Ravalli Canyon, Mission Creek, and Post Creek. High levels of local movement by birds, turtles, frogs, waterfowl and other birds, mink, and muskrat occur near Ninepipe Reservoir.

High levels of wildlife mortality have been documented at points where animals regularly cross US 93. Approximately 50 deer per year are killed by vehicles in the Evaro area, and big game is regularly killed at Ravalli Canyon, Mission Creek, and Post Creek.[184] Numerous turtles, waterfowl, and other wetland species are killed by vehicles near Ninepipe Reservoir. There is an unconfirmed report of a grizzly bear being killed by a vehicle at the Post Creek bridge[185] and confirmed reports of road-killed black bears near Evaro.[186]

Although movement of wildlife across US 93 poses mortality risk due to high traffic levels, continued movement across the highway is essential to prevent further fragmentation of habitat, particularly in regard to lynx, wolverine, wolves and grizzly bears. Habitat fragmentation isolates populations and leads to loss of genetic diversity, which in turn can lead to population decline and eventual extinction.[187] Because grizzly bears and wolves are present in such low numbers, inhibition of breeding among population segments could result in reductions in population viability.

The Evaro movement corridor is important when its role as a local and regional wildlife travel corridor and habitat linkage zone is considered relative to plans of the USFWS to reestablish grizzly bears in the Bitterroot Mountains.[188] Evaro Pass would be the most likely linkage for grizzly bears in the Northern Continental Divide Ecosystem and a reestablished population in the Bitterroot Mountains.

If grizzly bears were successful in recolonizing the Bitterroot Mountains, genetic exchange between the Northern Continental Divide Ecosystem and the Bitterroot Mountains would be essential. According to computer simulation models, at least 50 to 90 grizzly bears are necessary for a minimum viable population, defined at 95% probability of survival for 100 years. Although 50 to 90 grizzly bears are considered to be a minimum viable population, this number is much lower than populations needed to prevent loss of genetic diversity. Isolated populations of grizzlies must number from 1,670 to 2,000 bears to maintain adequate genetic diversity over the long term.[189] Evaro Pass would be the linkage through which genetic exchange from the Northern Continental Divide Ecosystem would supplement genetic variation in the Bitterroot Ecosystem.

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[184]Morrison-Maierle; personal communication with Becker. 1992.

[185]Ibid.

[186]Ibid.

[187]Allendorf, F., R. Harris, and L. Metzger. 1990. Estimation of effective population size of grizzly bear by computer simulation. Proceedings of the Fourth International Congress of Systematic and Evolutionary Biology.

[188]Servheen, C. 1992. Grizzly bear recovery plan - Second review draft. U.S. Fish and Wildlife Service, Missoula, Montana.

[189]Allendorf, F., R. Harris, and L. Metzger. 1990. Estimation of effective population size of grizzly bear by computer simulation. Proceedings of the Fourth International Congress of Systematic and Evolutionary Biology.

6.13. THREATENED AND ENDANGERED SPECIES

Four species listed under the Endangered Species Act are present periodically in the area. Listed species are either in danger of extinction (gray wolf and peregrine falcon) or threatened (grizzly bear and bald eagle).

6.13.1. Grizzly Bear

Before extensive settlement and development of agriculture, grizzly bears probably used habitat throughout the Flathead Valley. As a result of habitat alteration and increased mortality due to human encounters, grizzly bears have been restricted to the mountainous habitat of the Mission Mountains and lowlands adjacent to the mountains.

Grizzlies in the Mission and Rattlesnake mountains exhibit patterns of elevational movement with different seasons. Bears spend from five to six months in winter dens, located in the mountainous terrain above 6,600 feet in elevation, and emerge from dens in spring and move to lower elevations when early green vegetation and other food sources, such as carrion and insects, become available. Important spring habitat (April 15 to June 15) exists in the Mission Valley where seeps and riparian areas provide abundant plant species eaten by bears. Heavily used spring habitat several miles to the east of the proposed action is present at the base of the Mission Mountains near Marsh, Mollman, Post, Poison Oak, and Valentine creeks.[190] Grizzlies periodically use habitat to within about one mile of US 93 near Allentown and the Ninepipe National Wildlife Refuge, and may cross US 93 at Post Creek.[191] Grizzly bears may occasionally follow the riparian zone of Post Creek and use habitat near the National Bison Range. A grizzly, observed near the National Bison Range in 1990, possibly followed Post Creek from the Mission Mountains westward.[192] Residents living along Post Creek report relatively frequent sightings of grizzly bears close to US 93.

During summer, grizzlies usually move to higher elevations in the Mission and Rattlesnake mountains where they feed on newly emergent vegetation and insects, such as ladybird beetles and army cutworm moths. In late-summer and early-fall, bears move back to lower elevations on west slopes of the Missions to feed on domestic fruit in orchards and on native fruits and berries.

The Evaro area is marginal grizzly bear habitat due to high levels of human activity (subdivisions, US 93, and numerous roads, pipelines, transmission lines, and small farms and ranches). Geographically, however, it is important as a movement corridor separating the Mission and Swan ranges from the Ninemile-Squaw Peak and Bitterroot Mountains. High levels of human activity, such as at a primary highway, railroad, pipelines, and associated development, are thought to inhibit movement by grizzly bears between adjacent areas of suitable habitat, thereby causing fragmentation of habitat. As bear populations and habitat become smaller and more isolated, grizzlies become more vulnerable to man-induced mortality.

CSKT and Missoula County have recognized the importance of the Evaro area for grizzly bears. As part of their Grizzly Bear Management Plan, CSKT has designated the Evaro area as important habitat where efforts will be made to maintain or improve habitat and minimize human-induced conflict or bear mortality.

Although the highest grizzly bear densities in the area are in the Mission Mountains and adjacent lands in the Mission Valley, grizzlies have been reported periodically in the Evaro ~~area~~, Dixon, Ninepipe and Post Creek areas and west of US 93 near Perma and Magpie Creek. In 1992, Jonkel[193] reported that during the Border Grizzly Project radio-collared grizzlies were traced repeatedly through Evaro Pass. Grizzly bears were observed in the

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[190]Servheen, C. 1981. Grizzly bear ecology and management in the Mission Mountains, Montana. Ph.D. dissertation. University of Montana, Missoula, Montana.

[191]Morrison-Maierle; personal communication with Becker. 1992.

[192]Ibid.

[193]Jonkel, C. 1992. Evaro Pass, wolves and bears. Unpublished report. Ursid Research Center, Institute of the Rockies, Missoula, Montana.

Evaro area in 1978[194] and in the early-1980s.[195] In 1981, a grizzly bear den was inadvertently destroyed in the Finley ~~Flats Logging Unit~~ area by road construction.[196] Two sub-adult grizzlies were observed during July and August of 1978. These bears were relocated into the South Fork of the Jocko River from the west slope of the Mission Mountains where their mother was shot.[197] These young bears used habitat on both the east and west sides of US 93. The pipeline ROW, approximately paralleling the highway on the west, was heavily used as a feeding area by both grizzly and black bears during July, August, and September of 1978. The prolific production of fruit on serviceberry bushes along the pipeline ROW provided a productive and attractive summer food source for bears.

6.13.2. Gray Wolf

Gray wolf populations in Montana have been increasing in recent years. Successful wolf reproduction has been documented in Glacier National Park, near Marion in northwestern Montana, and in the Ninemile area near the southwestern portion of the Flathead Indian Reservation. There have been several reported wolf sightings in the Evaro area over the last two or three years.[198] A female wolf, with a radio collar, moved from Glacier National Park, down Swan Valley, through the Evaro area into the Ninemile area, where she established a territory.[199] Two other wolves also are thought to have used the Evaro area as a travel corridor between habitat in the Mission-Swan area and Ninemile-Bitterroot area. There also were credible reports of wolf sightings near Evaro, Arlee, Dixon, and Ninepipe Reservoir.[200] Information on wolves in the area indicates that wolf sightings are associated with lone wolves that have moved over large areas. There is no evidence the area of the proposed action is part of the home range of packs.

6.13.3. Bald Eagle

Bald eagles nest on Flathead Lake (three nesting pairs), and at Pablo National Wildlife Refuge (one nesting pair). Bald eagles nested at Ninepipe National Wildlife Refuge in 1988-89, but there has been no nesting observed since 1989.[201] Bald eagles also are reported to nest near Kicking Horse Reservoir.[202] Bald eagles are seasonal migrants through the area and winter near ice-free bodies of water, such as Jocko and Flathead rivers. (Figure 6.13-1)

Bald eagles nesting on Flathead Lake and the Flathead River confine their foraging activities during the breeding season to riparian and aquatic habitats associated with these waters. Fish are the most common prey (60%) followed by birds (27%), mammals (11%), and crustaceans (two percent). The most frequently captured fish are suckers, peamouth, and northern squawfish, whereas mallards, common mergansers, and ring-necked pheasants are common birds preyed upon by bald eagles.[203]

The Flathead Valley is a traditional wintering area for bald eagles, typically providing habitat for 43 to 61 birds, with peak numbers being present in December and January.[204] However, only four to 12 eagles may use the area

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[194]Servheen, D. and L. Lee. 1979. An assessment of the grizzly bear population size and status, and a description of important use sites in the Finley Logging Unit, Flathead Reservation, Montana. University of Montana, Border Grizzly Project, School of Forestry, Missoula, Montana.

[195]Morrison-Maierle; personal communication with Becker. 1992.

[196]Ibid.

[197]Servheen, D. and L. Lee. 1979. An assessment of the grizzly bear population size and status, and a description of important use sites in the Finley Logging Unit, Flathead Reservation, Montana. University of Montana, Border Grizzly Project, School of Forestry, Missoula, Montana.

[198]Morrison-Maierle; personal communication with Fontaine. 1992.

[199]Ibid.

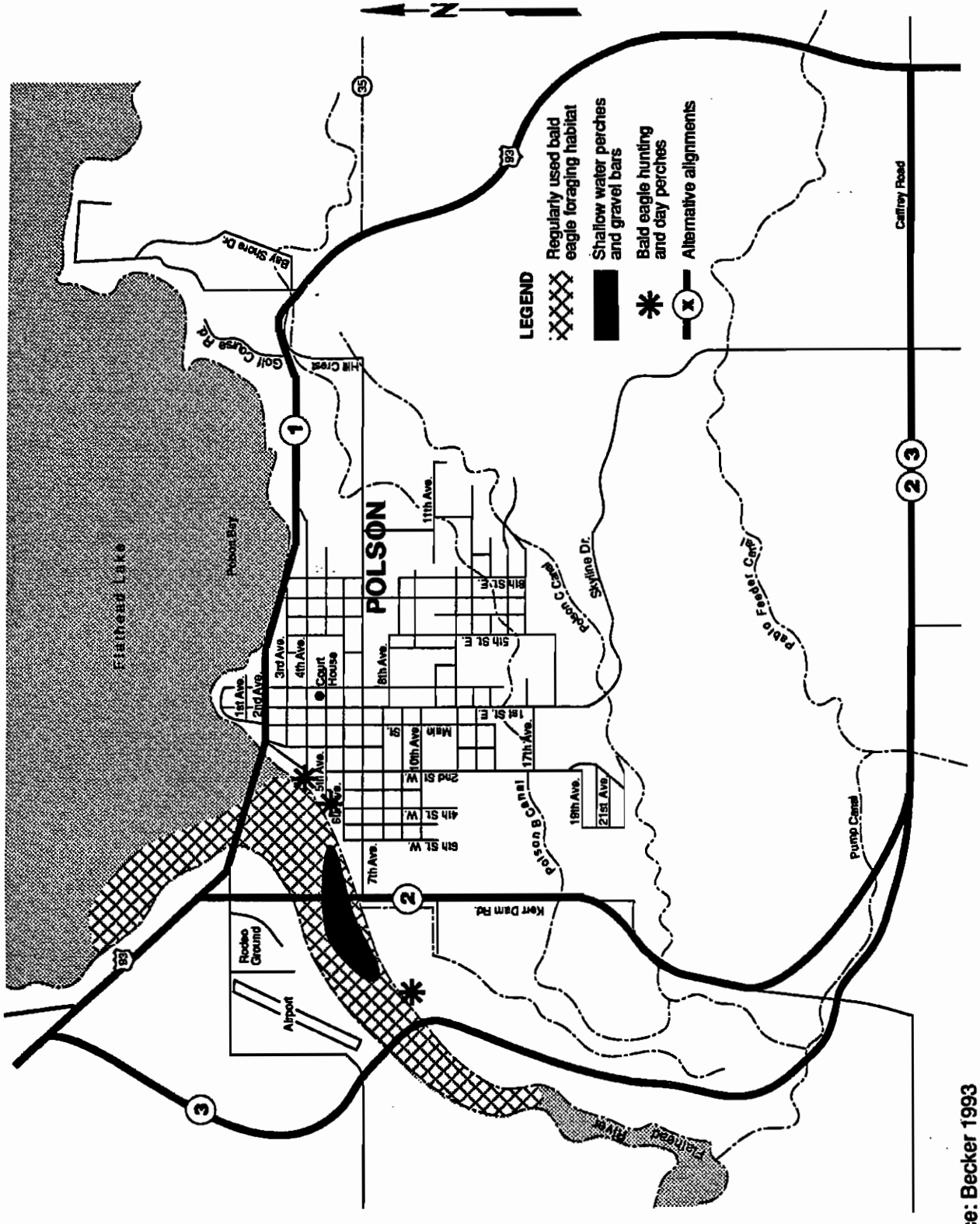
[200]Morrison-Maierle; personal communication with Becker. 1992.

[201]U.S. Fish and Wildlife Service. 1990. Ninepipe and Pablo National Wildlife Refuges. Annual report. Moiese, Montana.

[202]Morrison-Maierle; personal communication with Becker. 1992.

[203]Mack, C., A. Soukkala, D. Becker, and I. Ball. 1990. Impacts of regulated water levels on raptors and semiaquatic furbearers in the lower Flathead drainage, Flathead Indian Reservation, Montana. U.S. Fish and Wildlife Service Cooperative Wildlife Research Unit, Missoula, Montana.

[204]Ibid.



Source: Becker 1993

BALD EAGLE HABITAT LOCATIONS ALONG POLSON ALIGNMENTS 1,2 & 3

FIGURE 6.13-1

near Polson at any one time during the winter months. Most wintering eagles forage and perch near open waterbodies, primarily Flathead Lake and the Flathead River. Primary perch sites on the Flathead River are located near the sewage lagoon and on shallow water and gravel bars within the Flathead River[205] (Figure 6.13-1). During winter, primary
prey are birds (mallards and American coot), with fish being the second most frequent prey item. Mammals were a small portion of the winter diet, but carrion from cattle and deer also may be important.[206]

6.13.4. Peregrine Falcon

Peregrine falcons pass through the area as seasonal migrants. They are often seen in the Ninepipe area in the fall when large concentrations of waterfowl and shorebirds are present.[207] There are no known nest sites in the vicinity of the proposed action; however, CSKT has a peregrine falcon reintroduction project in the vicinity of Ninepipe Reservoir. It is likely that reintroduced peregrine falcons will rely heavily on the wetland areas in the Ninepipe-Pablo area as sources of prey.[208] The Flathead River and portions of Flathead Lake near Polson are also used by migrant falcons.[209]

[205]Morrison-Maierle; personal communication with Becker. 1993.
[206]Ibid.
[207]Ibid.
[208]Morrison-Maierle; personal communication with Becker. 1992.
[209]Morrison-Maierle; personal communication with Becker. 1993.

6.14. CULTURAL RESOURCES

6.14.1. Setting and Background Information

Native Americans have occupied western Montana for at least 12,000 years. Evidence of aboriginal occupation is abundant throughout western Montana, and includes campsites, food processing sites and pictographs. Today, the descendants of three main tribal groups occupy the Flathead Indian Reservation, the "Bitterroot Salish" (incorrectly referred to as the "Flathead" by non-Indians during the historical period), the Lower Pend d'Oreille and the Kootenai[210]. The current reservation boundary incorporates only a fraction of the area traditionally used by these tribes. When considered together, their aboriginal territories covered much of what is now known as eastern Washington, the Idaho Panhandle, the southern part of the Canadian provinces of British Columbia and Alberta, and approximately the western one-third of the state of Montana.

People hunted, fished, ~~harvested~~gathered and established campsites throughout their respective territories. Until recently, Indian people obtained whatever they needed directly from the natural environment. This traditional way of life was based upon a primary relationship between people and natural resources. Animals, birds, fish and plants provided food, medicine and clothing--everything needed to sustain life, both physical and spiritually. The Confederated Salish and Kootenai Tribes have indicated that subsistence activities are not just an activity conducted in the past[211].

Today, Salish and Kootenai oral history and cultural traditions maintain the connection between Indian people and their aboriginal territories. In particular, Coyote stories refer to specific landmarks both within and outside the Flathead Indian Reservation boundaries, and explain the origin of "The People" and their relationship to the land.[212]

Tribal members continue to practice their traditional religious beliefs, as well as subsistence activities both within and outside the reservation.

6.14.2. Outline of Reservation History

In 1855, representatives of the Salish[213] and Kootenai Tribes signed the Hellgate Treaty. Their intent was to establish a peaceful relationship with other Native American groups in the area as well as with the ~~Euro-Americans~~Euroamericans who were beginning to settle in the region.

The Hellgate Treaty provided that the Confederated Salish and Kootenai Tribes "ceded, relinquished, and conveyed" to the United States their "right, title, and interest" in much of what is now western Montana, reserving the present Flathead Indian Reservation to the exclusive use and occupancy of the Tribes. Pursuant to the Hellgate Treaty, the Tribes also retained certain specific proprietary and usufructuary rights to the use of their off-reservation aboriginal homelands. The Tribes reserved to themselves hunting, fishing, harvesting and grazing rights in their aboriginal territory, as well as the right of passage through such aboriginal territory, in perpetuity, among other rights. The Tribes reserved as their "permanent homeland" an area of land known today as the Flathead Indian Reservation.

~~In signing the treaty, the Salish and Kootenai agreed to cede to the United States vast tracts of aboriginal territory in western Montana. However a portion of this area was to be reserved and set aside as the Flathead Indian Reservation. The lands within its boundaries were to be reserved for the exclusive use of the Salish and Kootenai people.~~

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[210]The "Bitterroot" Salish and the Pend d'Oreille speak dialects of the same language. The Kootenai speak a language that is unrelated to Salish.

[211]Confederated Salish and Kootenai Tribes, comments on the draft EIS dated 27 June 1995.

[212]Germaine White, telephone communication with Janene Caywood, 1993.

[213]The term "Salish" as used here includes both "Bitterroot" Salish and Lower Pend d'Oreille.

~~The Salish and Kootenai also retained the right to hunt, fish and gather resources according to their traditions on open and unclaimed lands within the ceded territory[214]. The Salish and Kootenai retained the exclusive right to hunt, fish, and gather resources according to their traditions within the reservation boundaries. They also retained a right, held in common, to hunt and fish on open and unclaimed lands within their ceded territory.[215] The leaders of the Salish and Kootenai who signed the treaty understood the establishment of the reservation and the right to hunt, fish and gather resources on open and unclaimed lands outside the reservation boundary were meant to guarantee to Native Americans the retention of their traditional way of life.~~

In the ~~138~~141 years since the signing of the Hellgate Treaty, the Salish and Kootenai have faced numerous challenges to the preservation of their traditional cultural values. A major effect on the integrity of the reservation occurred in the early-1880s, when representatives of the Northern Pacific Railroad Company received permission from the federal government to construct the mainline for their railroad through, rather than around, the reservation. Many Indians feared construction of the railroad would bring non-Indians into closer proximity with the reservation, increasing pressure to open the lands within the reservation boundary to non-Indian settlement.

In 1882, Flathead Indian Agent, Peter Ronan convened a council between the Indians and representatives of the railroad. During the council, various Indian leaders expressed their opposition to the railroad. Eneas, one of the Chiefs attending the council, stated the following:

> I wish the Great Father to do me a favor, and consult my wishes, and not let the road go through this reservation. ... This reservation is a small country, and yet you want five depots upon it. These are the best spots on the reservation. What is the reason I should be encouraged when you take the best part of my country? My country was like a flower, and I gave you its best parts. What I gave I don't look for back, and I never have asked for it back. ... What are we doing to do, when you build the road? We have no place to go. That is why it is my wish that you should go down the Missoula river. I am not telling you that you are mean; but this is a small country, and we are hanging on to it like a child on to a piece of candy[216].

In 1883, Peter Ronan wrote:

> A fierce spirit of opposition still prevails on the part of many of the Indians to the construction; they [regard] the road as fatal to their interests, and the sure precursor of the abandonment of their homes and lands to the whites[217].

Clearly, the Salish and Kootenai people were concerned about the ramifications of the presence of a railroad within their reservation. Although a variety of factors ultimately led to the opening of the reservation to non-Indian settlement, the existence of the railroad provided access for both people and goods to a previously isolated area and likely hastened the process.

In 1887, passage of the General Allotment Act (also referred to as the Dawes Act) provided for allotment in severalty for all tribes residing on Indian reservations in the U.S. The act established the legality of assigning individual land allotments to individual Indians[218]. Allotment in severalty would be applied to any tribe the

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~~[214]Charles J. Kappler, Indian Laws and Treaties, 7 Volumes. Volume II Treaties (Washington D.C., Government Printing Office, 1907) pp. 722-725.~~

[215]Treaty of Hellgate, 1855.

[216]Notes of a Council. Held by Hon. Jos. K. McCammon Assistant Attorney General, appointed by the Secretary of the Interior to Negotiate an agreement with the Indians on the Flathead Reservation, for rights-of-way for the Northern Pacific Railroad through the Reservation "NA Aug. 30, 1882. Letters Received by the Office of Indian Affairs, 1881-1907. RG. 75, NA.

[217]Peter Ronan to Commissioner of Indian Affairs, February 1, 1883, Flathead Special Case no. 55. RG 75, NA, as Referenced in Timber, Tribes and Trust; a History of BIA Forest Management On The Flathead Indian Reservation (1855-1975), Historical Research Associates, (NP, 1977) p. 14.

[218]Article 6 of the 1885 Hellgate Treaty contains a provision allowing the assignment of lots to individual Indians residing within the Flathead Indian Reservation. Charles J. Kappler, Indian Laws and Treaties, 7 Volumes. Volume II Treaties (Washington, D.C., Government Printing Office, 1907) pp. 722-725.

President deemed to be "sufficiently civilized to become farmers and its reservation good enough to be cultivated."[219] Surplus lands (those left over after allotments were issued), would be sold by the government and the proceeds used for the benefit of the tribe.

Although Salish and Kootenai leaders opposed allotment in severalty,[220] the U.S. Government had begun "enrolling" Indians living within the Flathead Indian Reservation in 1902--in anticipation of issuing allotments. In 1903, Congressman Joseph Dixon introduced a bill calling for immediate allotment in severalty for the Salish and Kootenai and sale of unallotted lands. The Salish and Kootenai fears were realized in 1904, when Dixon's bill became law.

By 1910, the majority of "enrolled" Indians had been issued allotments, and the remaining reservation lands were opened to non-Indian settlement under existing homestead laws. The initiation of the Flathead Irrigation Project in 1909, which promised the potential for irrigation of dryland sites, made unallotted land within the Flathead Indian Reservation even more attractive to non-Indians[221].

The 1910 opening of the reservation resulted in the current pattern of land ownership within the reservation boundary. The largest consolidated blocks of tribal land occur in mountainous timbered areas, mostly along the borders of the reservation, and the area directly adjacent to the Flathead River. The more economically valuable irrigated cropland and grazing land in the valley bottom is largely owned by non-Indians.

6.14.3. Current Concerns

The concerns expressed by the Flathead (Salish) and Kootenai cultural committees regarding the proposed action are similar ~~in some aspects~~ to those expressed in the early-1880s, when the Northern Pacific Railroad Company proposed construction of a rail line through the Flathead Indian Reservation. Although the Salish and Kootenai people each have their own unique cultural traditions, for both groups, the retention of these values depends in part upon permanency of the natural landscape and ecosystems, and the retention of a real sense of cultural "community." Improved access, such as may result from the proposed action, is a concern since it threatens the primary relationship between people and nature that is the basis for traditional cultural values. Although the representatives of the Flathead and Kootenai cultural committees recognize the need for improving the safety of the existing highway, they believe the proposed action should be balanced with the need to minimize effects on the cultural values of the reservation. Improving the highway may accelerate the changes that already are taking place within the reservation.

As stated by the Flathead Cultural Committee, all of the lands within the reservation continue to be of cultural importance to the Salish and Kootenai people:

> It is not just the rural character of our area that we seek to preserve. It is also what we call the cultural environment. For our culture to survive, our people must live in a place that continues to hold a powerful

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[219]Frederick Merk, History of the Westward Movement (Alfred A. Knopf, New York 1978), p. 425.

[220]See discussion of "Flathead" Indians opposition to allotment in severalty as discussed in John Fahey *The Flathead Indians* University of Oklahoma Press, Norman 1974 pp. 246, 264.

[221]The Flathead Irrigation Project was one of several large-scale irrigation projects undertaken on Indian reservations in the west. The earliest projects fell under the supervision of the reservation agents or superintendents. However, in 1907 the Bureau of Reclamation assumed control of the larger Indian irrigation projects (including the Flathead Project), and was responsible for constructing the improvements. Ultimately, the Indian irrigation projects did not serve either of the purposes for which they were intended; they did not provide employment for, nor improve the agricultural prospects of Indian people. Prucha makes the following statement in assessing the outcome of Indian irrigation projects in general:

> "The overriding question in the end, however, was whether and to what extent the irrigation projects in fact benefited the Indians. Were the Indians actually using the lands for successful irrigated agriculture? The answer was no. It became increasingly clear through the 1920s that irrigation projects were authorized for Indian reservations, not with the primary intent of aiding Indian advance toward self-sufficiency, but to develop the arid West for the benefit of white interests." (p.894). All from Francis Paul Prucha, 1984 The Great Father: The United States Government and the American Indians, Vol. II University of Nebraska Press, Lincoln pp 888-894.

> sense of tribal identity, of community, of familiarity. The open spaces need to be kept open, the pristine places that nurture our bodies and souls need to be kept pristine, and the preponderance of tribal people in certain areas of the reservation needs to be protected[222]

In addition to the overall cultural significance of the lands within the reservation boundary, specific sites or areas may possess individual cultural/spiritual significance. Critical characteristics associated with these types of sites may include "purity," "privacy," "isolation" and "permanency." In some instances, the continued use of these areas is dependent upon the site being isolated and unchanged. Although improving the existing roadway is not likely to directly affect specific areas of importance, increased development--especially if it extends into more isolated areas, may threaten sites of spiritual significance to the Salish and Kootenai people.

6.14.4. Recorded Cultural Resource Properties

Cultural resource inventories have resulted in the identification of several types of cultural resource properties[223]. It is important to make the distinction between properties that have been formally recorded and subjected to the Section 106 review process, and those that are of spiritual significance to the Tribes.[224] Information regarding the latter type of site is confidential, thus these properties were not formally recorded, assigned numbers and entered into Montana Statewide Cultural Resource Site Files. The Salish and Kootenai cultural committees prefer to deal directly with construction engineers during project design in order to avoid these types of culturally sensitive sites.

Various formally recorded cultural resource properties are located within or adjacent to the proposed action. The recordation of most of these properties has occurred in conjunction with the completion of specialist reports for the proposed action. In the rural portions of the area, previously recorded properties consist primarily of Indian Allotments and Euro-American homesteads. Physical manifestations of these two activities include clusters of one or more buildings, or the archaeological remains of these resources (concrete foundations, building components, etc.).

Other types of properties recorded in the rural segments of the area include structures and buildings associated with the Northern Pacific Railroad, now operated under MRL, irrigation structures associated with the Flathead Irrigation Project, small commercial establishments, and an abandoned roadway. In addition, one historic Euro-American grave site, and two sites with prehistoric artifacts have been identified. In urban areas, previously recorded cultural resource properties include domestic homesites, community buildings such as schools and commercial buildings.

The built environment for residential housing in the Polson area consists primarily of modest dwellings of pre-World War II construction. Bungalows with numerous variations and small cottages predominate. Common variations on the bungalows include ~~draftsman~~Craftsman style and clipped gables.

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[222]Letter from Flathead Culture Committee to Mr. Michael T. Pablo, Chairman of the Confederated Salish and Kootenai Tribes. June 4, 1992, p.2.

[223]Cultural resource investigations conducted prior to preparation of this document have occurred at two levels of intensity. The existing road corridor from Evaro through Polson has been subjected to intensive pedestrian inventory wherein surface-visible prehistoric and historic properties have been recorded and subjected to review under the Section 106 process. Most of the recorded properties discussed below result from these inventories.

Arlee Alignments 3 and 4 and Ronan Alignments 2, 3, and 4 have received more limited coverage. Drive through surveys of architectural properties (those with standing buildings), coupled with courthouse research have been conducted for Arlee Alignments 3 and 4 and Ronan Alignments 2 and 3. This has resulted in a preliminary inventory of the buildings of historical age that lie adjacent to these alignments, with preliminary recommendations regarding their eligibility to NRHP. For Ronan Alignment 4, all buildings of historical age located adjacent to the alignment have been formally recorded and are in the process of being reviewed. Intensive archaeological inventories of the construction corridors of Arlee Alignments 3 and 4 and Ronan Alignments 2, 3, and 4 have not taken place.

[224]The Salish and Kootenai Culture Committees attribute cultural significance to the two prehistoric archaeological sites recorded during the course of this study. Thus, the distinction between formally recorded properties and those of cultural significance to the Tribes cannot be too finely drawn.

In Polson, commercial buildings date to the period between the late-1910s and late-1940s, and are dominated by brick storefronts. This is the primary style on both Main Street and US 93 as it bisects the central business district. Variations include art deco elements (added in the 1930s), wooden false-front storefronts, converted dwellings and modern commercial buildings of various styles.

The built environment for farm structures in the Polson area has shown an evolution from the initial small frame or log cabins to bungalows or novelty sided cottage farmhouses on more affluent farms. Western Ranch Aggregate style houses, where one or more structures have been relocated to abut a nucleus structure, are not uncommon. Grain bins have evolved from exposed frame, to stacked two-by-four, to round steel bins. Most barns in the area are relatively small frame structures to house small dairy operations or to stable a few horses.

All of the recorded properties have been evaluated against the criteria listed in 36 Code of Federal Regulations (CFR) Part 60, and which determine eligibility or ineligibility for listing in the National Register of Historic Places (NRHP).[225] For a property to be considered for listing in NRHP, it must possess integrity of location, setting, design, materials, workmanship, feeling and association. More importantly, it must be associated with significant historical patterns, events or people; or possess individual architectural/engineering distinction. In addition, archaeological properties may be determined eligible if they have yielded or have the potential to yield significant information regarding the prehistory and/or history of a given area. Individual properties that do not meet these criteria are designated as "ineligible" for listing in NRHP.

Of the various formally recorded properties, most have been determined to be ineligible for listing in NRHP[226]. Some have been determined eligible for listing in NRHP as indicated on Table 6.14-1 and described in following paragraphs.

Evaro School (24MO316)

The Evaro School is located on the north side of US 93, within the small town of Evaro. There are two buildings associated with this site--the one-room school and a small wood shed. The school is one story and has a gable roof and a bell tower. The exterior walls are covered with beveled wood siding, and the building contains one-over-one and six-over-six light double-hung windows.

Local residents constructed the school about 1920. Both Indian and non-Indian students attended the school until 1945. Since then the building has been used as a polling place and as a community center. Modifications associated with the latter use include conversion of the old teacher's quarters to a kitchen, and the addition of a handicapped access ramp. The building has been determined eligible for listing in NRHP under criteria A and C.

Northern Pacific Railroad Grade (24MO319/24LA199)

The main line of the Northern Pacific Railroad parallels the highway corridor between Evaro and Ravalli. In most areas improvements consist of a single grade with track and rails. This alignment has been used and maintained consistently since first constructed in the 1880s. The railroad has been determined eligible for listing in NRHP under criteria A and C.

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

A. That are associated with events that have made a significant contribution to the broad patterns of our history; and

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. They have yielded, or may be likely to yield, information important to prehistory or history (United States Department of the Interior (USDI), National Park Service (NPS) 1991:37). USDI NPS, National Register Bulletin 16, Guidelines for Completing National Register of Historic Places Forms 1991 US Government Printing Office, Washington.

[226]Site 24LA121 is a Euro-American grave site. Although ineligible for listing in NRHP, this site will either have to be avoided or the grave relocated prior to construction.

Table 6.14-1 NRHP Eligible Properties

Number	Description	Milepost Location
24MO316	Evaro School	6.8
24MO319 24LA199	Northern Pacific Railroad Grade	Crossing at 9.7, parallel from 6.5 to 7.3, 13.4 to 15.4, and 19.1 to 27.1
24LA131	Ravalli School	27.0
24LA133	Salzman Residence	27.2
24LA158	Woods Agricultural Complex	38.5
24LA159	Jenkins/Rungborg Farmstead	39.2
24LA161	Anderson Farmstead - Barn	45.2
24LA211	Lake Flour Mill and Granary	47.1, Alignment 4
24LA89	Northern Pacific Railroad, Dixon-Polson Branchline	56.6 to 59.5
24LA167	Casey Dentist Office	61.0
24LA177	Faunce House	60.6
24LA197	Paul House	59.8
24LA188	Tiddy House	60.3
24LA175	Anderson Cottage	60.8
24LA181	Poage House	60.5
24LA204	Caffrey Place - Barn, Feature 8	59.1, Alignments 2 & 3 (2.6 Miles west of US 93)

Morrison-Maierle and Carter Burgess. 1994.

Flathead Irrigation Project Canals (24MO327, 24LA122)

The Flathead Irrigation Project E Canal (24MO327) is crossed by US 93 at approximately Milepost 14.3. The R Lateral is located adjacent to the east side of the highway from approximately Milepost 15.7 to 16.7. The K Lateral is adjacent to and crosses US 93 between Mileposts 19.3 and 19.7.

The E Canal and the R and K laterals have not been evaluated for significance and eligibility to NRHP. Rather, they have been treated under the provisions of the Irrigation Ditch Programmatic Agreement among MDT, the Montana Historic Preservation Office (MSHPO), FHWA and the Advisory Council on Historic Preservation

(ACHP). Under this agreement, regular inventory and evaluation under Section 106 is suspended if the ditches are in regular current use. These sites are not evaluated further in this document.

Ravalli School (24LA131)

The Ravalli School, a one-room facility with Italianate design details, is located adjacent to the east side of the highway within the small community of Ravalli. It is a one story wood frame building with an asphalt-shingled hip roof. Exterior walls are covered with beveled siding, and the roof is covered with asphalt shingles. A square bell tower with a hip roof topped by a flag pole is located on the front of the building. A wooden stoop with wood railing provides access to the front of the building.

Missoula County School District 28 funded the construction of Ravalli School in 1913. For the next nine years the building housed grades 1-8, averaging 31 students per year. When Lake County was formed in 1922, the Ravalli School was closed and students were sent to St. Ignatius for schooling. Between 1923 and 1935 the building was used as a polling place and as an informal social center. The Ravalli Community Club purchased the building from School District 28 in 1935, after which it served as the community center for Ravalli until the late-1960s. Ravalli School has been determined eligible for listing in NRHP under criteria A and C.

Salzman Residence (24LA133)

A historically significant property, the Salzman Residence (24LA133) is located adjacent to the existing alignment within Ravalli and has been determined eligible for listing in NRHP under criteria A and C.

Woods Agricultural Complex (24LA158)

The Woods agricultural complex is located approximately 90 feet from the west side of US 93. This complex contains seven buildings and a corral -- the barn has been determined eligible for listing in NRHP under criterion C -- the remainder of the complex has been modified and is not eligible.

Jenkins/Rungborg Farmstead (24LA159)

The Rungborg farmstead is a cluster of eight buildings located approximately 275 feet west of US 93. This agricultural complex consists of a house and garage of log construction, and six frame outbuildings. The outbuildings include a chicken coop, a large barn and several sheds.

Initial development of this property occurred in 1913 when Frazer Jenkins received a patent for the property. Buildings are believed to have been constructed during the 1910s and early-1920s. The property has been determined eligible for listing in NRHP under criterion A -- for its association with non-Indian agricultural development within the Flathead Indian Reservation.

Anderson Farmstead - Barn (24LA161)

Situated immediately west of US 93 and one mile south of Ronan, the Anderson property consists of a house, a garage, a shed, and two barns. The buildings are all in close proximity to one another, and are linked by an asphalt driveway and turn-around. Cultivated grasses, flowers, and a garden, surround the house. The site is protected from the southward expansion of Ronan by a pasture-land buffer. It has been determined the only eligible component of this property is the barn, which is eligible for listing under NRHP criterion C.

Lake Flour Mill and Granary (24LA211)

This flour mill is located adjacent to the Northern Pacific Railroad Dixon/Polson branchline on the western outskirts of Ronan. The building complex includes a large multi-component building that incorporates a granary, flour mill and flour warehouse with several loading platforms. This complex has been determined eligible for listing under NRHP Criteria A and C.

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

The Northern Pacific branchline between Dixon and Polson consists of the railroad grade and track. This branch line has been determined eligible for listing in NRHP under criterion A.

Flathead Irrigation Project, Polson Z Canal (24LA90)

The Polson Z Canal is a concrete lined irrigation feature associated with the Flathead Irrigation Project. The ditch was constructed in 1922, and has continued to serve project users to the present.

This canal has not been evaluated for significance and eligibility to NRHP. Rather, it has been treated under the provisions of the Irrigation Ditch Programmatic Agreement among MDT, MSHPO, FHWA and ACHP. Under this

agreement, regular inventory and evaluation under Section 106 is suspended if the ditches are in regular current use. This site is not evaluated further in this document.

Paul Bunyan Tug Boat

The Paul Bunyan Tug Boat currently is housed at the Miracle of America Museum located on the southern outskirts of Polson. This boat has been determined eligible for listing in NRHP. However, ACHP has advised that the boat will not actually be listed until relocated to a more appropriate site. The boat is therefore not evaluated further in this document.

Casey Dentist Office

The Casey Dentist Office (24LA167) is a two story brick tavern on Polson's main thoroughfare (US 93) and retains most of the features associated with a brick-front commercial building. Although the facade windows have been recently in-filled, the basic configuration of the original plate glass windows is easily discernible. The building maintains its integrity of design, workmanship and feeling. It is eligible for NRHP under Criteria A and C.

Faunce House

The Faunce House (24LA177) is a small single story dwelling overlooking US 93 in Polson. Across the highway is the south shore of Flathead Lake. The Faunce House is a good example of a bungalow residence. Because it was apparently constructed at the same time as the other historic-age residences on the block, it is likely associated with the development of Polson immediately after the construction of the railroad branch line to the community. The Faunce House is eligible for NRHP under Criteria A and C.

Paul House

The Paul House (24LA197) is a Cottage Style single story dwelling with a daylight basement and attached garage. It is between US 93 and Flathead Lake in Polson. Constructed in 1942, it is a good example of a vernacular style dwelling. The site has excellent integrity, very good values of feeling, workmanship, materials, association, location and setting. It is in a neighborhood that has escaped strip commercial development despite its proximity to US 93. Based on the site's excellent integrity, it is eligible for NRHP under Criterion C.

Tiddy House

The Tiddy House (24LA188) is a single story duplex (Spanish Mission style) built in 1947 overlooking US 93 in Polson. Across the highway is the south shore of Flathead Lake. The site has excellent integrity, good values of feeling, association, location, setting, material and workmanship. Its values have remained relatively high because it is in an intact neighborhood that has for the most part escaped strip commercial development despite its proximity to US 93. The dwelling is a good example of the Mission Style; one of just two identified Mission Style structures in the town of Polson. Since the site has excellent integrity, it is eligible for NRHP under Criterion C.

Anderson Cottage

The Anderson Cottage (24LA175) is a small single story cottage on US 93 in Polson. It is an excellent example of a Minimal Traditional-style residence that is still located in a residential neighborhood. The residence retains the original features commonly associated with the style including the asbestos siding, windows, board and batten on the gable ends and the configuration. Although a wood deck and sliding doors have been added to the rear of the dwelling, they are not intrusive and keep in character with the property. The property is eligible for NRHP under Criteria A and C.

Poage House

The Poage House (24LA181) is a small single story dwelling overlooking US 93 in Polson. Across the highway is the south shore of Flathead Lake. The Poage House is an excellent example of a small Craftsman-style cottage. It retains all of the architectural features associated with the style, i.e., narrow reveal siding, Chicago-style windows, exposed rafters, brackets and configuration. The clipped gable roof, moreover, is an unusual feature of the residence. Based on the property's association with the early-20th Century development of Polson and its architectural integrity, the residence is eligible for NRHP under Criteria A and C.

Caffrey Place - Barn, Feature 8

The Caffrey Place (24LA204) is located along Caffrey Road south of Polson. The site consists of a large dairy barn, a bungalow dwelling, garage, three granaries, two grain bins, three pole hay barns, three equipment sheds, a potato cellar, a loafing shed, a modern metal shop, two trailer houses, and other assorted small structures.

The 65 x 82-foot dairy barn (Feature 8) is by far the most imposing structure on the farm. It was built around 1919 after the first barn burned down. Originally constructed with only the north shed roof extension, the opposite site shed extension was built around 1929. Because of the site's poor integrity, it is not eligible as a whole for NRHP. Only the dairy barn, Feature 8, is eligible for NRHP. The barn is one of the largest of its type in the Flathead Valley and is a good example of an early-20th Century dairy barn. Because its use ceased around 1970, it has had little modern alteration. Nor have any intrusive structures been built immediately adjacent to it. The dairy barn is eligible individually for NRHP under Criterion C.

6.15. PARKS AND RECREATION

The area has diverse recreation resources for outdoor activity.

Developed recreation occurs typically in community parks and recreation areas that feature picnic grounds, recreation fields for baseball and softball and school athletic fields and playgrounds in Arlee, St. Ignatius, Ronan, Pablo and Polson. The powwow and rodeo grounds at Arlee and the Lake County Fairgrounds at Polson are popular recreation centers located near US 93. Athletic fields for schools in Arlee and Ronan also are located near US 93.

In Polson, the Flathead River and Flathead Lake are the primary focus of recreation. Popular recreation activities include fishing, river rafting, sailing, motor boating, water skiing, wind surfing and canoeing.

Dispersed recreation occurs away from developed sites and includes activities such as hunting, hiking, driving for pleasure, golfing, bicycle touring, picnicking, softball, tennis and nature viewing.[227]

6.15.1. Parks and Recreation in Communities

There are nine parks and community recreation areas that have approximately 0.9 mile of frontage on the highway's existing ROW. The Arlee community park, St. Ignatius ballfield and Ronan ballfield each have approximately 0.1 mile of frontage on existing highway ROW. In Polson, five community parks/recreation areas combine to have 0.3 mile, and the Polson municipal golf course has approximately 0.3 mile of frontage on highway ROW.[228] (Appendix A, aerial photographs and maps)

Alignment alternatives away from the existing alignment also will be located in areas used for parks and recreation. At Arlee, Alignment 3 will be located between the community and the powwow and rodeo grounds, but the powwow and rodeo grounds will not have frontage on highway ROW. Alignment 3 also will be located near the school's athletic field, but without frontage on highway ROW. The Jocko River Trout Hatchery, located between Arlee and the Jocko River, provides land open to public recreation in the area of Alignment 3. Land between the hatchery and the schools is used by the schools to conduct athletic activities and science education studies and observations and is considered important by the schools.[229]

At Ronan, Alignment 2 (one-way couplet) will border the city park, the school's athletic field, and a ballfield. Ronan Alignments 3 and 4 will border another ballfield. At Polson, Alignment 2 (Caffrey Road - Kerr Dam Road) will pass along the west edge of the Seventh Avenue ballfield.[230]

6.15.2. Recreation Outside Communities

US 93 provides transportation services that support the goal of recreation management in providing a broad spectrum of recreation experience opportunities for the benefit and enjoyment of the public.

The scenic attractions in the region are prime destinations for tourism and recreation. According to a survey of persons who were from outside Montana and traveled US 93 in 1990, scenery was the major attraction for vacation visitors. Scenery was an attraction for 92% of visitors, while wildlife (48%), camping (38%), history (33%), local events (25%) and fishing (17%) were other important attractions.[231]

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[227]Carter-Burgess. 1993.

[228]Morrison-Maierle. 1993.

[229]Crane, Gayle, Superintendent, Joint School District No. 8, letter dated 28 March 1994 and Ron Snyder, Montana Department of Fish, Wildlife and Parks, letter dated 24 March 1994.

[230]Carter-Burgess, 1993.

[231]Institute for Tourism and Recreation Research, The University of Montana. Nonresident Visitor Profile, U.S. Highway 93 Travelers. September 1992.

Photography, viewing wildlife, visiting historic sites, museums and visitors centers, and day hiking were the most popular activities for vacation visitors who traveled US 93 in 1990.[232] (Table 6.15-1)

There are popular recreation sites in the area. Fishing and birding occurs at the Ninepipe National Wildlife Refuge, with 8,000 annual visitors, and the Pablo Wildlife Refuge receiving 2,000 annual visitors.[233] USFWS also operates the Kicking Horse and Duck Haven waterfowl production areas. (Sections 6.12 and 7.12)

The National Bison Range near Ravalli is visited by 160,000 persons, approximately 33% from the surrounding area, 33% from other western states, 16% from eastern states and 16% from foreign countries.[234]

In 1991, Flathead Indian Reservation conservation use permits were issued to 5,805 residents and 11,538 non-residents. In addition, there were issued a total of 12,529 fish stamps and 2,432 bird stamps. Kicking Horse Reservoir, which is on the reservation and has access from US 93, receives 11,000 annual visitors who participate in picnicking, fishing, bird hunting, bird watching and training bird hunting dogs.[235]

There are nine scenic/historic turnouts and 20 recreation sites adjacent to the highway.[236] The recreation sites include formal sites, such as a fishing access site operated by MDFWP in the area of Ninepipe National Wildlife Refuge. Other less-formal sites are located where rivers, such as the Jocko River north of Arlee, and creeks, such as Mission and Post Creeks, cross the highway. There is a concentration of sites used for recreation in the Ninepipe area. In the Polson area recreation activities occur at mostly undeveloped, dispersed sites along roads. Informal turnouts, which generally are wide areas along the road with sufficient room to park a vehicle, provide access to many of the dispersed recreation sites. There are 32 roads that intersect with US 93 and provide access to recreation sites away from the highway.[237] (Appendix A, aerial photographs and maps)

MDFWP manages four state parks and four state recreation areas near Flathead Lake. Visitation at state parks during the month of July 1992 was: Big Arm 9,905; Wayfarers 15,404; West Shore 6,204 and Elmo 8,247.[238]

6.15.3. Section 4(f) and Section 6(f) Properties

Chapter 12 identifies parks, recreation areas and wildlife and waterfowl refuges that are subject to Section 4(f) of the 1966 U.S. Department of Transportation Act, 49 U.S.C. 303 and Section 6(f) of the Land and Water Conservation Fund Act.

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[232]Ibid.

[233]Montana Department of Fish, Wildlife and Parks. 1992.

[234]U.S. Department of the Interior. National Bison Range. 1992.

[235]The Confederated Salish and Kootenai Tribes. 1992.

[236]The Confederated Salish and Kootenai Tribes have requested a change in wording for the Ravalli Hill historical sign. The Montana Department of Transportation, the Montana State Historical Preservation Office, the Confederated Salish and Kootenai Tribes and local governments will coordinate this change and any other changes of historical signs.

[237]Confederated Salish and Kootenai Tribes, Natural Resources Department. Planning information. 1993.

[238]Montana Department of Fish, Wildlife and Parks. Planning information. 1993.

Table 6.15-1 Activity Participation By Travel Groups

Activity	Percent
Photography	48
Viewing Wildlife	41
Visitor Centers	38
Day Hiking	37
Historic Sites & Museums	35
Auto/RV Camping	29
Picnicking	27
Fishing	16
Swimming	11
Naturalist Led Hikes	10
Powerboating	6
Special Events	5
Golf	5
Gambling	4
Horseback Riding	4
River Floating	4
Canoeing - Lake	2

Institute for Tourism and Recreation Research, The University of Montana. Nonresident Visitor Profile, U.S. Highway 93 Travelers. September 1992.

6.16. HAZARDOUS MATERIALS

6.16.1. Hazardous Material Assessments

A Phase I hazardous material assessment has been completed for the proposed action.[239] Phase I assessment involves conducting records research through local, state, and federal agencies for sites containing known releases of hazardous substances, generators of hazardous waste, underground storage tanks (UST), and other potential sources of hazardous materials. Also included in the Phase I assessment is a site walk-through and discussion with local property owners or residents, as necessary to identify additional potential sources.

Potential hazardous material sources adjacent to the highway were evaluated based on the use, storage and disposal practices observed from the public ROW. Residual contamination from past spills and releases on the highway also were considered in the evaluation. The primary contaminants identified during the assessment included petroleum hydrocarbons, agricultural products (fertilizer, herbicides and pesticides), solvents and degreasers and the unknown contents of observed drums. Most of the commercial facilities located adjacent to the existing highway ROW are connected to septic systems which, if used for waste disposal other than sanitary, also are considered a threat.

Areas of potential environmental concern were identified as listed on Table 6.16-1. As indicated on the table, areas of concern are ranked high, medium or low with regard to the likelihood that existing or new ROW has been adversely affected by hazardous materials or petroleum substances.

US 93 from Evaro through Polson has commercial vehicle traffic that carries petroleum products, fertilizers, pesticides and other materials. As indicated on Table 6.16-1, and as explained by tribal and local governments, several highway related hazardous material spills have occurred during recent years. Some have resulted in contamination of soils, streams and groundwater. Though no incidents resulting in human injury have occurred, the potential exists particularly where the highway passes through the communities of Arlee, Ronan and Polson and other populated areas.

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[239]Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Right-of-Way Corridor; Evaro to Polson, February 1993 and Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Polson Bypass Study, June 1993.

Table 6.16-1 Areas of Hazardous Materials Concerns

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
6.75	Abandoned gasoline station	Petroleum hydrocarbons	Low	Possible location of USTs are out of ROW.
6.90	Former post office/17095 US 93	Petroleum hydrocarbons	High to Moderate	USTs are located adjacent to highway ROW. Owner has received permit to remove tanks. Montana Department of ~~Environmental Quality~~~~Health and Environmental Sciences~~ (~~MDEQ~~~~MDHES~~) will require soil sampling to document whether tanks have leaked. Risk based on results of closure samples.
7.05	MDT maintenance yard	Petroleum hydrocarbons, solvents, waste oil	Low	Location of USTs and maintenance activities are not immediately adjacent to ROW.
9.95	Joe's Smoke Ring gas station	Petroleum hydrocarbons	High	USTs are located adjacent to ROW. Spills and overfills may have affected soil adjacent to ROW.
16.05	Kelly's Auto Glass & Salvage yard	Unknown	Low	Facility is too far from highway to affect soil adjacent to ROW.
16.70	Mission Valley Power Arlee substation	PCBs	Low	Transformers have reportedly never contained PCBs at this substation.
16.80	Unnamed Post & Pole business	Copper napthenate, petroleum hydrocarbons	High	Treated post storage yard in ROW. Facility also concern of Alignment 2 through Arlee.
Arlee, Alignment 1				
17.40	Vacant lot south end of Arlee (formerly McClures service station)	Petroleum hydrocarbons	High	Two USTs located approximately 25 feet east of ROW during metal detector survey. Location of USTs may affect construction activities.
17.50	Sanders Automotive	Petroleum hydrocarbons, solvents, waste oil	Low	Facility is too far from highway to affect soil adjacent to ROW.
	Auto parts store (former gas station)	Petroleum hydrocarbons	High	Locals indicate USTs were removed; however, no soil testing was done to document whether tanks had leaked. Disturbed area observed approximately 10 feet west of ROW.
17.55	Longhorn Cafe (formerly Arlee Mercantile gas station)	Petroleum hydrocarbons	High	Possible UST fill port observed approximately 3 feet from existing highway. No hits with metal detector. UST may be located in ROW.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
17.60	Vacant lot north of Stockmans Bar (former gas station)	Petroleum hydrocarbons	High	Possible UST fill ports observed in pavement along highway. No permission to perform metal detector survey of lot. Construction activities may be affected.
	Longhorn Bar (former gas station)	Petroleum hydrocarbons	High	No evidence of USTs observed and no hits with metal detector, though USTs may be close to ROW.
17.65	Jocko Medical Center (formerly CENEX gas station)	Petroleum hydrocarbons, solvents, waste oil	High	Documented petroleum contamination of soil and groundwater. Site being invested under DHES LUST Program.
	Arlee Station Auto Repair	Petroleum hydrocarbons, solvents, waste oil	Low	Facility is too far from highway to affect soil adjacent to ROW.
17.70	Star Movies (former gas station)	Petroleum hydrocarbons	High	No evidence of USTs but locals indicate two tanks are still in ground. No permission to conduct metal detector survey.
17.80	Joe's Food Farm and Conoco Station	Petroleum hydrocarbons	High	USTs are located approximately 25 feet west of ROW.
17.85	Fuel spill north of Joe's Food Farm	Petroleum hydrocarbons	High	Incident occurred on highway and affected ROW. Cleanup may not have been adequate.
18.90	Jocko Hollow Campground (formerly Jocko Mercantile gas station)	Petroleum hydrocarbons	Low	Owner indicated one tank removed from site. No USTs detected during metal detector survey. Former location of UST too far to affect soil near ROW.
No likely hazardous materials sites have been identified on Arlee, Alignments 2, 3 and 4				
22.00	Truck wreck fuel spill	Petroleum hydrocarbons	High	Incident occurred on highway and affected ROW. Cleanup may not have been adequate.
23.30	Midway Store gas station	Petroleum hydrocarbons	High	Gas pumps located on border of ROW.
	Midway Store dump	Volatile organic compounds	Low	Dump out of ROW. Not likely that effects to soil have occurred along highway.
26.70	Residential dumping in Ravalli	Unknown	Low	Dump out of ROW. Not likely that effects to soil have occurred along highway.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
26.75	4-Star Bar (former gas station)	Petroleum hydrocarbons	High	Concrete pedestal with protruding pipe west of building. Survey plans indicate gas pumps south of building (former fruit stand). No hits with metal detector at either location. Locals say USTs beneath building addition.
26.85	Rocky Mountain Pellet Mill	Solvents, waste oil	High	ROW at edge of building.
26.90	Keith's Ag Equipment	Solvents, waste oil	High	ROW at edge of building.
27.00	Former Mission Feed and Grain and bulk fuel plant	Petroleum hydrocarbons, agricultural chemicals	Low	No indication of former development.
27.05	DuMontier Oil Company Sinclair Station	Petroleum hydrocarbons	High	Product lines in ROW.
27.10	MDT maintenance yard	Petroleum hydrocarbons, solvents, waste oil	Low	USTs out of ROW. Not likely that effects to soil have occurred along highway.
27.25	Jocko Trading Post (formerly Blue Bell Antiques & gas station)	Petroleum hydrocarbons	High	Site under investigation through ~~MDEQ~~MDHES LUST Program.
27.30	Ravalli Cash Store	Petroleum hydrocarbons	High	ROW close to pump islands.
27.35	Goods Muffler (formerly Brown's Texaco)	Petroleum hydrocarbons	Moderate	USTs removed with no soil contamination. Spills and overfills may have affected ROW soil.
27.40	Bison Inn and Cafe (former gas station)	Petroleum hydrocarbons	Moderate	Locals indicate USTs are beneath new building addition and close to ROW.
27.55	Mission Valley Power Ravalli substation	PCBs	Low	Transformers have reportedly never contained PCBs.
32.45	Mission Creek diesel spill	Petroleum hydrocarbons	High	Incident occurred on highway and affected ROW. Cleanup may have not been adequate.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
32.65	Doug Allard's Indian Museum and Trading Post (gas station)	Petroleum hydrocarbons	High	Product lines and USTs in ROW.
33.00	Starvin Marvin's (abandoned gas station and auto repair)	Petroleum hydrocarbons, solvents, waste oil	High	USTs in ROW.
33.55	Mission Valley Power St. Ignatius substation	PCBs	Low	Transformers have reportedly never contained PCBs.
37.00	Post Creek Store (R & R Auto Repair)	Solvents, waste oil	Moderate	USTs have been removed and petroleum not detected in soil samples. Facility within ROW. Spills and overfills from past fuel dispensing or automotive maintenance activities may have affected soil.
42.05	MDT maintenance yard	Petroleum hydrocarbons, solvents, waste oil	Moderate	USTs have been removed and petroleum not detected in soil samples. ROW through yard of facility. Spills and overfills from past fuel dispensing or equipment maintenance activities may have affected soil.
42.15	Countryside Cafe & Truck Stop	Petroleum hydrocarbons, solvents, waste oil	High	USTs have been removed but results from closure samples not yet received by ~~MDHES~~MDEQ. ROW through former tank area. Spills and overfills from past fuel dispensing activities may have affected soil.
42.25	Long's Livestock and Trucking	Petroleum hydrocarbons	Low	UST out of ROW. Not likely that soil adjacent to highway has been affected.
45.55	Western Ag Sales and Service	Petroleum hydrocarbons, pesticides and other agricultural chemicals	High	Fertilizer tanks close to ROW. Areas of stressed vegetation observed on premises.
Ronan, Alignment 1				
46.25	CENEX Farm & Home Supply Store	Petroleum hydrocarbons	High	Tanks close to ROW. Documented petroleum contamination to groundwater beneath highway. Site under investigation through ~~MDHES~~MDEQ LUST Program.
46.25	CENEX bulk plant	Petroleum hydrocarbons	High	ROW through yard of bulk plant. Documented petroleum contamination to soil and groundwater. Site under investigation through ~~MDHES~~MDEQ LUST Program.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
46.30	Scott Lynch Fencing	Copper napthenate, penta, petroleum hydrocarbons	High	ROW close to post storage yard. Surface runoff of wood treating compounds may affect ROW soil.
46.40	Abandoned New Holland Ford Dealership	Petroleum hydrocarbons	Low	USTs removed and petroleum not detected in soil samples.
46.50	George's Exxon	Petroleum hydrocarbons	Moderate	Tanks far enough away from ROW but spills and overfills may have affected ROW soils (staining visible)
46.75	Exxon Town Pump	Petroleum hydrocarbons	High	Tanks and pumps close to existing ROW.
46.85	Jensen Oil Company and Conoco Station	Petroleum hydrocarbons	High	Pumps close to existing ROW. Tanks located about 25 feet west of ROW.
47.00	Ronan State Bank (former gas station)	Petroleum hydrocarbons	Moderate	Tanks all removed from site but spills and overfills from fuel dispensing activities may have affected ROW soils.
47.10	Arnie's Gas and Tire Center	Petroleum hydrocarbons	High	Tanks and pumps close to existing ROW.
47.20	Don Aadsen Ford Dealership	Petroleum hydrocarbons, solvents, waste oil	Moderate	Location of UST not close to ROW but 1983 spill of crank case oil from UST to sewer may have affected ROW soil.
47.30	J's Convenience Store and gas station	Petroleum hydrocarbons	Low	Tanks not below ground and away from ROW. New piping installed and soil remediation performed.
Ronan, Alignment 2				
46.25	CENEX Bulk Plant	Petroleum hydrocarbons	High	See Alignment 1 remarks above.
46.30	Scott Lynch Fencing	Copper napthenate, penta, petroleum hydrocarbons	High	See Alignment 1 remarks above.
ND	Hodge Radiator (former gas station)	Petroleum hydrocarbons, solvents, waste oil	High	Possible fill port at northeast corner of property may be in ROW. Fifty years of auto maintenance may have affected soil.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
ND	Ronan Power Products (former gas station)	Petroleum hydrocarbons	High	Pump island at southeast corner of property. Tanks may still be in ground and close to ROW.
ND	Mission Valley Power maintenance yard	PCBs, penta, solvents, petroleum hydrocarbons	Moderate	Treated poles stored in yard and soil staining evident on property. According to power company official, no pole treating performed or PCB-containing equipment stored on site.
ND	School District vehicle maintenance yard	Petroleum hydrocarbons, solvents, waste oil	Low	No evidence of UST fill ports or vent lines. No hazardous material storage observed in yard.
47.20	Don Aadsen Ford Dealership	Petroleum hydrocarbons, solvents, waste oil	High	UST near proposed ROW. See Alignment 1 remarks above.
47.30	J's Convenience Store and gas station	Petroleum hydrocarbons	Low	See Alignment 1 remarks above.
Ronan, Alignment 3				
ND	Lake County road maintenance yard	Petroleum hydrocarbons, solvents, waste oil	High	Treated poles stored in yard. Stained soil observed on property.
ND	Ronan City Shop	Petroleum hydrocarbons, solvents, waste oil	Low	Site is far enough away from potential ROW. Effects to soil not likely.
ND	Automotive garage	Solvents, waste oil	Moderate	Stained soil and drums observed on property. Facility not on ROW.
ND	Post and Pole storage yard	Copper napthenate, penta, petroleum hydrocarbons	High	Treated poles stored on site.
Ronan, Alignment 4				
ND	MLS Feeds	Pesticides	Low	Facility west of railroad tracks and out of ROW.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
ND	CENEX/Co-op Supply Store	Petroleum hydrocarbons, agricultural chemicals	Low	Main facility on west side of railroad tracks. Material storage east of tracks mostly lumber. No hazardous material observed on east side of tracks.
ND	Westland seed plant west of substation	Agricultural chemicals, pesticides	High	Evidence of chemical (fertilizer) spillage observed in and around building. Plant near potential ROW.
ND	Mission Valley Power Ronan substation	PCBs	Low	No PCB equipment reportedly used or stored at the site.
ND	Lake County Weed District	Herbicides	High	Documented soil contamination on property. Potential ROW close to site.
ND	Bulk fuel plant	Petroleum hydrocarbons	High	Potential ROW close to site.
47.55	Ronan Auto Body & Chrysler Dealership	Petroleum hydrocarbons, solvents, waste oil	Low	Repair bays and UST not close to ROW.
51.90	Joe's Jiffy Stop	Petroleum hydrocarbons	High	Tanks near highway. Vapor extraction system in place near ROW. Site under investigation through ~~MDHES~~MDEQ LUST Program.
52.00	Tribal Fish and Game	Solvents, waste oil	Low	Sufficiently distant from highway.
	BC Auto Center	Petroleum hydrocarbons	High	Pumps and USTs near highway.
52.10	Road maintenance yard	Solvents, waste oil	Low	ROW not near tanks.
52.30	Mission Valley Power Pablo substation and storage yard	PCBs, penta, petroleum hydrocarbons	Low	No ROW into yard.
53.20	Bob's Auto Mart	Solvents, waste oil	Low	Maintenance activities not near ROW.
53.2-53.4	Plum Creek Lumber Manufacturing Company	Solvents, waste oil	Low	Maintenance activities and chemical storage not near ROW.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
53.40	Jim & Wanda's Country Store	Petroleum hydrocarbons	High	Tanks and pumps close to ROW.
54.60	Castlio Drilling and waste pit	Solvents, waste oil	Moderate	Stained soil observed near ROW.
54.70	Unnamed construction company	Petroleum hydrocarbons, solvents, waste oil	High	Maintenance shop close to ROW.
54.80	Tire's-R-Us	Petroleum hydrocarbons	High	Maintenance activities close to ROW.
54.85	Mikesell's Auto and Equipment	Solvents, waste oil	Low	Maintenance activities not near ROW.
54.90	Polson Auto Salvage	Unknown	Moderate	ROW goes through part of yard.
54.8-55.0	Lake County wood waste disposal pit (old Polson landfill)	Petroleum hydrocarbons, volatile organic compounds	Low	UST and waste disposal activities away from ROW.
Polson-Alignment 1				
56.5-56.6	Pioneer Chevrolet Dealership US 93 & Caffrey Road	Petroleum hydrocarbons, solvents, waste oil	Low	Automotive maintenance and USTs at site. ROW does not include site. Also concern of Alignments 2 and 3.
56.6	AT & T Repair 56605 US 93 South	Solvents, waste oil	Low	Automotive maintenance performed at site. ROW does not include site.
57.1-57.2	Polson Ready-Mix Concrete 57093 US 93 South	Petroleum hydrocarbons, solvents, waste oil	Low	Equipment maintenance performed at site. ROW does not include site.
57.8	Automobile wreck and gasoline spill Bottom of Polson Hill	Petroleum hydrocarbons	Low	Most of spill recovered.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
58.2	Mechanics Mall 58116 US 93 South	Solvents, waste oil	Moderate	Automotive maintenance performed at site. Soil staining evident but not on ROW.
58.4-58.7	Pack River Lumber Company 58719 US 93 South	Petroleum hydrocarbons, solvents, waste oil	Low	Documented release from UST also equipment maintenance performed on premises. ROW does not include site.
58.4	Asphalt oil spill Lumber company driveway	Petroleum hydrocarbons	Moderate	Most of oil spilled on lumber company driveway and highway ROW. Bentonite chips spread to absorb spill.
59.00	Tradewinds Realty (formerly Gulf Oil gas station) Junction US 93 & 35	Petroleum hydrocarbons	High	ROW through area currently occupied by USTs.
59.05	ReMax Realty (formerly Standard Oil gas station) Junction US 93 & 35	Petroleum hydrocarbons, solvents, waste oil	High	Fill port visible in concrete. ROW within 20 feet of tanks.
59.65	Cherry Hill Motel 1810 US 93	Petroleum hydrocarbons	High	Documented soil contamination within 10 feet of ROW due to releases from old refinery or leaking heating oil USTs.
59.72	Polson Town Pump 1714 US 93	Petroleum hydrocarbons	High	Documented soil and groundwater contamination in ROW. Probable contamination beneath highway. ~~MDHES~~MDEQ LUST Program has requested further investigation of this site.
59.75	Video Station (formerly Sloan's Appliance and Town Pump) 1702 US 93	Petroleum hydrocarbons	High	Documented soil and groundwater contamination in ROW. ~~MDHES~~MDEQ LUST Program has requested further investigation of site.
59.95	Polson Bay Grocery and gas station US 93	Petroleum hydrocarbons	Moderate	Highway ROW may be affected due to spills and overfills. No documented release from USTs.
60.17	Driftwood Restaurant (former gas station) US 93	Petroleum hydrocarbons	High	Tanks closed in place during mid-1970s. Location of tanks thought to be within 20 feet of existing highway ROW. Spills, overfills, or releases from USTs may have affected highway ROW.
60.75	KwaTaqNuk Resort (formerly Roy's Bayview 76) 303 US 93	Petroleum hydrocarbons	Moderate	Southwest corner of resort property formerly occupied by gas station. Spills, overfills, or releases from USTs may have affected highway ROW.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
60.80	Car Wash (formerly Flathead Lake Chevron) 209-2nd Avenue East	Petroleum hydrocarbons	Moderate	Soil testing during UST closure indicate tank systems did not leak; however, spills and overfills may have affected highway ROW.
60.87	93-Exxon 107-2nd Avenue East	Petroleum hydrocarbons, solvents, waste oil	High	No documented release from USTs but spills and overfills may have affected existing highway ROW. Property has been used for automotive repairs.
60.92	Safeway Store 104-2nd Avenue East	Petroleum hydrocarbons	High	Documented soil and groundwater contamination associated with site. ~~MDHES~~MDEQ LUST Program has requested further investigation of this site.
60.93	Denesen Gallery 13-2nd Avenue East	Petroleum hydrocarbons	High	Documented soil and groundwater contamination associated with site. Soil removal has been performed in conjunction with tank removal but residual soil contamination may exist in highway ROW. ~~MDHES~~MDEQ LUST Program has requested further monitoring of site.
60.93	Beacon Tire Center 14-2nd Avenue East	Petroleum hydrocarbons, solvents, waste oil	High	Documented soil and groundwater contamination associated with site. Soil removal has been performed in conjunction with tank removal but residual soil contamination may exist in highway ROW. ~~MDHES~~MDEQ LUST Program has requested further monitoring of site.
61.00	Tanstaafl & Company (formerly Bigfoot Alpha Discount) 1-2nd Avenue East	Petroleum hydrocarbons	Moderate	Near-surface soil contamination associated with tank excavation below building. Deep soil contamination (15-18 feet below ground surface) (bgs) in highway ROW from migration of petroleum products on top of groundwater from north Polson release sites. ~~MDHES~~MDEQ LUST Program has requested further investigation of site.
61.02	Former Salish Hotel 110 Main Street	Petroleum hydrocarbons	Moderate	Soil contamination associated with tank excavation. Deep soil contamination (15-18 feet bgs) in highway ROW from migration of petroleum products on top of groundwater from north Polson release sites. ~~MDHES~~MDEQ LUST Program has requested further investigation of site.
61.02	Pier 93 9-2nd Avenue West	Petroleum hydrocarbons	High	Documented release from this facility is not considered to have contributed to groundwater contamination in north Polson area. However, spills and overfills may have affected soil within 20 feet of existing highway ROW. Deep soil contamination (15-18 feet bgs) in highway ROW from migration of petroleum products on top of groundwater from north Polson release sites.
61.03	Glacier Bank 14-2nd Avenue West	Petroleum hydrocarbons	Moderate	Suspected soil contamination at 15 to 18 feet below ground surface in highway ROW related to migration of petroleum products on top of groundwater from north Polson release sites.

Table 6.16-1 Areas of Hazardous Materials Concerns (continued)

MILEPOST INVERVAL	FACILITY NAME	POTENTIAL CONTAMINANT	LIKELIHOOD THAT RIGHT-OF-WAY HAS BEEN AFFECTED	REMARKS
61.46	MDT maintenance facility and Lake County shop West of Polson	Petroleum hydrocarbons, solvents, waste oil	High	Historic use of site for equipment maintenance and fuel dispensing may have caused adverse effects to soil within 50 feet of existing highway ROW. This site is also a concern of Alignment 2.
61.50	3-Dog Down & Dixie Antiques (former Cenex gas station) 61541 US 93	Petroleum hydrocarbons	High	Spills, overfills or releases from USTs may have affected soil within 30 feet of existing highway ROW.
Polson, Alignment 2				
ND	Pioneer Chevrolet Dealership US 93 & Caffrey Road	Petroleum hydrocarbons	Low	See description under Alignment 1 above. Also concern of Alignment 3 alignment.
ND	Gravel pit Caffrey Road, 0.25 miles west of Skyline Drive	Petroleum hydrocarbons	Moderate	Spills and overfills from fuel storage and dispensing activities may have affected soil near new highway ROW. Also concern of Alignment 3.
ND	Wastewater treatment plant Kerr Dam Road	Nutrients, Bacteria. Metals	Moderate	Unlikely that soil would be adversely affected by potential contaminants.
ND	MDT maintenance facility and Lake County shop West of Polson	Petroleum hydrocarbons, solvent, waste oil	High	See description under Alignment 1 above.
Polson, Alignment 3				
ND	Pioneer Chevrolet Dealership US 93 and Caffrey Road	Petroleum hydrocarbons	Low	See description under Alignment 1 above. Also concern of Alignment 2 alignment.
ND	Gravel pit Caffrey Road, 0.25 miles west of Skyline Drive	Petroleum hydrocarbons	Moderate	See description under Alignment 2 above.

Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Right-of-Way Corridor; Evaro to Polson, February 1993 and Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Polson Bypass Study, June 1993.
ND = Not Determined
ROW = Right-of-way

6.17. VISUAL

6.17.1. Landscape Character and Visual Quality

The landscape of the area of the proposed action is typical of northwest Montana, characterized by forested mountain ranges and the valleys that separate them. US 93 passes through the Rattlesnake Mountains and Evaro Canyon at the south end of the area, into the Jocko Valley bounded by the Jocko Hills on the east and the reservation divide on the west. Passing through Ravalli Canyon and the National Bison Refuge, the highway then travels through the Mission Valley bounded on the east by the Mission Mountain Range and on the west by the Salish Mountains~~Ranges~~.

In communities, the most important visual resource is the existing streetscape and community character and identity. The streetscape is comprised primarily of built structures and associated site development arranged linearly along the corridor. The quality scale and texture of development including building styles and materials, parking lots, landscaping, signage, overhead utilities and natural features all contribute to visual character and image. In all of communities, (less so in Ronan and Polson) the texture of the development is small and fragmented. Existing setbacks are minimal and pedestrian amenities limited. Undefined access, signage, overhead utilities and parked vehicles visually encroach on the corridor.

In general, the visual quality viewed from US 93 is above average, encompassing canyons and valleys. Five landscape units, each with distinct characteristics, include Evaro Canyon, Jocko Valley, Ravalli Canyon, Mission Valley and Polson. Figure 6.17-1 identifies the areas of the landscape units, along with the topographic viewshed. Unique characteristics of each landscape unit and existing visual quality are described below.

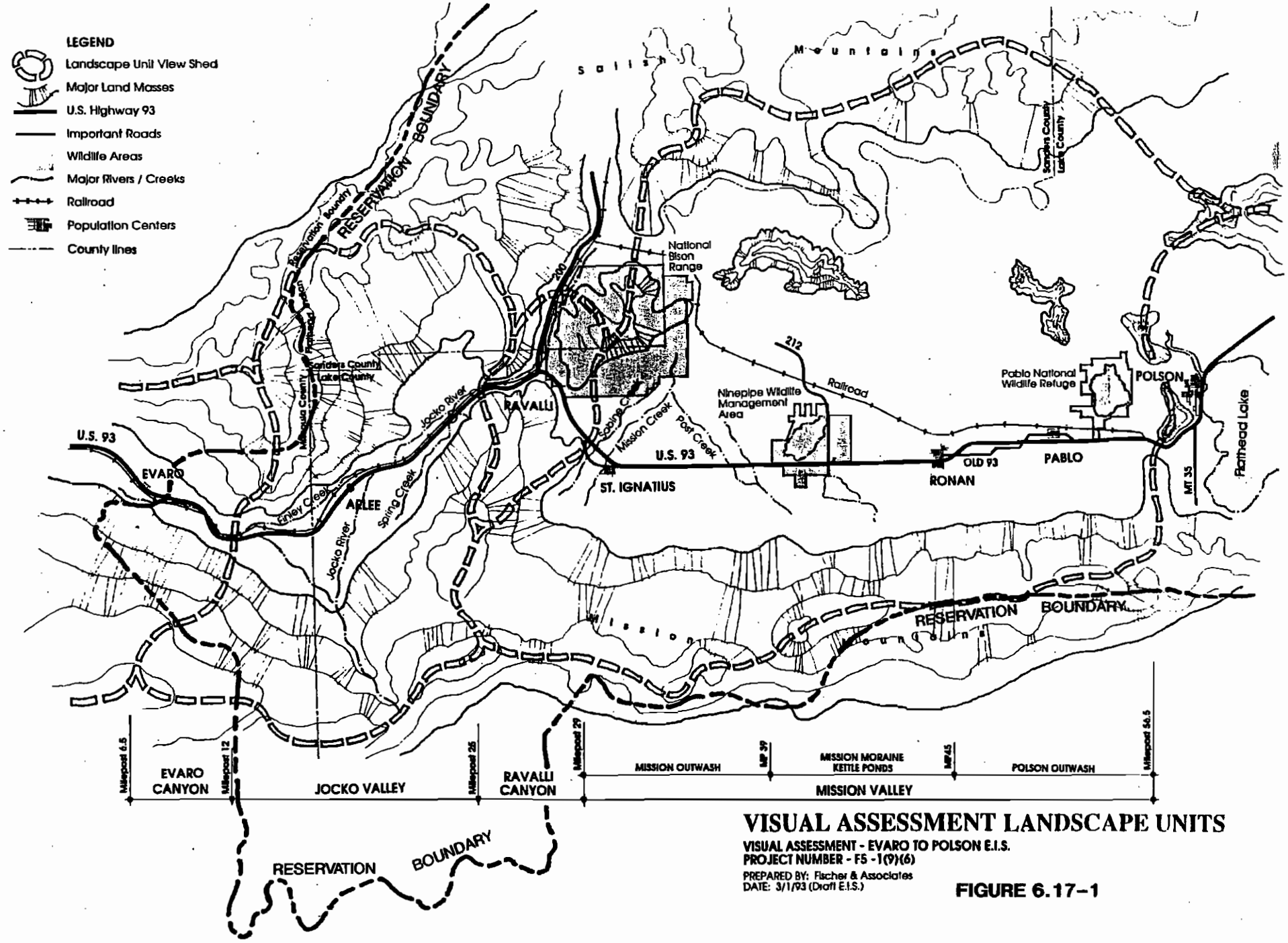
Evaro Canyon

The Evaro Canyon Landscape Unit is exceptionally scenic, with many majestic mountain views in the background framed by mature foreground conifers along most of the roadside. Views from the road display diversity as the curvilinear road alignment reveals a dramatic sequence of changing views with contrasting colors, texture, line and form. Foreground and high background views dominate this unit because nearly continuous mature conifers along the roadside eliminate mid-distance views. Strong color, texture and vertical form in the foreground contrast dramatically with the rough land mass of the mountains against the sky. Land use is mixed including undeveloped and forested natural areas, agriculture, scattered residential, limited strip commercial and the Evaro townsite. Existing visual quality is high offering diversity in views, landform and land cover. The scenic quality of the natural environment in the highway corridor is visually encroached upon by man-made development and an occasionally awkward interface, or connection, of the road with the landscape.

The Jocko Valley

The Jocko Valley presents wide views of an open, agricultural river valley surrounded by steep hills and mountains. The predominant land use is pasture and agriculture with scattered residences. Limited vegetation consist of mixed conifers and deciduous species. Deciduous species dominate low areas along drainages, roadside ditches, canals and the Jocko River,introducing strong lines and an occasional interruption to otherwise long, and distant views. The valley's outstanding natural setting is encroached upon by man-made development, most noticeably overhead utilities, signs, billboards and scattered development, located along the existing highway route. The scenic valley setting and encroachments from development combine to provide only a slightly above average rating of existing visual quality.

The town of Arlee occupies a visually closed position approximately midway through the Jocko Valley, snug between the toe of the slopes west of Finley Creek and the tall tree line along the Jocko River east of town. The southern entrance is defined by the abrupt curve and super elevation at Dirty Corner. The northern entrance is identified by the Jocko River crossing and the vertical tree mass in the wetlands. While Arlee has a distinctive setting with well defined natural perimeters, the town itself lacks visual definition along US 93. Views of small scale development, large overhead-utilities poles, parked vehicles and signs, combined with uncontrolled access and



VISUAL ASSESSMENT LANDSCAPE UNITS

VISUAL ASSESSMENT - EVARO TO POLSON E.I.S.
PROJECT NUMBER - F5 -1(9)(6)
PREPARED BY: Fischer & Associates
DATE: 3/1/93 (Draft E.I.S.)

FIGURE 6.17-1

inadequate highway drainage, negatively affect visual quality. Some attempt has been made to coordinate building character with a rustic theme. Cedar siding on several buildings and a split rail fence at the community center provide rustic character to Arlee.

Ravalli Canyon

The Ravalli Canyon Landscape Unit is exceptionally scenic, presenting a dramatic sequence of changing views, which are striking in diversity and unique in character. The unit "bridges" two valleys, framing intermittent mountain views with mixed riparian vegetation of the Jocko River on the southern end and simple rolling hills of the National Bison Range grasslands on the northern end. Land use is mixed including the conservation lands of the National Bison Range, undeveloped pastureland, and the community of Ravalli located near the intersection of MT 200, encompassing scattered residential, agriculture and strip commercial. The elevated railroad, river vegetation and highways are dominant lines at the southern end of this narrow valley. At the northern end, with the exception of overhead utilities, the relative lack of development emphasized by the simplicity of land forms, contrasting with the open sky, is striking.

The existing visual quality of the natural landscape of Ravalli Canyon is outstanding, offering unusual diversity in views, landform and land cover. The exceptional scenic quality of the natural environment is visually encroached upon by man-made development including highways, railroad, commercial sprawl and overhead utilities. The connection of the road and natural forms is awkward, particularly near the Jocko River floodplain and occasionally where it abruptly cuts into hills.

The Mission Valley

The Mission Valley presents panoramic views of an open valley nearly 30 miles in length and width. Bordered by the Salish Mountains to the west and the Mission Mountains to the east, it includes three distinct geological units, described as The Mission Outwash (Mileposts 29 to 39), the Mission Moraine Kettleponds (Mileposts 39 to 45) and the Polson Outwash (Mileposts 45 to 56.5).

The Mission Valley's scenic setting is encroached upon by man-made development, most noticeably overhead utilities, signs, billboards, community commercial sprawl and scattered development, located along the existing highway route. The Mission Valley's mountain scenery combines an uninteresting highway alignment and man made encroachments, to provide only a slightly above average rating of the existing visual quality.

Lines of mixed, primarily deciduous vegetation traverse the Mission Outwash following creeks and drainage courses, adding foreground interest and occasionally framing distant views in this otherwise open landscape. A three-mile stand of scattered, mature lodgepole pine frames intermittent views of the mountains from the existing highway corridor and defines the east edge of the town of Pablo, adding a distinctive identity to the community.

Kettleponds and two large reservoirs are features unique to the Mission Moraine area. High ground water has noticeably limited development and agricultural use of this zone. The predominant use is recreation and wildlife conservation. These interesting landscape features go unnoticed by travelers as the road elevation and alignment preclude visual access.

Although development has affected the viewshed in many areas, the majority of the Mission Valley corridor remains outstanding aesthetically, especially in the undeveloped agricultural and wildlife management areas. The Mission Mountains, which are devoid of forest clearcuts due to CSKT wilderness status, and kettleponds along the roadside attract tourists and local residents for their photogenic appeal.

Ronan is located in the center of the Mission Valley where the rolling land exposes views of prosperous agricultural lands. Spring Creek diagonally bisects the town of Ronan providing a strong line of vegetation, serving as the towns linear open space and crossing under the highway near its intersection with Main Street. Development along the existing highway corridor through Ronan consists of small to medium scale conventional highway commercial

with minimal setbacks. Visually the highway divides the town, and commercial sprawl, overhead utilities and encroachment of signs detract from the overall character of this intact western town.

The Mission Valley ends near the top of Polson Hill, with dramatic views of the Flathead Valley and Flathead Lake. Land use, which varies in response to groundwater, soils, land ownership and settlement patterns, encompasses fertile agriculture, wildlife refuges, pastureland, scattered residences and the communities of St. Ignatius, Ronan and Pablo. With the exception of Pablo, vegetation is sparse through most of this unit, a large portion of the land has been previously harvested for timber.

Polson

The Polson Landscape Unit is part of a broad valley with surrounding mountains and several drainages feeding bodies of water within the valley. It is characterized by Polson Bay (part of Flathead Lake) immediately north of Polson, the Mission Mountains to the east, CSKT forest lands~~Flathead National Forest~~ to the west, and the Flathead River which flows southwest from Polson Bay. US 93, ~~climbs~~ drops into Polson from prominent hills on both ends of the city.

The landscape unit as a whole consists of Flathead Lake, the Flathead River, several manmade canals, croplands, the developed urban environment of Polson, rural areas with ranches and scattered homesites, and existing vegetation - mostly native grasses, deciduous trees along waterways and scattered groups of evergreen trees on hilly outcrops. The most dominant visual characteristic of the area is Flathead Lake. The hilly terrain surrounding the area provides a variety of opportunities for viewing the lake. There are also views of the lake from the highway as it passes through Polson, adjacent to the lake.

Visual quality along the proposed action ranges from open vistas of distant peaks to views of Flathead Lake and the Flathead River.

6.17.2. Viewers

Viewers from the Road

Groups of viewers from the road include local traffic, commuters, commercial traffic, and tourists. Viewer groups share common characteristics that determine how they evaluate visual quality:

- Local traffic may coincide with other user groups, but for analysis, local traffic refers to short trip users making connections within the community. Safe and convenient connection with US 93 is the main concern for this group, especially during periods of peak traffic load. Community connections are critical to their lives and must be maintained; the visual quality of the view from the road shapes part of their community image.

- Commercial traffic is most concerned with the speed and efficiency of the through traffic movement. For them, visual quality means the road is "easy to read" for safe travel with maximum efficiency. Visual driver expectation focuses on normal highway standards with clear community connection opportunities for necessary facilities/services in all seasons.

- Commuters are frequent users of the route and, therefore, familiar with likely hazards. They travel during peak periods in all seasons, and winter driving is often in the dark. Commuters' visual concerns focus on maximum speed, efficiency and safety of the through traffic movement, but without the need for community connection for services. The scenery is a primary asset for living and working in the Mission Valley.

- The scenic quality of views from the road is most important to tourists, often determining the route selected to reach a destination. At the present time, most tourists visit the area during the warm weather months. Tourists are usually unfamiliar with the route traveled, therefore, highway

standards for design and safety must be "easy to read" and are critical for safe visual decision making. Community connection must be visually well defined to provide needed facilities/services of highway- and tourism-oriented businesses. Their visual quality demands are different than other viewer groups. Their travel pace is more leisurely; they can be delayed by attractions along the way and may travel at a slower speed, particularly if there is high visual quality. (Sections 6.5 and 7.5)

Viewers of the Road

Viewers of the road consist of residents, commercial neighbors, travelers and communities.

Residents are scattered in rural settings or concentrated in small communities adjacent to the highway. Residential viewers will be most sensitive to changes in their view of the road, including higher traffic volume, road widening that brings traffic closer to their dwellings, and construction activities that reduce existing spacial, landform, or vegetative buffers between them and the highway. Visual quality for scattered rural viewers of the road is variable depending on their proximity to the highway and how well the highway fits into the setting at each location. In general, negative visual effects increase as the highway encroaches on private space, because of traffic volume, speed and associated audio cues. If the highway grade is higher than adjacent property, it may intercept views of the community.

Commercial neighbors of US 93 are less sensitive to highway views because of daily activity levels in the business place. Commercial neighbors are concerned that foreground visual quality is adequate to attract business and to provide safe and convenient access.

Travelers become viewers of the highway when they stop to take advantage of commercial services and tourist attractions of highway related roadside facilities, including scenic turnouts, road side parks, and interpretive facilities. Travelers are concerned with the quality of roadside facilities, which may influence their length of stay, frequency of use and overall enjoyment of the experience.

The communities of Evaro, Arlee, Ravalli, St. Ignatius, Ronan, Pablo and Polson provide small concentrations of viewers of the road. In general, these communities have negative views of the highway. Where US 93 is a town's main street, development has occurred along the highway, starting when traffic volume was small, with a greater percentage of local traffic.

6.17.3. Visually Sensitive Resource Areas

Several Visually Sensitive Resource areas, namely the National Bison Range and the Ninepipe National Wildlife Refuge and the Mission Mountains, exist along the highway route where users/viewers are engaged in activities negatively affected by highway views.[240]

[240]Identification of visually sensitive resource areas is based on FHWA visual impact assessments for highway projects. Visual impact assessment considers qualities of vividness, intactness and unity. FHWA-HI-88-054

6.18. RELOCATIONS

Residences, businesses and other buildings located within 200 feet of the centerline of the existing highway or of each of the alignment alternatives under consideration are summarized on Table 6.18-1. Structures near the existing highway are affected by highway traffic operation and resulting safety, air quality, noise, visual and other highway-related conditions, as described in other sections of the final EIS.

Table 6.18-1 Residences and Buildings, Distance from the Highway

Segment	Distances From Highway Centerline to Face of Building (Feet)								
	Less Than 100 Feet			100 Feet to Less Than 150 Feet			150 Feet to 200 Feet		
	Residence	Business	Other	Residence	Business	Other	Residence	Business	Other
A	4	2	0	15	6	1	31	6	2
B1	8	13	10	10	1	9	18	0	12
B2	0	0	0	0	0	1	1	0	5
B3	0	0	1	0	0	2	1	0	1
B4	1	0	1	0	0	0	3	0	1
C	1	0	0	0	2	1	3	4	4
D	0	0	0	0	0	0	0	0	0
E	3	6	0	5	6	12	1	1	0
F	1	0	0	0	0	2	0	2	1
G	0	2	0	0	1	2	0	5	3
H	2	0	10	1	2	5	3	2	17
I	0	0	0	1	1	2	1	1	6
J1	0	3	0	0	0	0	0	0	0
J2	0	5	0	0	0	0	0	0	0
J3	1	0	5	0	0	1	0	0	0
J4	0	2	9	0	0	5	0	0	5
K	0	0	0	0	0	0	0	0	0
L	0	1	0	3	0	8	3	2	12
M	0	1	1	0	0	3	0	0	9
N-O-P1	11	60	6	17	25	5	27	14	12
N-O-P2	10	3	5	3	0	1	9	2	2
N-O-P3	8	1	3	2	0	0	4	0	1
Total	50	99	51	57	44	60	105	39	93

Morrison-Maierle, 1993.

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7. ENVIRONMENTAL CONSEQUENCES AND MITIGATION

7.1. TRAFFIC OPERATION AND SAFETY

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The Montana Department of Transportation's (MDT) Preferred Alternative and the Confederated Salish and Kootenai Tribes' (CSKT) Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.1.1. Impacts Common To All Alternatives

With or without highway improvement, traffic demand is expected to continue to increase at an annual rate of three percent, which is the average annual rate of increase since 1970. By the design year ~~2015~~2020 (approximately 20 years after the earliest year portions of the proposed action are expected to be implemented), traffic will be slightly more than double the existing volume.~~, with average daily traffic (ADT) ranging from 10,510 at the permanent counter south of Ravalli to 13,110 in the Arlee area, 16,050 in the Ronan area and 21,700 in the Polson area~~. Truck traffic is expected to continue to be 13.7% of total traffic south of Montana Secondary (MTS)~~Federal Aid Secondary Highway (FAS)~~ 212 and 10% north of MTS~~FAS~~ 212.

Figure 7.1-1 shows the projected design year ~~2015~~2020 ADT and design hourly volume (DHV) at various locations along the highway. The historic 30 HV factors of ~~12.9~~12.6 and 10.7% for rural and community sections of the roadway (Section 6.1.4) have been applied to projected ADT to determine the DHV.

~~It is estimated that, for 1991 traffic volume, travel time will be reduced slightly on four lane highways as compared with the existing highway. As projected increases in traffic volume occur, travel time will then increase, on a four-lane highway, to near 1991 travel time on the existing two lane highway.~~Major increases in travel times are expected, as projected ~~2015~~2020 traffic volumes occur, with No Action or Lane Configuration A. Travel times on any of the four-lane configurations (Lane Configuration B, C or D) will be reduced only slightly as projected year 2020~~2015~~ volumes occur. There are no measurable differences in travel times among Lane Configurations B, C and D, each of which is a four-lane highway. ~~(Table 7.1-1)~~

[Table 7.1-1 in the draft EIS has been removed, and tables have been renumbered in the final EIS.]

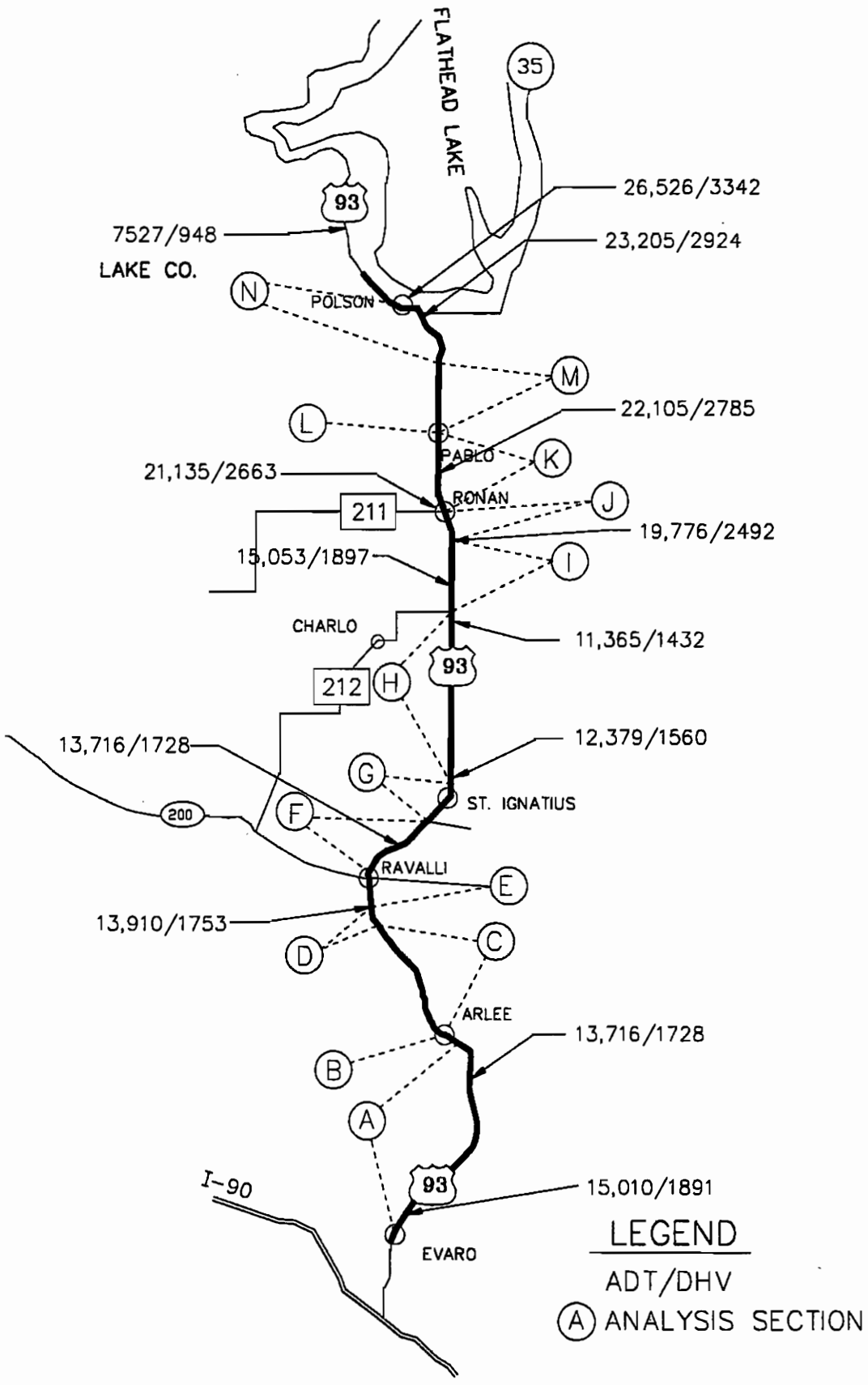
With any of the proposed lane configurations or alignment alternatives, safety benefits will occur due to improved alignments, grades, sight distance, shoulders, signing, left-turn bays, right-turn lanes and other related highway improvements.

Also, with any of the proposed lane configurations or alignment alternatives, substantial safety improvements will occur by the implementation of partial access control (also called limited access control) which will reduce the number of existing and future intersections and driveways on the highway.

Intersections and Signals

With all of the alternatives under consideration, including No Action, left turns from some side streets onto U.S. Highway 93 (US 93) will become more difficult as traffic volume increases. As indicated on Table ~~7.1-2~~7.1-1, LOS for this movement is projected to deteriorate to ~~D and~~ E by the design year 2020~~2015~~, at most intersections. At these service levels, long delays can be expected. At Round Butte Road (MTS~~FAS~~ 211) in Ronan and at Montana Highway (MT) 35 in Polson, where traffic signals are~~is~~ already in-place, LOS is projected to be B and C.

In addition to Round Butte Road in Ronan and MT 35 in Polson, it is estimated that signals may be warranted, and should be considered, at "B" Street (Butch Larsen/Taelman Street) in Arlee and Division Street in Pablo before the



2020 ADT & DHV

FIGURE 7.1-1

Table 7.1-1 2020 Intersection Operation

Intersection	Peak Hour Level-Of-Service*
B Street, Arlee (Butch Larsen/Taelman St.)***	D
MT 200, Ravalli	D
Main Access to St. Ignatius	D
MTS 212	E
Round Butte Road (MTS 211), Ronan***	B**
Division Street, Pablo	E
Clairmont Road, Pablo	E
Old U.S. 93, North of Pablo	E
MT 35	C**
Unsignalized streets in Polson***	E/F*
First Street East - Signalized***	B**

Morrison-Maierle, 1993.
* Left turns from side street onto U.S. Highway 93. ** With a traffic signal. *** If alternative alignments are constructed around these communities, traffic volumes will decrease substantially, and the LOS will be improved at these intersections.
This table has been revised in the final EIS using traffic volumes for the year 2020.

design year ~~2015~~2020. Signals may also be warranted at other locations. Where signals are installed, it is anticipated that LOS for left turns from side streets onto US 93 will be ~~B~~C or better through the design year.

Local governments, schools and other community organizations have expressed opinions that additional signals are needed on US 93, particularly as a means to assist and improve safety for school children and other pedestrians crossing the highway. As traffic volume increases, these intersections should be monitored and evaluated to determine if signals should be considered based on warrants specified by the Federal Highway Administration (FHWA).[1] The warrants take into consideration traffic characteristics such as traffic volume, vehicle type, pedestrian volume, pedestrian age, school crossings, vehicle speed, accident experience, interruptions and delays.

If warrants are met and before signals are installed, a complete study and intersection evaluation must be conducted to ensure the installation will improve safety overall and not create a safety problem of a different type or in a different location.

[1]Federal Highway Administration, Manual on Uniform Traffic Control Devices, 1988.

7.1.2. No Action

7.1.2.1. Roadway Geometrics

No Action will not correct the deficiencies in the existing geometric design of the highway, as described in Section 6.1.2. Substandard horizontal curves, vertical grades, vertical curves and shoulder width will not be improved and the resulting improvements in safety will not occur. As traffic volume continues to increase, the number of accidents are also expected to continue to increase.

If the highway is not improved, the large number of existing approaches will not be improved or reduced and the resulting reduction in intersection related accidents will not occur.

The highway will continue to pass through Arlee, Ronan and Polson, and existing adverse effects on traffic operation and safety, and the community, will not be improved.

7.1.2.2. Level-of-Service

An analysis of level-of-service (LOS) and capacity has been conducted for the design year ~~2015~~2020 for the existing highway and for alignment and lane configuration alternatives under consideration using methods outlined in the ~~1985~~1994 Highway Capacity Manual[2] and design hourly volumes described in the previous section.

Results of the LOS analysis for the existing, two-lane highway for the design year ~~2015~~2020 are summarized in Table ~~7.1-37.1-2~~. The existing highway will operate generally at LOS ~~E or~~ F. In areas where passing lanes exist in one direction, the highway will operate at LOS B in the direction of the passing lane~~, LOS F in the opposing direction~~ and LOS ~~E~~F overall.

LOS F represents heavily congested flow with traffic demand exceeding capacity (LOS E). As the capacity of the highway is exceeded, operations are characterized by stop and go waves, and flow is unstable, which further reduces the number of vehicles the highway can carry.

7.1.3. Existing Alignment (Except Arlee, Ronan and Polson)

The following sections describe traffic operation and safety impacts if Lane Configuration A, B, C or D is constructed on the existing US 93 corridor.

7.1.3.1. Roadway Geometrics

With any of the lane configurations under consideration, geometric design standard deficiencies (Section 6.1.2) will be corrected to achieve current 60 miles per hour (mph) design standards. The radius of the curve at Mileposts 25.3 to 25.5 in Ravalli Canyon will be increased from 1,050 feet to 1,200 feet (degree of curvature of 4°45') which will provide for a 60 mph design speed. The radius of the curve at Mileposts 27.5 to 27.7 at the base of Ravalli Hill will be increased from 820 feet to 950 feet (degree of curvature of 6°00') which will provide for a 55 mph design speed. Increasing the radius of this curve further, to meet 60 mph design standards, will cause substantial additional excavation and embankment with related environmental impacts that may outweigh the benefits to be gained.

Substandard vertical grades at the Jocko River crossing, Mileposts 18.8 to 19.1 will be improved to four percent to meet design standards for 60 mph. This will require reconstruction of the existing bridge over the river. As indicated in Section 7.11, the replacement of the bridge is also required to adequately accommodate expected flood flows.

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[2]Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, ~~1985~~1994.

Table 7.1-2 LOS of Existing Highway

Segment	Level-of-Service Year 2020
A - Evaro to Arlee	F(B)*
C - Arlee to Ravalli Canyon	F
D - Ravalli Canyon to Ravalli	F
E - Ravalli	E
F - Ravalli Hill	F(B)*
G - St. Ignatius	F
H - St. Ignatius to MTS 212	F
I - MTS 212 to Ronan	F
K - Ronan to Pablo	F
L - Pablo	F
M - Pablo to Caffrey Road	F
N - Caffrey Road to MT 35	F(B)*

*Level-of-service overall(in direction of passing lane)
This table has been revised in the final EIS using traffic volumes for the year 2020.

The grades on Post Creek Hill (Mileposts 38 to 40) that currently exceed four percent are for short lengths and can be improved to meet 60 mph standards without excessive additional excavation and embankment.

Improvement of the existing six-percent grades on Ravalli Hill (Mileposts 27.7 to 29.0) and on Polson Hill (Mileposts 57.3 to 57.8) is probably not desirable because it will cause substantial additional excavation and embankment with related environmental impacts that may outweigh the benefits to be gained.

All vertical curves (a curve in the vertical alignment designed to effect a gradual change between different vertical grades) will be constructed to meet 60 mph design standards. To achieve this, only minor revisions of the existing vertical alignment will be required.

All of the lane configurations will have eight-foot shoulders to meet design standards for the existing and projected future traffic volume. The wider shoulders will provide additional width for 1) emergency stopping on the roadway; 2) farm equipment, wide loads or other equipment using the roadway; 3) pedestrians and bicyclists (Sections 6.6 and 7.6); 4) a recovery zone for errant or out-of-control vehicles and 5) snow removal and storage. As a result, safety and driving comfort will improve.

The bridge over the railroad at Milepost 9.7 will require widening or reconstruction to accommodate any of the lane configurations.

The Jocko River bridge at Milepost 19.0 will require reconstruction because it is not wide enough to accommodate any of the lane configurations, will not accommodate estimated flood flows if it is widened (Section 7.11) and is too low to allow improvement of the existing substandard vertical grades.

The bridge over Post Creek will require widening or reconstruction because it is not wide enough to accommodate any of the lane configurations. As discussed in Section 7.12, a proposed mitigation measure for possible wildlife impacts is to increase the span of this structure to allow wildlife traveling along Post Creek to cross under the highway.

The bridge at Ninepipe Reservoir is not in good condition and is not wide enough to accommodate any of the lane configurations. It must be reconstructed.

Any of the lane configurations under consideration will require widening or reconstruction of the railroad bridge at Milepost 9.7. Portions of the railroad line near Polson between Mileposts 58.4 and 59.2 will require relocation. Other than these areas, construction will generally not affect the railroad. There will be some areas where temporary construction permits may be required to construct fill slopes, particularly if Lane Configuration B, C or D is constructed. Portions of the existing highway are constructed on easements granted to MDT by the railroad. To avoid additional impacts on the railroad if Lane Configuration B, C or D is constructed, the centerline of the new roadway must be adjusted away from the railroad in some areas to avoid encroachments closer to the railroad and outside the existing highway easements. The railroad has indicated that it cannot allow additional encroachments and will not grant additional easements in these areas.

7.1.3.2. Intersections and Driveways

With all of the lane configurations, intersections and approaches to the highway will be improved to provide angles of intersection with US 93 near perpendicular -- this will improve sight distance. Approach grades will be improved to three percent or less near the highway (within 75 feet on public approaches and within 25 feet on private approaches) and 10% or less away from the highway -- this will reduce problems with stopping as vehicles approach US 93 on down grades and with starting and accelerating on up grades. The number of approaches will be reduced as much as practical by eliminating unused approaches, consolidating approaches and by using frontage roads -- this will help improve safety, capacity, service level and driving comfort.

On most of the existing US 93 in the area, access currently is controlled through driveway and approach regulations where access is managed by MDT through application of road approach standards and permit requirements. Land owners desiring to construct a driveway approach need only obtain a permit from the Missoula District of MDT after demonstrating that it will be constructed properly and will not create a particular safety hazard. Sight distance for safety is the primary factor used to determine if it is appropriate to issue a permit for an approach.

MDT has purchased rights for partial access control (also called limited access control) for approximately 40% of the land adjacent to highway ROW between Ronan and Polson. Access rights have not been purchased for the remainder of the proposed action.

Implementation of partial access control is considered to be desirable for all of the lane configurations for most areas along the roadway except in the existing communities such as Arlee, Ravalli, St. Ignatius, Ronan, Pablo and Polson. Partial access control allows access at selected public roads and at private driveways as identified in deeds and other legal documents. Partial access control will be purchased from affected landowners along the highway. As part of the implementation of partial access control, approaches to US 93 will be eliminated where alternative access can be provided and consolidated with other approaches as much as practical. This will serve to reduce the number of existing and future approaches to the highway and thereby preserve and enhance safety, capacity and driving comfort.

Implementation of full control of access, which allows access only at specified road connections or interchanges, would create major adverse impacts for property owners adjacent to the highway, or it would require the construction of extensive sections of frontage road, which would have substantial additional right-of-way (ROW) requirements and related adverse environmental impacts. It is not recommended.

Access Management Plan

MDT will prepare and implement a specific access control plan for the proposed action. The plan will be site specific to consider a broad range of access, safety, traffic and land use factors on a parcel-by-parcel basis for determining numbers and types of approaches. The factors will be based on, but not limited to, the following:

- Character of traffic.
- Adjacent land use.
- Adjacent land division and ownership.
- Geometrics and design standards.
- Cost of special design features.
- Cost of future accidents.
- Cost of purchasing access rights.
- Public safety.
- Future development.
- Balance with needs for growth and economic well being.
- Environmental values

MDT will use information in the final EIS and other information available from the Confederated Salish and Kootenai Tribes and Lake and Missoula counties to develop the access control plan for US 93.

This plan also will be based on the 1992 MDT Access Management Plan (which is currently used by MDT as a guide for access management throughout Montana) and on a modified MDT access management plan that is currently being prepared based on recommendations of the statewide intermodal transportation plan, TranPlan 21. These plans are described in following sections.

1992 MDT Access Management Plan

The current MDT Access Management Plan (April 1992) has provisions of general policy about access management approved by the Montana Transportation Commission (MTC). Access management is the process of managing points of access to the highway through the use of access control or a permitting system.

The 1992 MDT Access Management Plan establishes the purpose of access management:

- Maintain the flow of traffic and the functional integrity of the highway.
- Enhance public safety.
- Preserve the public's investment in the highway.
- Reduce future maintenance costs.
- Permit highway expansion on existing locations.

The 1992 access management plan also recognizes the need to be responsive to changing patterns of land use.

Access control limits the rights of owners or occupants of abutting land or other persons to access, light, air or view in connection with the highway. It applies to private approaches, entering directly onto through lanes of the highway, and public street or road intersections with the highway.

Partial access control allows access at selected public roads and private driveways. Full access control allows access only at specified road connections or interchanges.

The plan indicates that generally, access rights will not be purchased within cities or at locations where the existing pattern of ownership and density of use results in a density of approaches having an average spacing of 200 feet or less measured on one side of the road. The access management plan recognizes topographic, land use and traffic conditions in situations such as the proposed action do require purchase of access rights, despite high density of approaches.

Once partial access control is established, new public and private access cannot be constructed without approval of MTC.

Access control on established or reconstructed highways may be acquired by purchase -- the value of property to be acquired for access rights is to be determined by an appraisal process and as a part of an access control plan.

Revocable farm field approaches may be permitted for use only as access to agricultural property. Farm field approaches will be revoked if they are used for any purpose other than agriculture.

Abutting property owners have no legal right of access to highways constructed in new locations. No compensation is paid for imposing access control on highways in new locations. Appropriate compensation will be paid for land and improvements acquired for ROW and for other legally compensable damages.

Modified Access Management Plan

MDT has completed a statewide multimodal transportation plan, *TranPlan 21*. It outlines policy goals and actions to provide uniform standards to govern access currently not available in the 1992 MDT Access Management Plan.

A modified access management plan is being prepared, using recommendations of TranPlan 21, that will provide more clear guidance to maintain the functional integrity and safety of the state highway system. It will have a classification system for management of access to transportation corridors. The classification system will consider existing level and character of land use to be coordinated with the existing highway functional classification system. In conjunction with the access classification system, MDT also will develop a list of technical methods for managing access. Implementation of new technical methods may require additional legislative authority.

As they become available, the provisions of the modified access management plan will be incorporated into the specific access management plan for the proposed action.

7.1.3.3. Safety

~~In areas~~With any of the proposed lane configurations, including ~~where~~ Lane Configuration A (an improved two-lane highway), ~~is constructed, some~~ improvement in safety ~~reduction in accident rates~~may occur due to the eight-foot shoulder to replace the existing four to six-foot shoulders. This will provide additional area for recovery of errant or out-of-control vehicles and for emergency stopping with less effect on through traffic traveling at highway speeds. Additional safety improvements will occur where additional designated left-turn bays and passing lanes are provided -- rear-end accidents and left-turn accidents, in particular, should be reduced.

Lane Configuration B, which includes four traffic lanes with no median to separate opposing traffic flows, is considered a multi-lane undivided arterial highway. The American Association of State Highway and Transportation Officials (AASHTO) reports the accident rate for all reported accidents on multi-lane undivided arterials, as an average for all volumes, is higher than that on two-lane arterials. AASHTO indicates that this occurs because of

heavier volumes, more intersections and more development along multi-lane undivided arterials as compared with two-lane arterials.

When traffic volumes, intersection density and development remain approximately the same~~However~~, experience in ~~the State of~~ Montana and in the area of the proposed action indicates that accident rates and severity ~~rates~~ drop substantially when a two-lane highway is replaced by a four-lane highway.

For example, as indicated in Section 6.1.3.1, when the nearly six-mile-long section of US 93 from Interstate Highway 90 to Evaro was improved from two lanes to four lanes, substantial reductions in accidents, particularly fatal and injury accidents, occurred even though traffic volume increased. This six-mile-long I-90 to Evaro section of US 93 has similar drivers and weather conditions, and it has traffic volume, terrain and junction density similar to US 93 in the area of the proposed action. Indications are that this reduction in the frequency and severity of accidents may also occur between Evaro and Polson if Lane Configuration B, C or D (four-lane highways) is constructed.

AASHTO also indicates that, if traffic volume requires the construction of multi-lane arterials in rural areas where speeds are apt to be high, the consensus is that opposing traffic should be separated and that improvement of an existing two-lane arterial to a multi-lane facility preferably should include a median. According to AASHTO, an arterial highway is considered to be divided if two full lanes are provided in each direction of travel and the median is four feet or more wide and constructed or marked in a manner to preclude its use by moving vehicles except in emergencies or for left turns. The advantages of dividing the multi-lane arterial highway are increased safety, comfort and ease of operation. Of importance is the reduction of head-on collisions -- these accidents are usually more serious than other accidents.[3]

~~To help further improve safety where Lane Configuration B is constructed, at least a four-foot wide painted median should be considered.~~ However, a four to six feet wide painted median is not considered wide enough to be effective for achieving the safety and operational advantages listed above and does not justify the construction costs that would be incurred nor the environmental impacts that would result.

AASHTO indicates that a four-lane rural facility should have adequate median width to provide for protected left turns and that vehicles making a left turn should not be required to stop in the passing lane of a roadway designed for high volume and speed. When adequate median width for left turns is provided, rear-end collisions and inconveniences to through traffic resulting from left-turn movements are greatly reduced. Lane Configuration C will meet these criteria and provide width for protected left turns. An arterial highway with a continuous two-way left-turn center median (Lane Configuration C) is generally considered a safer facility.[4]

FHWA refers to a continuous two-way left-turn center median as a continuous two-way left-turn lane (C2WLTL). The following information on C2WLTLs is from a literature search provided to the Interdisciplinary (ID) Team by FHWA[5]:

> *"Considerable evidence shows that a C2WLTL is a cost-effective method of increasing the operational efficiency and safety of a highway where there is a demand for left-turns off of and onto the major roadway."*
>
> *"Speed limits from 25 to 55 mph will accommodate C2WLTLs."*

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[3]Ibid.

[4]American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 1990.

[5]Federal Highway Administration, Montana Division, Studies on Safety Concerns of 5-lane C2WLTL vs. 4-Lane Divided Highway, letter, with attachments, dated 22 July 1991. Copies of the letter and attachments were distributed to the project Interdisciplinary Team and the Tribal Staff in August 1991.

"Accident reductions averaging about 35% have been attributed to C2WLTLs."

"C2WLTLs also increase capacity and are well accepted by the driving public."

Further safety improvement can be achieved by the use of a wide median such as is provided with Lane Configuration D. With a wide median, head-on accidents can be virtually eliminated. Pedestrians crossing the divided arterial are required to watch traffic in only one direction at a time and are able to pause in the median before crossing the remaining lanes of traffic. Crossing and left-turning vehicles can slow down or stop between the one-way pavements to take advantage of breaks in traffic and cross when it is safe to do so. Headlight glare can be almost eliminated by wide medians.

7.1.3.4. Level-of-Service

~~In rural areas, desirable operation is defined as LOS B or better.[6] As described in Section 6.1.5, LOS B characterizes the region of traffic flow wherein speeds of 55 mph or slightly higher are expected on level terrain. Passing demand needed to maintain desired speeds becomes important and approximately equals the passing capacity at the lower boundary of LOS B. Drivers are delayed up to 45% of the time on the average.~~

~~As indicated in Table 7.1-3, Lane Configuration A will operate similarly to the existing highway, generally at LOS E or F, in the design year. In areas where passing lanes are added in one direction (Post Creek Hill, for example), the highway will operate at LOS B in the direction of the passing lane and LOS F overall. Refer to LOS descriptions in Section 6.1.5. Addition of the passing lane will substantially improve the operation in the direction of the additional lane, but will not improve the operation in the opposing lane and may degrade the operation because no passing will be allowed.~~

~~As explained in Section 6.1.5, traffic operation on a multi-lane highway (four lanes or more), varies substantially from operation on a two-lane highway because of the method of passing. As a result of these differences, the service flow volume and capacity are generally several times higher on a four-lane highway as compared with a two-lane highway. Lane Configurations B, C and D will each include four traffic lanes and will provide LOS B through the design year 2015, except on the uphill lanes of Ravalli Hill.~~

~~LOS E may be considered acceptable on the uphill lanes on Ravalli Hill because it is in mountainous terrain; improvement to LOS B will require expanding the highway to more than four lanes or extensive leveling of the grade, which will be difficult, expensive and cause more severe environmental impacts.~~

LOS of an Improved Two-Lane Highway (Lane Configuration A)

An improved two-lane highway would include improvements as follows: eight-feet wide shoulders, improved alignments and grades; a northbound passing lane on Post Creek Hill; and left-turn bays at important intersections. For the purpose of this LOS analysis, sufficient grade improvements, alignment improvements and additional passing lanes are assumed to provide zero percent no-passing zones[7] on all segments.

Results of the LOS analysis for an improved two-lane highway are summarized in Table 7.1-3 and indicate that, though some improvement in operation will occur, the highway will still generally operate at LOS F in the year 2020 except for short distances where passing lanes are provided.

A major problem with two-lane highway operations involves the amount of time spent in a platoon behind slow moving vehicles unable to pass. Inability to pass leads to driver frustration and unsafe passing maneuvers. The

[6]Ibid. Page 495.

[7]Zero percent no passing occurs when physical conditions of the roadway are such that passing is not prohibited anywhere on the highway.

amount of time spent in platoons rises rapidly as traffic volume increases because the demand for passing maneuvers increases while ability to pass decreases. This increases delay for vehicles traveling the highway.

Table 7.1-3 LOS of CSKT Preferred Alternative, Lane Configuration A, Improved Two-Lane Highway

Segment	Level-of-Service Year 2020
A - Evaro to Arlee	F(B)*
C - Arlee to Ravalli Canyon	F
D - Ravalli Canyon to Ravalli	F
E - Ravalli	E
F - Ravalli Hill	F(B)*
G - St. Ignatius	F
H - St. Ignatius to MTS 212	F(B)*
I - MTS 212 to Ronan	F
K - Ronan to Pablo	F
L - Pablo	F
M - Pablo to Caffrey Road	F
N - Caffrey Road to MT 35	F(B)*

*Level-of-service overall(in direction of passing lane)
This table has been revised in the final EIS using traffic volumes for the year 2020.

LOS of an Improved Two-Lane Highway with Transportation Demand Management Measures

Table 7.1-4 shows LOS of an improved two-lane highway, as described in the previous section, in the year 2020 if very aggressive transportation demand management (TDM) measures (Appendix B) are implemented to reduce traffic volumes on US 93 including:

- A very strong car-pooling program sufficient to remove five percent of the traffic from US 93.
- A program to shift traffic away from peak traffic hours such as offset work shifts sufficient to reduce traffic volumes an additional 10%.
- A very strong transit program sufficient to remove 100 vehicles per hour from US 93.
- A program to shift at least 50% of existing truck traffic to rail, air or other modes.

- Some method, not yet identified, to discourage use of the highway by tourists and cap tourist traffic at current levels.

Table 7.1-4 LOS of CSKT Preferred Alternative, Lane Configuration A, Improved Two-Lane Highway, with TDM

Segment	Level-of-Service Year 2020
A - Evaro to Arlee	E(A)*
C - Arlee to Ravalli Canyon	E
D - Ravalli Canyon to Ravalli	E
E - Ravalli	D
F - Ravalli Hill	E(A)*
G - St. Ignatius	E
H - St. Ignatius to MTS 212	E(A)*
I - MTS 212 to Ronan	E
K - Ronan to Pablo	F
L - Pablo	E
M - Pablo to Caffrey Road	F
N - Caffrey Road to MT 35	F(A)*

*Level-of-service overall(in direction of passing lane)
This table has been revised in the final EIS using traffic volumes for the year 2020.

As shown on Table 7.1-4, these measures would improve the LOS on the improved two-lane highway but operation would still not approach desired LOS B or even C.

LOS of a Four-Lane Highway (Lane Configuration B, C or D)

On a multi-lane facility (four-lanes or more), vehicles traveling the highway have more than one lane in each direction so that slower moving vehicles can be overtaken and passed without entering opposing traffic lanes. Traffic in opposing directions operates independently on multi-lane highways. As a result of these differences, the service flow volume and capacity are generally several-times higher on a four-lane highway as compared with a two-lane highway.

Results of the LOS analysis for four-lane highways are summarized in Table 7.1-5 and indicate that substantial improvements will occur -- the highway is projected to operate at LOS B or better in all segments through the design year, 2020.

Also, as shown on Table 7.1-5 and assuming that traffic volumes will continue to grow at currently projected rates, the highway will generally operate at LOS B and C through the year 2030.

Table 7.1-5 LOS of MDT Preferred Alternative, a Four-Lane Highway

Segment	Level-of-Service	
	Year 2020	Year 2030
A - Evaro to Arlee	B	B
C - Arlee to Ravalli Canyon	B	B
D - Ravalli Canyon to Ravalli	B	B
E - Ravalli	A	B
F - Ravalli Hill	B	B
G - St. Ignatius	B	B
H - St. Ignatius to MTS 212	B	B
I - MTS 212 to Ronan	B	B
K - Ronan to Pablo	B	C
L - Pablo	B	C
M - Pablo to Caffrey Road	B	C
N - Caffrey Road to MT 35	B	C

This table has been revised in the final EIS using traffic volumes for the year 2020.

Conclusions

Desirable operation on a rural highway such as US 93 between Evaro and Polson is LOS B.

Traffic operation on the existing highway is currently at LOS D and E. Traffic operation in the design year, 2020, is projected to be at LOS F with No Action.

Construction of an improved two-lane highway will produce a slight improvement. However traffic will remain at LOS D and E with current traffic volumes and is projected to be at LOS F in the year 2020.

Construction of passing lanes will improve traffic operation only for a short distance within the passing lane. Overall LOS will not improve substantially as a result of the construction of passing lanes.

Implementation of aggressive TDM measures, in addition to the construction of an improved two-lane highway, will improve traffic operation in the design year, 2020, to generally LOS E. Desirable LOS B operation will not be achieved with this strategy.

A four-lane highway will accommodate existing (year 1994) and future (year 2020) traffic volumes at LOS A and B.

7.1.4. Arlee, Ronan and Polson Alignments

Alignment 1 in Arlee, Ronan and Polson will include leaving the highway in its existing alignment through these communities. With all lane configurations, the following conditions will remain:

- The speed limits are expected to remain at 35 mph in Arlee and 25 mph in Ronan and Polson.
- With the roadway passing through the communities, there will be little or no opportunity to improve grades and alignments of approaches and intersections, nor to reduce their numbers.
- Conflicts with pedestrians, particularly school children, will remain with related safety and operational problems. It is expected that additional pedestrian crossings and traffic signals will be required in the future.
- Conflicting traffic movements (left turns, right turns and crossing traffic) which are common in these communities will continue to affect and be affected by through traffic on US 93.
- There will be little or no opportunity to eliminate, consolidate or otherwise reduce the number of approaches to the highway in these communities on the existing alignment.
- An environment will remain where through traffic on US 93 is required to slow to pass through the community and where interruptions in traffic flow are frequent. Operation and efficiency levels will be less than on rural sections (between the communities) of the highway.

A continuous two-way left-turn center median will be desirable if Lane Configuration A is constructed along the existing alignment through Arlee or Ronan (this lane already exists through Ronan and Polson). This will reduce some of the conflicts related to vehicles turning left from US 93; but with or without this additional lane, Lane Configuration A will not substantially improve LOS on US 93 through these communities -- LOS is expected to remain at D in the near future and will deteriorate to LOS E by the design year 20202~~2015~~.

Lane Configuration B, a four-lane highway, on the existing alignment through Arlee and Ronan will provide a substantial improvement in LOS on US 93 and will operate at LOS B through the design year 20202~~2015~~. Traffic through these communities will then have an additional lane in each direction in which to pass turning vehicles.

Because of the substantial number of left turns from US 93 in Arlee, Ronan and Polson, a four-lane highway with a continuous two-way left-turn center median (Lane Configuration C) will be highly desirable. This will eliminate most conflicts with turning vehicles and provide LOS B through the year 20202~~2015~~.

Because of the width required and the limited area in which to construct a new roadway without numerous relocations of businesses and homes, Lane Configuration D is probably not practical and feasible through the communities of Arlee, Ronan and Polson along the existing alignment.

Any of the lane configurations on Alignments 2, 3 or 4 through the Arlee area, Alignments 3 or 4 through the Ronan area or Alignments 2 or 3 through Polson, will create substantial beneficial changes in the flow of traffic including:

- Normal highway speeds can be maintained through the area -- these alignments will be designed to meet 60 mph design standards, and it is anticipated the posted speed limit will be 55 mph.[8]

- Deficiencies in design standards on the existing highway will be corrected and resulting benefits will occur, as explained in Section 7.1.3.

- Fewer pedestrian crossings will be required. Businesses and schools (except Alignment 3 in Arlee which passes just east of the school) will no longer be located adjacent to or near the roadway, and the roadway will not pass through business and residential areas. Conflicts with pedestrians and related safety, operational and barrier problems will be substantially reduced.

- The number of intersections and approaches to the highway will be substantially reduced. There will be many opportunities to consolidate or eliminate approaches. Partial access control will be purchased from adjacent land owners for the highway, and future approaches will not be allowed except with the approval of MTC~~the Montana Highway Commission~~. This should result in a reduced accident rate, increased capacity, improved operation, efficiency and driving comfort on the highway.

- Interruptions to the flow of traffic will be eliminated or reduced with related improvement in capacity and safety.

- The roadway that will remain in Arlee, Ronan and Polson will have substantially less traffic, particularly truck traffic, and resulting benefits will include: Less congestion, less conflicts with pedestrians and reduced barrier effects.

LOS, if Lane Configuration A (two-lane) is constructed around Arlee or Ronan (Alignments 2, 3 and 4 in Arlee and 3 and 4 in Ronan), will improve slightly over existing conditions because of improved alignment; substantially reduced influence from and conflict with crossing pedestrians and vehicles; and increased travel speeds. It is projected, however, that LOS will remain near D for the near future and deteriorate to F by the year 20202~~015~~ for Arlee and Ronan. For Polson, LOS will remain near D through the year 20202~~015~~.

If Lane Configuration B, C or D is constructed on alignments around Arlee, Ronan and Polson (Alignments 2, 3 and 4 in Arlee, 3 and 4 in Ronan, and 2 and 3 in Polson), LOS is expected to improve to desired levels, and it will be similar to LOS projected for rural portions of the highway as described in Section 7.1.3.

Alignment 2 in Ronan will include leaving the highway in its existing location and using it only for northbound traffic. Southbound traffic will be carried on a new roadway to be constructed on First Avenue Southwest, one block west of the existing highway. The one-way couplet, with two lanes in each direction, will have the following effects on traffic operations in Ronan:

- Since the highway (both directions) will remain in developed residential and commercial areas of the community, it is expected the speed limit will remain at 25 mph.

[8]After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

- With the roadway still passing through the communities, there will be little or no opportunity to improve grades and alignments of approaches and intersections, nor to reduce their numbers. Approaches and intersections on the southbound portion of the couplet are expected to be approximately the same as those that currently exist on the existing highway.

- Conflicts with pedestrians, particularly school children, will remain with related safety and operational problems. It is expected that additional pedestrian crossings and traffic signals will be required in the future, as they will be with Alignment 1. Some improvement will occur, however, as a result of spreading the highway traffic over two roadways instead of one. Pedestrians (and crossing or entering vehicles) can cross one portion of the couplet at a time, with approximately one-half the traffic that will be on a single roadway and only with traffic in a single direction.

- Conflicting traffic movements (left turns, right turns and crossing traffic) which are common in these communities will continue to affect and be affected by through traffic on US 93.

- An environment will still remain where through traffic on US 93 is required to slow to pass through the community and where interruptions in traffic flow are frequent. Operation and efficiency levels will be less than on rural sections (between the communities) of the highway.

- With the one-way couplet, it is estimated that LOS will be substantially improved and will operate at LOS B or better through the year 2020~~2015~~.

Additional lanes for left or right turns may be desirable with this alignment in some areas to reduce some of the conflicts related to vehicles slowing or stopping to turn from US 93.

7.2. LAND USE

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.2.1. Impacts Common to All Alternatives

7.2.1.1. Pattern of Land Use

The pattern of land use and development that converts agricultural and other types of open land to residential, commercial, industrial and other types of built development will continue with all alignment alternatives and lane configuration alternatives, including No Action.

Highway improvement is one of many factors[9] that will contribute to the rate and pattern of land use and development. Land use in areas with frontage along the highway's ROW will be influenced by the rate and patterns of residential, commercial and industrial development. Design options for highway improvement, such as left-turn bays, continuous two-way left-turn center median, limited access control, billboard and signing policies will influence, but not govern, pattern of land use and development along the highway. (Sections 6.4, 6.5, 7.4, and 7.5)

With or without highway improvement, continued population growth and economic development will increase pressure for residential, commercial and industrial development in areas outside the developed areas of communities. Without land use planning and regulation, more strip development will occur along the highway.

7.2.1.2. Pattern of Access to Residential Areas

There will be limited opportunity with any of the alignment or lane configuration alternatives to reduce local traffic on US 93 from residential areas by shifting traffic to local roads. There is not an extensive, developed system of paved arterial and collector roads that run parallel to US 93 and connect roads that intersect with US 93 in the area of the proposed action.

All alignment and lane configuration alternatives will perpetuate access for right turns and left turns to existing local roads (minor arterials, major collectors and minor collectors) with right-turn deceleration lanes and left-turn bays at major intersections with US 93. Roads leading from the existing major intersections will continue to be used as the routes to provide access to areas with all substantial existing and expected future residential areas.

With all lane configurations, there will not be substantial change in pattern of access to residential areas located away from US 93 because the most important arterials and collectors that intersect with US 93 will continue to have direct access from the highway for right and left turns. Lane Configurations A, B and C will provide direct access between major intersections for right turns and left turns at locations that are mostly private driveways to single residences or businesses, but which do have a small number of short roads that lead to areas with limited current development and limited potential for future development. Lane Configuration D either will provide frontage roads with convenient access to US 93 in both directions from most smaller intersections, or vehicles will use major intersections to reverse directions in areas that provide no direct left-turn access.

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[9]Factors include: Local land use planning and regulation; access control and other transportation planning activities; the Confederated Salish and Kootenai Tribes (CSKT), Bureau of Indian Affairs (BIA), state, county and municipal road and street maintenance and construction policies affecting local arterial and collector roads and streets; state subdivision regulation; availability of land; financial market factors; public and private utilities; and land owner, developer and general public attitudes and activities that influence growth and development.

The cumulative effects of the proposed action and other highway projects[10] will result in a regional highway system for which there is planning for land use and access control similar to the proposed action. The Confederated Salish and Kootenai Tribes and local governments (Lake and Missoula counties and the incorporated municipalities Polson, Ronan and St. Ignatius) will be confronted with issues having complex jurisdictional relationships, and these governments will have the legal authority to develop land use policy.

7.2.1.3. Partial Access Control

All lane configurations, including No Action, will continue to allow right turns from traffic lanes at approaches for access to residential, commercial and industrial areas. No Action and Lane Configurations A, B and C will allow traffic to make uncontrolled left turns across opposing traffic lanes to areas with residential, commercial and industrial development.

Lane Configuration D, with an unpaved divided median, will require left turns from traffic lanes to occur at major intersections with left-turn bays for access to residential, commercial and industrial areas. Lane Configuration D will result in more "U-turn" movement at major intersections, and traffic will "double back" to make right turns at approaches.

Lane Configurations A, B, C and D will provide left-turn bays at major intersections, and Lane Configuration C, with a continuous two-way left-turn center median, will provide the most safety for left turns away from major intersections. Lane Configurations B, C and D will reduce congestion and provide more safety for turning than Lane Configuration A.

For all lane configurations, including No Action, without land use planning and regulation, it is likely commercial strip development will continue to spread in a dispersed, rather than compact, pattern along the highway away from established, developed areas of communities.

Because Lane Configuration C will allow safe left turns in most areas along the highway, it is expected to be the lane configuration most conducive to strip development, in the absence of land use planning and regulation and access control. Lane Configuration D will prohibit left turns between major intersections, but it also will result in more "U-turn" movement at the major intersections.

With all alignment alternatives and Lane Configurations A, B and C, building left-turn bays to improve safety at intersections of US 93 with state highways and county roads also will improve access for highway traffic to areas that abut highway ROW, are outside existing developed areas and have potential for future development. If there is access control by MDT, but no accompanying land use planning and regulation, new development will be expected to concentrate in the vicinity of the intersections with left-turn bays. This will result in a limited form of strip development, with new development outside existing developed areas, but less likely to be scattered between major intersections.

None of the lane configurations will cause the underlying conditions that result in residential or business strip development. With partial access control, none of the lane configurations will provide regulation of land use and development on land abutting highway ROW. In the absence of land use planning and regulation, strip development will be expected to occur, and that will be a reason to consider Lane Configuration C, which will provide the most safety in managing the conflict between turning traffic and through traffic. While none of the lane configurations will regulate land use, access control, if applied comprehensively, will have some effect on access to and development of new residences and businesses.

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[10]Such projects include the four-lane segment of US 93 abutting the proposed action between I-90 and Evaro built in 1985-86, improvement during the late-1980s of US 93 north of Polson, and the proposed improvement of US 93 from Somers to Whitefish, which is approximately 50 miles north of the proposed action.

Strip development will create traffic conditions that are best managed with Lane Configuration C. Then the rate of strip development will be expected to increase as more approaches are allowed to have access to the highway. This is because Lane Configuration C will provide the best traffic conditions with which to consider existing access, safety, traffic counts and local land use planning and regulation in developing new approaches.

Mitigation

Land use planning and regulation, coordinated with ~~and~~ access control are the major mitigation measures to control land use growth and development and traffic ~~into~~ developed areas.

Land use planning and regulation is the legal method to control signage and residential, commercial and industrial development on land abutting highway ROW.[11] Partial access control is the legal method to control access to land abutting highway ROW. Partial access control~~It~~ will improve the safety and efficiency of access to the highway, but it will not preclude development of land where approaches currently exist, and it will not totally preclude development of future approaches for new access to the highway. (Section 5.3.4)

Partial access control will be a method to limit conflict between through traffic and traffic turning either at public streets and road intersections or private approaches entering directly onto the through traffic lanes of the highway.

Under partial access control, with Lane Configurations A, B, C and D, MDT will ~~attempt to~~ acquire access rights for all lands abutting highway ROW. MDT will implement partial access control for the full length of the highway (except in communities) to minimize conflict between through traffic and turning traffic by consolidating, improving or closing approaches wherever it is possible do so without disrupting legal access to lands abutting highway ROW.

An access control plan will develop recommendations on the number and spacing of public and private approaches that will be able to enter directly upon the highway. Details as to the number and location of specific at-grade approaches to be allowed will be determined considering existing access, safety, traffic counts and local land use planning and regulation. ~~New approaches to the highway may be considered after access rights have been acquired by MDT. Application for new approaches will be reviewed by MDT for safety, effect on highway capacity, legality and physical feasibility of construction. MDT will submit the application to MHC for consideration of approval.~~ Partial access control will not be implemented with No Action.[12]

Partial access control will not substitute for land use planning and regulation to control patterns of growth and development that will result in residential, commercial and industrial strip development. Partial access control applies to approaches to the highway from land abutting highway ROW. ~~Partial access control does not apply to either the type or amount of development that may occur on land served by approaches.~~ Partial access control is meant to be a method to manage traffic and access to the highway in cooperation with local land use planning and regulation. Partial access control will not prohibit new residential, commercial or industrial development along the highway, and none of the lane configurations will restrict the type of development or the amount of land to be developed.

Land use planning and regulation will allow partial access control to be more effective in limiting new approaches with all lane configurations and all alignments. The combination of land use planning and regulation and partial access control will be important for prohibiting new development along any of the alignments at Arlee, Ronan and Polson. New commercial and industrial development along any of the new alignments will compete with existing businesses in the communities for sales to highway traffic.

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[11]The Montana Code Annotated, 76-2, Planning and Zoning, identifies local governments, which along with CSKT - a sovereign government - have legal jurisdiction for controlling land use and development in Montana.

[12]Montana Department of Transportation. Access Management Plan. April 1992.

CSKT and local governments have authority to control effects of growth and development on land use. Comprehensive land use planning and regulation under the authority of CSKT, Lake County, Missoula County and the incorporated communities Polson, Ronan and St. Ignatius should establish local policies that provide consistency in review and reduce land-use conflicts associated with residential, commercial and industrial development. CSKT and local governments should develop cooperative planning policies and procedures to address the current and expected future patterns of growth and development.

MDT and the Montana Transportation Commission (MTC)~~MHC~~, through their legal jurisdiction to develop and adopt partial, or limited, access control, should coordinate with tribal, county and city planning efforts to affect the transportation system by controlling access to land abutting highway ROW. However, partial or full access control can not in itself prohibit development. FHWA and MDT support and will continue to coordinate transportation planning for US 93 with land use planning and regulation activities, which are initiated by CSKT and local governments, and which are related to US 93.

Land use planning and regulation will be considered and incorporated in MDT transportation planning and highway design and development activities. The coordination of land use planning and regulation with transportation planning should include access management, highway billboard and signing policies, and other appropriate transportation planning activities of MDT and FHWA. The coordination should identify locations in communities and outside communities along the highway that will provide compatible patterns of residential, commercial, industrial and public land use, while allowing development for local and through traffic to provide access to needed business services and public facilities/services. The efforts by CSKT, in cooperation with local governments, to develop a land use growth and projection study~~a land use and growth projection study~~ could be the basis for continued cooperation on land use planning and access management~~control~~. CSKT has commented that ongoing litigation in lawsuits that have the state and Lake County in opposition to CSKT may discourage cooperation on issues such as land use planning and regulation.

MDT and MTC~~MHC~~ will~~should~~ develop and adopt an access control~~management~~ plan to provide a consistent policy of partial access control for the highway. The access management plan should provide specific guidelines for numbers of access locations, distances between access locations, distances for setbacks of development abutting highway ROW and other appropriate factors.

Jurisdiction to develop land use planning and regulation is complex in the area of the proposed action. Regardless of the complicated relations, with potential conflicting purposes and actions, it is important to recognize the legal jurisdiction of MDT and FHWA does not extend to controlling land use and development on land abutting highway ROW.

7.2.2. Existing Alignment (Except Arlee, Ronan and Polson)

7.2.2.1. Conversion of Land to Highway Right-of-Way

Tables 7.2-1 through 7.2-4~~5~~ identify requirements for new ROW with lane configurations and alignments. All lane configurations will result in a wider ROW than currently exists for the highway.

7.2.2.2. Influence of Traffic on Land Use

As the Missoula and Kalispell areas continue to grow as major centers of employment, the rate and pattern of land use and development likely will be accelerated with Lane Configurations B, C or D. Development will continue to convert open agricultural and forest lands to residential, commercial, industrial and recreational uses.

Table 7.2-1 Right-of-Way Requirements for the CSKT Preferred Alternative, Lane Configuration A, Improved Two-Lane Highway, By Land Use and Status

Segment	Right-of-Way Summary (Acres)			New Right-Of-Way Required (Acres) – Land Use							New Right-Of-Way Required (Acres) – Land Status					
	Existing	Total Required	New Required	Agriculture	Commercial	Residential	Forest	Water/ Wetland*	Railroad	Public	Fee	Tribal	Allot	Federal	State	Railroad/ Local
A: Evaro to Arlee	188.4	195.8	7.4	7.3	.1	—	—	—	—	—	5.9	—	1.3	—	.2	—
B: Arlee	13.6	19.2	5.6	5.1	.1	.4	—	—	—	—	3.8	—	1.8	—	—	—
C: Arlee to Ravalli Canyon	100.6	105.0	4.4	3.8	.1	.5	—	—	—	—	3.1	—	1.3	—	—	—
D: Ravalli Canyon to Ravalli	47.1	52.3	5.3	5.3	—	—	—	—	—	—	5.3	—	—	—	—	—
E: Ravalli	15.7	16.5	.8	.6	.2	—	—	—	—	—	.8	—	—	—	—	—
F: Ravalli Hill	90.6	90.6	0.1	—	—	—	—	—	—	0.1	—	0.1	—	—	—	—
G: St. Ignatius	46.7	48.0	1.3	.9	.2	—	.2	—	—	—	.3	.4	.6	—	—	—
H: St. Ignatius to MTS 212	133.9	188.8	2.97	25.9	0.3	—	—	3.5	—	—	24.8	—	1.8	—	3.1	—
I: MTS 212 to Ronan	79.4	104.5	25.1	11.8	.2	—	—	13.1	—	—	12.8	5.0	—	5.4	1.9	—
J: Ronan	20.8	20.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K: Ronan to Pablo	90.1	90.5	.3	.3	—	—	—	—	—	—	.3	—	—	—	—	—
L: Pablo	94.1	96.9	2.8	1.7	.4	.6	.1	—	—	—	1.8	1.0	—	—	—	—
M: Pablo to Caffrey Road	34.9	39.9	5.0	4.9	.1	—	—	—	—	—	5.0	—	—	—	—	—
N-O-P: Caffrey Road - Polson	102.0	102.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL:	1,057.9	1,170.9	87.8	67.6	1.7	1.5	.3	16.6	—	0.1	63.9	6.5	6.8	5.4	5.2	—
Arlee Alignment 1[1]	100.8	117.1	16.3	15.1	.3	.9	—	—	—	—	11.7	—	4.4	—	.2	10.3[3]
Arlee Alignment 2[1]	73.0	123.8	50.8	50.0	.1	.7	—	—	—	—	42.8	—	7.8	—	.2	—
Arlee Alignment 3[1]	79.1	122.8	43.8	34.8	.1	2.3	—	—	—	6.6[2]	21.3	6.1	9.8	—	6.6[2]	—
Arlee Alignment 4[1]	3.6	142.8	139.2	139.2	—	—	—	—	—	—	139.2	—	—	—	—	—
Ronan Alignment 1[1]	68.9	73.7	4.7	4.7	—	—	—	—	—	—	4.7	—	—	—	—	—
Ronan Alignment 2[1]	129.0	139.5	17.7	13.8	1.7	1.8	—	—	—	0.4**	15.3	2.0	—	—	—	0.4**
Ronan Alignment 3[1]	19.9	74.2	54.3	37.8	—	16.5	—	—	—	—	54.3	—	—	—	—	—
Ronan Alignment 4[1]	9.9	77.4	67.5	59.3	1.7	1.8	—	—	4.6[3]	0.1**	67.4	—	—	—	—	0.1**/4.6[4]
Polson Alignment 1[1]	102.0	102.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Polson Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polson Alignment 3[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Morrison-Maierle, 1993. [1] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. [2] Jocko River Trout Hatchery. [3] Railroad Acquisition. [4] Included in Fee. NA - Not Applicable. * Water/wetland indicates predominant land use adjacent to highway right-of-way. Refer to Section 7.10 for detailed analysis of impact to wetlands. ** Park/Ballfield/School Athletic Field.

Table 7.2-2 Right-of-Way Requirements for Lane Configuration B (Four-Lane) By Land Use and Status

Segment	Right-Of-Way (Acres)			New Right-Of-Way (Acres) – Land Use							New Right-Of-Way (Acres) – Land Status					
	Existing	Total Required	New Required	Agriculture	Commercial	Residential	Forest	Water/ Wetland*	Railroad	Public	Fee	Tribal	Allot	Federal	State	Railroad/ Local
A: Evaro to Arlee	188.4	232.2	43.8	21.5	.6	1.7	20.0	—	—	—	19.0	17.1	7.4	—	.3	—
B: Arlee	13.6	21.7	8.1	7.3	.1	.7	—	—	—	—	5.3	—	2.8	—	—	—
C: Arlee to Ravalli Canyon	100.6	108.1	7.5	6.4	.3	.8	—	—	—	—	4.2	—	3.3	—	—	—
D: Ravalli Canyon to Ravalli	47.1	55.5	8.4	8.4	—	—	—	—	—	—	8.4	—	—	—	—	—
E: Ravalli	15.7	16.9	1.2	.9	.1	.2	—	—	—	—	1.2	—	—	—	—	—
F: Ravalli Hill	90.6	104.1	13.5	6.1	—	—	—	2.4	—	5.0	8.5	3.7	—	1.3	—	—
G: St. Ignatius	46.7	53.6	6.7	5.1	.3	—	1.3	—	—	—	3.3	2.2	1.2	—	—	—
H: St. Ignatius to 212	133.9	209.7	48.6	39.8	0.7	—	—	8.1	—	—	38.7	1.2	2.6	—	6.1	—
I: MTS 212 to Ronan	79.4	114.3	34.9	16.5	.4	—	—	18.0	—	—	18.1	6.7	—	7.3	2.8	—
J: Ronan	20.8	20.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
K: Ronan to Pablo	90.1	91.3	1.2	1.2	—	—		—	—	—	1.1	.1	—	—	—	—
L: Pablo	94.1	99.9	5.8	3.3	.6	1.7	.2	—	—	—	4.1	1.7	—	—	—	—
M: Pablo to Caffrey Road	34.9	42.8	7.9	7.7	.2	—	—	—	—	—	7.9	—	—	—	—	—
N-O-P: Caffrey Road - Polson	102.0	118.8	16.8	14.8	1.0	—	—	—	—	1.0	12.3	—	4.5	—	—	—
TOTAL	1,057.9	1,289.5	204.4	139.0	4.3	5.1	21.5	28.5	—	6.0	132.1	32.7	21.8	8.6	9.2	—
Arlee Alignment 1[1]	100.8	126.3	25.5	23.4	.7	1.4	—	—	—	—	18.2	.3	6.7	—	.3	—
Arlee Alignment 2[1]	73.0	133.8	60.8	59.5	.3	1.0	—	—	—	—	50.5	.3	9.7	—	.3	11.6[4]
Arlee Alignment 3[1]	79.1	132.6	53.6	43.1	.3	2.8	—	—	—	7.4[2]	27.4	7.1	11.4	—	7.7	—
Arlee Alignment 4[1]	3.6	160.4	156.9	156.9	—	—	—	—	—	—	138.4	6.3	12.2	—	—	—
Ronan Alignment 1[1]	68.9	76.1	7.1	7.1	—	—	—	—	—	—	7.1	—	—	—	—	—
Ronan Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 3[1]	19.9	82.8	62.9	44.3	—	18.6	—	—	—	—	62.9	—	—	—	—	—
Ronan Alignment 4[1]	9.9	86.0	76.1	66.7	1.9	2.1	—	—	5.1[3]	0.3**	75.8	—	—	—	—	0.3**/5.1[4]
Polson Alignment 1[1]	102.0	118.8	16.8	14.8	1.0	—	—	—	—	1.0	12.3	—	4.5	—	—	—
Polson Alignment 2[1]	28.0	135.5	107.5	72.5	—	19.0	—	—	—	16.0	79.0	24.5	4.0	—	—	—
Polson Alignment 3[1]	9.9	149.5	139.6	121.2	—	18.4	—	—	—	—	83.5	48.6	7.5	—	—	—

Morrison-Maierle, 1993. [1] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. [2] Jocko River Trout Hatchery. [3] Railroad Acquisition. [4] Included in Fee. NA - Not Applicable. * Water/wetland indicates predominant land use adjacent to highway right-of-way. Refer to Section 7.10 for detailed analysis of impact to wetlands. ** Park/Ballfield/School Athletic Field.

Table 7.2-3 Right-of-Way Requirements for Lane Configuration C (Four-Lane with Continuous Two-way Left-turn Center Median) By Land Use and Status

Segment	Right-Of-Way (Acres)			New Right-Of-Way Required (Acres) – Land Use							New Right-Of-Way Required (Acres) – Land Status					
	Existing	Total Required	New Required	Agriculture	Commercial	Residential	Forest	Water/ Wetland*	Railroad	Public	Fee	Tribal	Allot	Federal	State	Railroad/ Local
A: Evaro to Arlee	188.4	250.3	61.9	30.4	.8	2.4	28.3	—	—	—	27.2	23.8	10.5	—	.4	—
B: Arlee	13.6	24.0	10.4	9.2	.2	1.0	—	—	—	0.01	6.7	—	3.7	—	—	—
C: Arlee to Ravalli Canyon	100.6	113.3	12.7	11.4	.4	.9	—	—	—	—	8.0	—	4.7	—	—	—
D: Ravalli Canyon to Ravalli	47.1	57.4	10.3	10.3	—	—	—	—	—	—	10.3	—	—	—	—	—
E: Ravalli	15.7	17.2	1.5	1.1	.1	.3	—	—	—	—	1.5	—	—	—	—	—
F: Ravalli Hill	90.6	110.4	19.8	18.2	—	—	—	1.6	—	—	12.3	5.5	—	2.0	—	—
G: St. Ignatius	46.7	57.9	11.0	8.7	.5	—	1.8	—	—	—	5.7	3.4	1.9	—	—	—
H: St. Ignatius to MTS 212	133.9	228.9	68.6	54.9	1.0	—	—	12.7	—	—	53.6	2.3	3.5	—	9.2	—
I: MTS 212 to Ronan	79.4	124.7	45.3	21.2	.7	—	—	23.4	—	—	23.6	8.3	—	9.2	4.2	—
J: Ronan	20.8	23.0	2.2	1.3	.7	.2	—	—	—	—	1.7	—	.5	—	—	—
K: Ronan to Pablo	90.1	94.4	4.3	3.7	—	—	—	.6	—	—	3.8	.2	.3	—	—	—
L: Pablo	94.1	104.4	10.3	5.7	.8	3.3	.5	—	—	—	7.5	2.8	—	—	—	—
M: Pablo to Caffrey Road	34.9	46.5	11.6	11.2	.4	—	—	—	—	—	11.6	—	—	—	—	—
N-O-P: Caffrey Road - Polson	102.0	125.3	23.3	20.5	1.4	—	—	—	—	1.4	18.2	—	5.1	—	—	—
TOTAL	1,057.9	1,377.5	293.2	207.8	7.0	8.1	30.6	38.3	—	1.4	191.7	46.3	30.2	11.2	13.8	—
Arlee Alignment 1[1]	100.8	136.7	35.9	32.9	1.1	1.9	—	—	—	—	25.8	.3	9.4	—	.4	—
Arlee Alignment 2[1]	73.0	145.6	72.6	70.7	.5	1.4	—	—	—	—	60.2	.3	11.7	—	.4	12.9[4]
Arlee Alignment 3[1]	79.1	144.3	65.3	53.3	.5	3.2	—	—	—	8.3[2]	35.4	8.0	13.3	—	8.6	—
Arlee Alignment 4[1]	3.6	178.1	174.5	174.5	—	—	—	—	—	—	153.9	7.0	13.6	—	—	—
Ronan Alignment 1[1]	68.9	73.7	12.5	11.3	.7	.2	—	.3	—	—	12.0	—	.5	—	—	—
Ronan Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 3[1]	19.9	92.1	72.2	51.5	—	20.7	—	—	—	—	72.2	—	—	—	—	—
Ronan Alignment 4[1]	9.9	94.7	84.8	74.3	2.1	2.3	—	—	5.7[3]	0.4**	84.4	—	—	—	—	0.4**/5.7[4]
Polson Alignment 1[1]	102.0	125.3	23.3	20.5	1.4	—	—	—	—	1.4	18.2	—	5.1	—	—	—
Polson Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polson Alignment 3[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Morrison-Maierle. 1993. [1] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. [2] Jocko River Trout Hatchery. [3] Railroad Acquisition. [4] Included in Fee. NA - Not Applicable. NA - Not Applicable. * Water/wetland indicates predominant land use adjacent to highway right-of-way. Refer to Section 7.10 for detailed analysis of impact to wetlands. ** Park/Ballfield/School Athletic Field. 0 Arlee community park impact less than 0.1 acre.

Table 7.2-4 Right-of-Way Requirements for Lane Configuration D (Four-Lane with Divided Center Median) By Land Use and Status

Segment	Right-Of-Way (Acres)			New Right-Of-Way Required (Acres) – Land Use							New Right-Of-Way Required (Acres) – Land Status					
	Existing	Total Required	New Required	Agriculture	Commercial	Residential	Forest	Water/ Wetland*	Railroad	Public	Fee	Tribal	Allot	Federal	State	Railroad/ Local
A: Evaro to Arlee	188.4	286.4	98.0	48.8	2.0	3.8	43.4	—	—	—	45.8	34.9	16.2	—	1.1	—
B: Arlee	13.6	24.0	10.4	9.2	.2	1.0	—	—	—	—	6.7	—	3.7	—	—	—
C: Arlee to Ravalli Canyon	100.6	125.9	25.3	23.1	.9	1.3	—	—	—	—	19.5	—	5.8	—	—	—
D: Ravalli Canyon to Ravalli	47.1	61.2	14.1	14.1	—	—	—	—	—	—	13.6	—	.5	—	—	—
E: Ravalli	15.7	17.5	1.8	1.4	—	.4	—	—	—	—	1.8	—	—	—	—	—
F: Ravalli Hill	90.6	118.7	28.1	24.0	—	—	4.1	—	—	—	16.8	8.3	—	3.0	—	—
G: St. Ignatius	46.7	64.2	17.1	14.0	.7	—	2.4	—	—	—	9.2	4.9	3.0	—	—	—
H: St. Ignatius to MTS 212	133.9	260.9	188.1	69.1	1.3	—	—	17.7	—	—	68.3	3.5	3.9	—	12.4	—
I: MTS 212 to Ronan	79.4	139.8	60.4	28.2	1.1	—	—	31.1	—	—	31.7	10.8	—	12.1	5.8	—
J: Ronan	20.8	23.0	2.2	1.3	.7	.2	—	—	—	—	1.7	—	.5	—	—	—
K: Ronan to Pablo	90.1	101.3	11.2	9.8	—	—	—	1.4	—	—	10.0	.4	.8	—	—	—
L: Pablo	94.1	115.4	21.3	10.5	2.1	7.7	1.0	—	—	—	15.5	5.5	.3	—	—	—
M: Pablo to Caffrey Road	34.9	53.1	18.2	17.1	.9	.2	—	—	—	—	18.2	—	—	—	—	—
N-O-P: Caffrey Road - Polson	102.0	142.1	40.1	35.3	2.4	—	—	—	—	2.4	31.3	—	8.8	—	—	—
TOTAL	1,057.9	1,533.1	436.3	305.9	12.3	14.6	50.9	50.2	—	2.4	290.1	68.3	43.5	15.1	19.3	—
Arlee Alignment 1[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arlee Alignment 2[1]	73.0	166.4	93.4	90.5	.9	2.0	—	—	—	—	76.7	.6	15.0	—	1.1	14.1[4]
Arlee Alignment 3[1]	79.1	164.8	85.7	72.0	.9	3.8	—	—	—	9.0[2]	50.0	9.0	16.5	—	10.2	—
Arlee Alignment 4[1]	3.6	195.7	192.1	192.1	—	—	—	—	—	—	169.4	7.8	14.9	—	—	—
Ronan Alignment 1[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 3[1]	19.9	103.6	83.7	61.0	—	22.7	—	—	—	—	83.7	—	—	—	—	—
Ronan Alignment 4[1]	9.9	103.6	93.7	82.1	2.3	2.5	—	—	6.3[3]	0.5**	93.2	—	—	—	—	0.5/**6.3[4]
Polson Alignment 1[1]	102.0	142.1	40.1	35.3	2.4	—	—	—	—	2.4	31.3	—	8.8	—	—	—
Polson Alignment 2[1]	28.0	168.9	140.9	96.4	1.5	23.0	—	—	—	20.0	103.6	32.2	5.1	—	—	—
Polson Alignment 3[1]	9.9	188.8	178.9	157.4	—	21.5	—	—	—	—	107.4	62.2	9.3	—	—	—

Morrison-Maierle, 1993. [1] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. [2] Jocko River Trout Hatchery. [3] Railroad Acquisition. [4] Included in Fee. NA - Not Applicable. * Water/wetland indicates predominant land use adjacent to highway right-of-way. Refer to Section 7.10 for detailed analysis of impact to wetlands. ** Park/Ballfield/School Athletic Field

Table 7.2-5 Right-of-Way Requirements for the MDT Preferred Alternative, Lane Configurations A, B, C and D, By Land Use and Status

Segment	Right-Of-Way (Acres)			New Right-Of-Way Required (Acres) – Land Use							New Right-Of-Way Required (Acres) – Land Status					
	Existing	Total Required	New Required	Agriculture	Commercial	Residential	Forest	Water/ Wetland	Railroad	Public	Fee	Tribal	Allot	Federal	State	Railroad/ Local
A: Evaro to Arlee	188.4	255.1	66.7	23.2	0.8	1.9	21.5	---	---	---	20.6	18.4	7.8	---	0.3	---
B: Arlee	13.6	27.4	13.8	9.2	0.2	1.0	---	---	---	---	6.7	---	3.7	---	---	---
C: Arlee to Ravalli Canyon	100.6	141.1	40.5	7.2	0.3	0.9	---	---	---	---	4.9	---	3.5	---	---	---
D: Ravalli Canyon to Ravalli	47.1	58.5	11.4	8.4	---	---	---	---	---	---	8.4	---	---	---	---	---
E: Ravalli	15.7	24	8.3	1.1	0.1	0.3	---	---	---	---	1.5	---	---	---	---	---
F: Ravalli Hill	90.6	112.8	22.2	6.4	---	---	---	2.3	---	4.9	8.6	3.8	---	1.4	---	---
G: St. Ignatius	46.7	60.2	13.5	5.1	0.3	---	1.3	---	---	---	3.3	2.2	1.2	---	---	---
H: St. Ignatius to MTS 212	133.9	188.2	54.3	41.9	0.9	---	---	8.8	---	---	40.8	1.4	2.7	---	6.4	---
I: MTS 212 to Ronan	79.4	106	26.6	17.7	0.5	---	---	19.4	---	---	19.5	7.1	---	7.8	3.2	---
J: Ronan	20.8	34.6	13.8	1.3	0.7	0.2	---	---	---	---	1.7	---	0.5	---	---	---
K: Ronan to Pablo	90.1	111.5	21.4	1.8	---	---	---	0.2	---	---	1.8	0.2	0.1	---	---	---
L: Pablo	94.1	126.6	32.5	5.1	0.8	2.8	0.5	---	---	---	6.7	2.5	---	---	---	---
M: Pablo to Caffrey Road	34.9	48.4	13.5	9.5	0.3	---	---	---	---	---	9.8	---	---	---	---	---
N-O-P: Caffrey Road - Polson	102.0	123.2	21.2	7.7	0.6	---	---	---	---	---	6.7	---	2.1	---	---	---
TOTAL	1,057.9	1,275.6	217.7	145.6	5.5	7.1	23.3	30.7	---	5.5	141.0	35.6	21.6	9.2	9.9	---
Arlee Alignment 1[1]	13.6	---	8.1	7.3	0.1	0.7	---	---	---	---	5.3	---	2.8	---	---	---
Arlee Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arlee Alignment 3[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arlee Alignment 4[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 1[1]	20.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ronan Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 3[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ronan Alignment 4[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polson Alignment 1[1]	102.0	---	8.9	7.7	0.6	---	---	---	---	0.6	6.7	---	2.1	---	---	---
Polson Alignment 2[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polson Alignment 3[1]	9.9	149.5	139.6	121.2	---	18.4	---	---	---	---	83.5	48.6	7.5	---	---	---

Morrison-Maierle. 1993. [1] Land use for Arlee, Ronan and Polson are within the developed areas along the existing alignment. [2] Jocko River Trout Hatchery. [3] Railroad Acquisition. [4] Included in Fee. NA - Not Applicable. [5] Water/wetland indicates predominant land use adjacent to highway right-of-way. Refer to Section 7.10 for detailed analysis of impact to wetlands. [6] Park/Ballfield/School Athletic Field. [7] This table has been added to the final EIS.

Mitigation

ROW will be acquired only as required to construct the roadway and its excavation and embankment slopes. Where severe restrictions exist, where substantial environmental impacts may occur, and where safety standards are not compromised, the width of total ROW may be reduced in some areas.Constructing steeper slopes or retaining walls in critical areas may be desirable to reduce the required width of ROW. This may require guardrail in areas where it otherwise might not be needed.

Existing stock passes will be perpetuated or reconstructed at their present locations with any of the lane configurations, where it is determined they are needed and justified for allowing livestock to cross the highway, and where they can be reasonably reconstructed. Where perpetuation of stock passes is not practical, other arrangements or compensation will be made with affected landowners.

7.2.3. Arlee Alignments

7.2.3.1. Conversion of Land to Highway Right-of-Way

Tables 7.2-1 through 7.2-45 describe impacts for ROW by land use and land status.

All alignment alternatives and lane configuration alternatives will increase the amount of highway ROW. Alignments 2, 3 and 4 will require new ROW be acquired in locations away from Alignment 1.

Any new highway alignments that provide new or improved access in undeveloped areas will create the potential to increase the conversion of agricultural and open lands to residential, commercial and industrial uses.

7.2.3.2. Influence of Traffic on Land Use

Alignment 1 will increase local and through traffic in the developed commercial area of Arlee. The traffic will be compatible with commercial development, but it will be incompatible with residential areas and public areas such as parks, recreation and public school property. Highway-oriented and nonhighway-oriented businesses will continue to develop near and be interspersed with residential and public areas along and adjacent to the highway.

Alignments 2, 3 and 4 will divert through traffic away from Alignment 1 to a new roadway through rural areas on the west or east edges of the community. The new alignments will cross rural, undeveloped areas. There will be demand for new commercial and industrial development oriented to through traffic and use of the highway for transportation of goods and services.

Alignments 2 and 3 will improve access for more residential development along the current edges of Arlee, and Alignment 4 will create new highway access in a rural area two miles east of Arlee's developed area. Without land use planning and regulation and access control, residential development will extend existing streets and possibly result in new streets that cross agricultural and open land. Approaches from the highway likely will extend to existing residential streets in Arlee and further intersperse commercial and industrial development with residential and public land uses. New commercial development will include new businesses and existing businesses that move from Alignment 1 to the new route.

Mitigation

Mitigation is similar to Impacts Common to All Alternatives and Existing Alignment (Except Arlee, Ronan and Polson).

7.2.4. Ronan Alignments

7.2.4.1. Conversion of Land to Highway Right-of-Way

Tables 7.2-1 through 7.2-45 describe impacts for ROW by land use and land status. All alignment alternatives and lane configuration alternatives will increase the amount of highway ROW. Alignments 2, 3 and 4 will require new ROW acquired in locations away from Alignment 1.

Any new highway alignments that provide new or improved access in undeveloped areas will create the potential to increase the conversion of agricultural and open lands to residential, commercial and industrial uses.

7.2.4.2. Influence of Traffic on Land Use

Alignments 1 and 2 will increase local and through traffic in the developed commercial area of Ronan. The traffic will be compatible with commercial development, but it will be incompatible with residential areas and public areas such as parks, recreation and public school property. Highway-oriented and nonhighway-oriented businesses will continue to develop near and be interspersed with residential and public areas along and adjacent to the highway.

Alignments 3 and 4 will divert through traffic away from Alignment 1 to a new roadway through rural areas on the west edge of the community. The new alignments will cross rural, undeveloped areas. There will be demand for new commercial and industrial development oriented to through traffic and use of the highway for transportation of goods and services.

Alignments 3 and 4 will improve access for more residential development along the west edge of Ronan. Without land use planning and regulation and access control, residential development will extend existing streets and possibly result in new streets that cross agricultural and open land. Approaches from the highway likely will extend to existing residential streets in Ronan and further intersperse commercial and industrial development with residential and public land uses. New commercial development will include new businesses and existing businesses that move from Alignment 1 to the new route.

Mitigation

Mitigation is similar to Impacts Common to All Alternatives and Existing Alignment (Except Arlee, Ronan and Polson).

7.2.5. Polson Alignments

7.2.5.1. Conversion of Land to Highway Right-of-Way

Tables 7.2-1 through 7.2-45 describe impacts for ROW by land use and land status.

Any new highway alignments that provide new or improved access in undeveloped areas will create the potential to increase the conversion of agricultural and open lands to residential, commercial and industrial uses.

Conversion of allotted land held in trust by the federal government for either CSKT or Native American individuals will be between five and 27% of converted land for alignments.

7.2.5.2. Influence of Traffic on Land Use

Alignment 1 will increase local and through traffic in the developed commercial area of Polson. These include the commercial strip along US 93 and the downtown business district. The traffic will be compatible with commercial

development, but it will be incompatible with residential areas and public areas such as the lakefront senior citizen housing, golf course and parks. Increased traffic on Alignment 1 along Flathead Lake will disrupt any future development that intends to integrate the aesthetic resources of Flathead Lake into the social and commercial activities of the community. Highway-oriented and nonhighway-oriented businesses will continue to develop near and be interspersed with residential and public areas along and adjacent to the highway.

Alignments 2 and 3 will divert through traffic away from Alignment 1 to a new roadway through rural areas on the south and west edges of the community. The new alignments will cross rural, undeveloped areas. There will be demand for new commercial and industrial development oriented to through traffic and use of the highway for transportation of goods and services.

Several sites along US 93 have been identified as having potential for future commercial development that will be compatible with Alignment 1, 2 and 3:

- Caffrey Road north to Polson Hill
- The area near Clearview Heights, south of Caffrey Road
- Montana Highway (MT) 35 east of existing commercial development
- Infill development in scattered sites between MT 35 and Lake Street
- Locations north of Polson where Alignments 2 and 3 will intersect US 93

Without land use planning and regulation and access control on Alignments 2 and 3, new development will have the potential to extend approaches from the highway to existing residential streets in Polson and further intersperse commercial and industrial development with residential and public land uses. New commercial development will include new businesses and existing businesses that move from Alignment 1 to the new route.

Mitigation

Mitigation is similar to Impacts Common to All Alternatives and Existing Alignment (Except Arlee, Ronan and Polson).

7.3. FARMLANDS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

In accordance with the Farmland Protection Policy Act (FPPA) of 1981, the effects of the proposed action on FPPA farmland have been examined. Farmland conversion impact ratings (Form AD 1006 included on following pages) have been completed with the assistance of the Lake and Missoula county offices of the U.S. ~~Soil~~Natural Resources Conservation Service (~~SCS~~NRCS). The total farmland evaluation score (Part VII of the AD 1006 included on the following pages) is below 160 with any of the alignments or lane configurations, except with Alignment 4 at Arlee and Alignment 3 at Ronan with Lane Configuration C. As indicated in 7 Code of Federal Regulations (CFR) 658.4(C),(2), alignments receiving a total score of less than 160 points should be given a minimal level of consideration for protection and no additional alignments need to be evaluated. (Figures 7.3-1, 7.3-2 and 7.3-3)

Table 7.3-1 summarizes FPPA farmland that will be converted to highway ROW with each of the alternatives under consideration.

In Arlee, the new roadway on Alignments 1, 2 or 3 will not require the conversion of any FPPA farmland to highway ROW but construction of Alignment 4 will.

In Ronan, the new roadway on Alignments 1 or 2 will require the least conversion of FPPA farmland (one acre or less depending on the lane configuration). Construction on Alignments 3 or 4 will require the conversion of substantially more -- up to 10.8 acres of prime or unique farmland and up to 6.5 acres of farmland of statewide or local importance.

In Polson, the new roadway on Alignment 1 will require the least conversion of FPPA farmland (1.6 acres or less depending on the lane configuration). Alignments 2 or 3 will require the conversion of substantially more -- up to 26.5 acres of prime or unique farmland and up to 12.5 acres of farmland of local importance.

Also, as shown on Table 7.3-1, Lane Configuration A will require the least conversion of FPPA farmland to highway ROW followed, in order of increasing magnitude, by Lane Configurations B, C and D.

As indicated in Section 7.1.3, Lane Configurations B, C and D (each includes four traffic lanes) will substantially improve LOS and efficiency and desirability of driving the highway. These improvements may encourage increased construction of homes and businesses in the area which may result in additional conversion of FPPA farmland to other uses. (Sections 7.1, 7.2, 7.4 and 7.5)

Cumulative impacts to FPPA farmland may occur as a result of improvement to US 93 in combination with increased industrial activities and facilities, increased recreational and tourist activities and facilities, construction of additional residential areas and related schools, utilities and support facilities.

Mitigation

Mitigation measures to reduce the amount of FPPA farmland converted to other uses will include:

- Acquire only the additional width of ROW needed to construct highway improvements, provide desirable safety recovery areas and maintain the highway slopes.

- Implementation of partial access control by MDT and ~~MHC~~MTC. This type of access control will limit the number of approaches that can be constructed to access the highway and will help to reduce "strip development" and other development adjacent to the highway.

- Implement land use planning and ~~zoning~~ regulations, by Missoula and Lake counties and CSKT, to help steer development away from FPPA farmland to land with less agricultural value.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: April 9, 1990
Name Of Project: Evaro-Dirty Corner F5-1(8)	Federal Agency Involved: Federal Highway Administration
Proposed Land Use: Highway Right-of-Way	County And State: Missoula County, Montana
PART II *(To be completed by SCS)*	Date Request Received By SCS: 04/11/90

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply – do not complete additional parts of this form)	Yes ☒	No ☐	Acres Irrigated: 23,930 / Average Farm Size: 535
Major Crop(s): BEEF, ALFALFA, PASTURE, SPRING WHEAT	Farmable Land In Govt. Jurisdiction: Acres: 140,850 % 11.4		Amount Of Farmland As Defined in FPPA: Acres: 59,880 %4
Name Of Land Evaluation System Used: NONE	Name Of Local Site Assessment System: NONE		Date Land Evaluation Returned By: 04/17/90

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	11.0			
B. Total Acres To Be Converted Indirectly	---			
C. Total Acres In Site	11.0			
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	10.2			
B. Total Acres Statewide And Local Important Farmland	0.8			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.02%			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	N/A			
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	100			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	10			
3. Percent Of Site Being Farmed	20	6			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area (NOT USED)	N/A	N/A			
6. Distance To Urban Support Services (NOT USED)	N/A	N/A			
7. Size Of Present Farm Unit Compared To Average	10	5			
8. Creation Of Nonfarmable Farmland	25	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	0			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	2			
TOTAL SITE ASSESSMENT POINTS	160	43			
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	100			
Total Site Assessment *(From Part VI above or a local site assessment)*	160	43			
TOTAL POINTS *(Total of above 2 lines)*	260	143			

Site Selected: EXISTING CORRIDOR	Date Of Selection: JUNE 9, 1990	Was A Local Site Assessment Used? Yes ☐ No ☒

Reason For Selection: SINCE THE TOTAL SCORE IS LESS THAN 160 NO FURTHER SITES NEED TO BE CONSIDERED AS STATED IN 7 CFR 658.4(C), PART (2) - PAGE 27725 OF VOL. 49 FR #130: "SITES RECEIVING A TOTAL SCORE OF LESS THAN 160 BE GIVEN A MINIMAL LEVEL OF CONSIDERATION FOR PROTECTION AND NO ADDITIONAL SITES BE EVALUATED."

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: 9-21-92
Name Of Project: Dirty Corner - Polson	Federal Agency Involved: USDOT - FHWA
Proposed Land Use: Highway Right-of-Way	County And State: Lake County, Montana
PART II *(To be completed by SCS)*	Date Request Received By SCS:

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).* Yes ☒ No ☐	Acres Irrigated: 125,000	Average Farm Size: 460	
Major Crop(s): Hay, potatoes, winter wheat, pasture	Farmable Land In Govt. Jurisdiction: Acres: No data %	Amount Of Farmland As Defined in FPPA: Acres: 47,000 %	
Name Of Land Evaluation System Used: NONE	Name Of Local Site Assessment System: NONE	Date Land Evaluation Returned By SCS: 10-30-92	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	220	435		
B. Total Acres To Be Converted Indirectly	5	5		
C. Total Acres In Site	1427	1675		
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	2.5	20.8		
B. Total Acres Statewide And Local Important Farmland	0.8	5.9		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	<1%	<1%		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	6.5%	6.5%		
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	NONE AVAILABLE			
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points			
1. Area In Nonurban Use	15	12	15	
2. Perimeter In Nonurban Use	10	8	10	
3. Percent Of Site Being Farmed	20	7	8	
4. Protection Provided By State And Local Government	20	0	0	
5. Distance From Urban Builtup Area	NA	NA	NA	
6. Distance To Urban Support Services	NA	NA	NA	
7. Size Of Present Farm Unit Compared To Average	10	5	5	
8. Creation Of Nonfarmable Farmland	25	5	10	
9. Availability Of Farm Support Services	5	5	5	
10. On-Farm Investments	20	2	2	
11. Effects Of Conversion On Farm Support Services	25	0	5	
12. Compatibility With Existing Agricultural Use	10	5	5	
TOTAL SITE ASSESSMENT POINTS	160	49	65	
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland *(From Part V)*	100	100	100	
Total Site Assessment *(From Part VI above or a local site assessment)*	160	49	65	
TOTAL POINTS *(Total of above 2 lines)*	260	149	165	

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☒

Reason For Selection:

Site A = Lane configuration "C", existing alignment

Site B = Lane configuration "C", existing alignment except Alt. 4 at Arlee and Alt. 3 at Ronan.

AD 1006 LAKE COUNTY
COUNTY LINE TO POLSON

FIGURE 7.3-2

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request	
Name Of Project	Polson	Federal Agency Involved	USDOT - FHWA
Proposed Land Use	Highway Right-of-Way	County And State	Lake County, Montana
PART II *(To be completed by SCS)*		Date Request Received By SCS	

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes	No	Acres Irrigated	Average Farm Size
	XX	☐	125,000	460

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount Of Farmland As Defined in FPPA
Alfalfa, hay, potatoes, winter wheat, pasture	Acres: No data %	Acres: 47,000 %
Name Of Land Evaluation System Used	**Name Of Local Site Assessment System**	**Date Land Evaluation Returned By SCS**
None	None	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	23.3	140.9	178.9	
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	125.3	168.9	188.8	
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0	26.5	23.2	
B. Total Acres Statewide And Local Important Farmland	1.6	3.0	12.5	
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	1%	1%	1%	
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	NA	NA	NA	
PART V *(To be completed by SCS)* Land Evaluation Criterion				
Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	100	100	100	
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points			
1. Area In Nonurban Use	15	7	12	15	
2. Perimeter In Nonurban Use	10	8	10	10	
3. Percent Of Site Being Farmed	20	3	10	8	
4. Protection Provided By State And Local Government	20	0	0	0	
5. Distance From Urban Builtup Area	NA	NA	NA	NA	
6. Distance To Urban Support Services	NA	NA	NA	NA	
7. Size Of Present Farm Unit Compared To Average	10	5	5	6	
8. Creation Of Nonfarmable Farmland	25	0	1	0	
9. Availability Of Farm Support Services	5	5	5	5	
10. On-Farm Investments	20	0	2	2	
11. Effects Of Conversion On Farm Support Services	25	0	3	2	
12. Compatibility With Existing Agricultural Use	10	5	5	5	
TOTAL SITE ASSESSMENT POINTS	160	33	53	53	
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland *(From Part V)*	100	100	100	100	
Total Site Assessment *(From Part VI above or a local site assessment)*	160	33	53	53	
TOTAL POINTS *(Total of above 2 lines)*	260	133	153	153	

Site Selected:	Date Of Selection	Was A Local Site Assessment Used?
		Yes ☐ No XX

Reason For Selection:

Site A = Lane configuration "C," existing alignment.
Site B = Lane configuration "D," Alternative 2 (Maximum Area Converted).
Site C = Lane configuration "D," Alternative 3 (Maximum Area Converted).

AD 1006 LAKE COUNTY
POLSON AREA

FIGURE 7.3-3

Table 7.3-1 FPPA Farmland Converted to Right-of-Way

Segment	Description	Lane Configurations									
		CSKT Preferred Alternative: Lane Configuration A		B		C		D		MDT Preferred Alternative: Lane Configurations A, B, C and D	
		(P)	(I)	(P)	(I)	(P)	(I)	(P)	(I)	(P)	(I)
A	Evaro - Arlee	0	0	9.4	0.7	10.6	0.8	11.8	0.9	9.5	0.7
B1, B2, B3	Arlee, Alignments 1 (Existing Alignment), 2 and 3,	0	0	0	0	0	0	NA	NA	0	0
B4	Arlee, Alignment 4, Jocko Valley Alignment	6.7	0	7.6	0	8.5	0	9.3	0	7.6	0
J1	Ronan, Alignment 1, Existing Alignment	0	0	0.2	0	0.3	0	NA	NA	0.3	0
J2	Ronan, Alignment 2, One-Way Couplet	0	0	0.3	NA	NA	NA	NA	NA	0.3	0
J3	Ronan, Alignment 3, Near-West Alignment	7.8	4.7	8.8	5.4	9.8	5.9	10.8	6.5	8.8	5.4
J4	Ronan, Alignment 4, Far-West Alignment	7.0	4.7	7.9	5.4	8.6	5.9	9.6	6.5	7.9	5.4
K	Ronan to Pablo	0	0	0	0	0.2	0.8	0.6	1.3	0.1	0.2
M	Pablo to Caffrey Road	0	0	0.8	0	1.6	0	2.4	0	1.2	0
N-O-P1	Polson, Alignment 1	0	0	0	1.0	0	1.6	NA	NA	0	0.6
N-O-P2	Polson, Alignment 2	0	0	24.5	2.5	25.5	2.8	26.5	3.0	24.5	2.5
N-O-P3	Polson, Alignment 3	0	0	21.4	11.6	22.2	12.0	23.2	12.5	21.4	11.6
MINIMUM TOTAL*		0.0	0.0	10.4	1.7	12.7	3.2	14.8	2.2	10.2	0.9
MAXIMUM TOTAL**		14.5	4.7	51.1	8.6	56.2	10.3	61.4	11.7	51.7	8.8
TOTAL ON EXISTING ALIGNMENT (EXCEPT ARLEE, RONAN AND POLSON)		0	0	10.2	0.7	12.4	1.6	14.8	2.2	10.8	0.9

Morrison-Maierle. 1993.
NA - Not Applicable (P) Acres of prime or unique farmland to be converted to highway right-of-way.
(I) Acres of farmland of statewide or local importance to be converted to highway right-of-way.
* Total of Existing Alignment (Alignment 1) throughout the project area.
** Total includes Existing Alignment throughout, except numbers for Arlee Alignment 4, Ronan Alignment 3 and Polson Alignment 2 were used.
Segments and alignments not listed will not affect FPPA farmland.
New information has been added to this table in the final EIS.

7.4. SOCIAL

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

Population projections indicate western Montana will continue to have a higher rate of population growth than the overall rate of growth for Montana. The expected population growth will continue to be a factor that generates growth of traffic on US 93 from Evaro through Polson. The continued population growth also is expected to continue the trends of increased demand for public facilities/services from CSKT and local governments, including Lake and Missoula counties and the incorporated communities Polson, Ronan and St. Ignatius. Governments will continue to respond to increasing demand for public services associated with population growth and changing patterns of land use and economic development. (Section 6.4)

7.4.1. Impacts Common to All Alternatives

7.4.1.1. Overview of Barrier Effect for Community Cohesion and Access to Neighborhoods and Facilities/Services

Traffic and physical features of the highway will be a barrier that affects social interaction and perception of the aesthetic environment in communities and rural areas outside communities.

The highway and traffic on the highway will affect opportunity for people to circulate among social and business activities that occur in communities and outside communities in open, rural areas.[13]

The severity of the barrier effect for each alternative will depend on the volume and speed of traffic and the highway's operation and capacity, combined with location and width. Traffic volume that exceeds the capacity of the transportation system will result in traffic congestion that affects community cohesion and access to neighborhoods and facilities/services.

The physical presence of the highway, combined with traffic on the highway, will disrupt aesthetic qualities because of effects on air quality, noise, visual and other environmental conditions. Traffic congestion restricts access for vehicular and pedestrian traffic to enter, leave and cross the highway without extended time delay and reduced safety.

Traffic congestion will affect community cohesion by reducing the ability of people to meet casually and associate freely. Reduced association with neighbors disrupts living patterns and reduces efficiency of facilities/services. Traffic congestion reduces opportunity for outside activities by children and adults. The reduced opportunity affects use of facilities/services. Parks and playgrounds becoming inaccessible, access to schools becoming difficult and unsafe, and stores losing customers because of difficulty in access are common concerns caused by traffic congestion.[14]

Sections 7.4.4, 7.4.5 and 7.4.6 discuss the barrier effects for alignment alternatives at Arlee, Ronan and Polson.

7.4.1.2. Discrimination: Isolation of Neighborhoods and Facilities/Services

The highway and traffic on the highway will divide neighborhoods from facilities/services inside and outside communities. None of the alignment alternatives or lane configuration alternatives, including No Action, will isolate, or therefore discriminate against, any racial, ethnic, or other minority groups. No social group will derive

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[13]Highway Bypass Impact Analysis. State of Wisconsin, Department of Transportation. 1982.

[14]Transportation Research Record 858, Elements of Short-Run Marginal Costs of Highway Use, Ralph C. Erickson.

selective benefits or disadvantages from any of the alternatives. No school district, church, cemetery, park, or other public place will be isolated from access to the highway and facilities/services.

7.4.1.3. Environmental Justice Executive Order 12898 and Title VI of the Civil Rights Act of 1964

Information in this section has been added to document that the preferred alternatives of the proposed action are in compliance with Environmental Justice Executive Order 12898 and Title VI of the Civil Rights Act of 1964.

Growth of the population has been identified as an aspect of change that affects social conditions and cultural resources of the area. Highway improvement has not been isolated as a factor that, by itself, will cause increased growth of the population on the Flathead Indian Reservation. Highway improvement has been considered as one of a number of factors that will combine to make the reservation more attractive as a place to live for individuals and families commuting to employment in Missoula.

Growth of the commuter-related population will be part of ongoing, overall population growth that will continue to make it difficult for Native Americans to maintain their traditional tribal values. The Flathead and Kootenai culture committees also have expressed concern that the pressure of increasing population and traffic affects cultural aspects of natural resources, such as wildlife, air and water quality, and noise levels. Mitigation and enhancement measures have been identified to minimize adverse effects, and for some resource values such as wetlands and associated wildlife, improve conditions in the environment along US 93. Mitigation measures have been identified to support cultural preservation.

Overall population growth also will continue to increase demand for land and housing. This will convert more open land to residential and commercial development and increase values for land and housing. MDT has identified coordinating access management for US 93 with tribal and local land use planning and regulation as a mitigation measure to manage growth and development.

There will be benefits with improved transportation operation and safety. Congestion will be reduced, and access will be improved for individuals who use public and private facilities/services along US 93.

In 1990, Native Americans were 24% of the total population. Native Americans are large segments of the populations of Arlee, St. Ignatius, Pablo, Ronan and Polson. Thirty-nine percent of reservation's population, 16 years and older, had incomes below poverty level, compared with 16% for Montana (Tables 6.4-2 and 6.4-5).[15]

The population of the Flathead Indian Reservation has a dispersed pattern of residency. In 1990, approximately 37% of the 10,399 residential dwellings on the Flathead Indian Reservation were located in the communities of Arlee, St. Ignatius, Charlo, Ronan, Pablo, Polson and Hot Springs. The remaining 63% of residential units were in rural areas outside communities. Ninety-one percent of the reservation's housing was located in Lake and Missoula counties, which are the primary areas served by US 93 and the proposed action on the Flathead Indian Reservation. Ninety-three percent of the population of Native Americans live in the Lake and Missoula county parts of the reservation.[16] (Table 6.2-7)

Approximately 9,150 (88%) of the housing units were located in the Lake County portion of the reservation. Seventy-five percent of housing units were occupied, and 25% were unoccupied. Fifteen percent of housing units were unoccupied and used for seasonal, recreational or occasional use. The seasonally vacant units generally are not available for year-round occupancy.[17]

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[15]U.S. Department of Commerce, Bureau of the Census. U.S. Census of Population. 1990.

[16]Ibid.

[17]Confederated Salish and Kootenai Tribes. Flathead Reservation Comprehensive Resources Plan. Volume I, Existing Conditions. Pages 19-2 - 19-3.

Among Native Americans, 60% were in homes owner-occupied and 40% were renter-occupied. For non-Indians, 73% were in homes owner-occupied and 27% were renter-occupied.[18] (Table 6.2-7)

The MDT Preferred Alternative will require removal of 10 buildings and a telephone sub-station on the existing alignment. It will require removal of three buildings on Polson Alignment 3. (Table 7.18-2)

On the existing alignment, five buildings are single-family residential, three are commercial, one is vacant and one is used for undetermined, miscellaneous purposes. The telephone-substation is a facility owned and operated by a public utility. On Polson Alignment 3, all of the buildings are single-family residential.

To protect personal privacy of local residents, specific and detailed demographic and socioeconomic characteristics are not identified for owners, occupants and operators who will be relocated with removal of buildings. All residential dwelling units removed by the proposed action are single-family homes. The residences likely will include owner- and renter-occupied units, primarily moderate and low cost housing.

Information from the 1990 Census indicates some Native American households will be among the five residences to be removed on the existing alignment and three residences to be removed on Polson Alignment 3. This housing also likely will include persons with incomes below poverty level. In the areas that have removal of buildings, the percentages of households with Native Americans and with income below poverty level are similar to the overall patterns of population for the Flathead Indian Reservation. (Tables 6.4-2 and 6.4-5)

The five residences on the existing alignment and three residences on Polson Alignment 3 are a small part of the area's housing stock. According to the U.S. Census, Native Americans occupied 22%, or approximately 2,290, of the 10,399 housing units on the Flathead Indian Reservation in 1990.[19]

The MDT Preferred Alternative will not have a disproportionately high and adverse effect on minority or low-income populations. A small number of residences will be removed, and they are located in areas with race and income characteristics similar to the total population of the Flathead Indian Reservation.

Section 7.18.2 presents information about characteristics of residential and commercial buildings that will be removed with the proposed action.

7.4.1.4. Population Growth

Population growth will continue under all alternatives, including No Action. Most population growth will continue to be due to natural population increases (more local births than deaths) and in-migration, which is expected to include persons who are retired or seasonal residents, persons who live and work in the area and persons who commute to work outside the area. Highway improvement will have an indirect effect with additional population growth due to improved travel conditions for commuters who use the highway to travel to work in the region's major communities, Missoula and Kalispell.

All alternatives, including No Action, will provide a highway transportation system that is used by the growing population. Improvement of US 93, with reduced travel time and improved driving conditions and convenience, will combine with factors such as the rural lifestyle, natural environment and small town atmosphere to further increase the desirability of the area as a place to live.

With or without highway improvement, continued population growth will make it more difficult for CSKT to maintain their homeland on the Flathead Indian Reservation. Their traditional language, customs and religious

[18]U.S. Department of Commerce, Bureau of the Census. U.S. Census of Population. 1990.
[19]Ibid.

beliefs have required special attention to maintain and utilize in everyday life. Any increase in the non-tribal population will increase competition for land CSKT prefers to acquire for tribal ownership. (Section 7.14)

With or without highway improvement, continued population growth also will continue to adversely affect those among the area's long-time residents who view their social well-being and quality of life to be decreased by growth and development. The ongoing process of growth and development will have highway improvement better manage traffic to improve social conditions, while the increasing population changes the rural lifestyle, natural environment and small town atmosphere to a more urban environment.

Highway improvement is a factor to be considered in the planning process for its contribution to population growth, land use and economic development. Other factors, which are beyond the control of highway development, also influence growth and development~~have more influence on growth and development than the highway~~. These factors include overall market demand, price and availability of land for development, local and regional rates and patterns of population growth and economic development, and provision of public services such as water, sewer, schools and transportation facilities away from the highway. The importance of factors that affect growth and development will vary, depending on local and regional conditions.[20]

Research information compiled by FHWA identifies the potential for development within a reasonable period of time as an important consideration for estimating indirect and cumulative effects for highway projects. According to FHWA, in areas that experience little growth over time, an individual highway project likely will have negligible indirect and cumulative effects because of the absence of other activities occurring in the vicinity. In areas of moderate to rapid development, highway improvement can be an important element of change leading to long-term impacts.

7.4.1.5. Population Growth and Workers Who Commute Outside the Area

7.4.1.5.1. Flathead Indian Reservation

An estimate was made to consider an increase in commuters from the Flathead Indian Reservation to places of employment in Missoula. The estimate assumed an increase in commuters would occur over the 10- to 20-year period during which US 93 will be improved over the entire distance from Evaro through Polson. It applies to the alternatives that meet the purpose and need for the proposed action.[21] The estimate also assumed the rate of growth in commuting from the reservation would increase to be approximately equal to the rate of commuting from Ravalli County to Missoula. That means it is assumed there will be a substantially higher rate of growth in commuting in the future than there is currently from the Flathead Indian Reservation to Missoula. (Table 7.4-1 and Section 6.4.4.2)

For the entire region of western Montana, improvement of US 93 will not, by itself, add to ongoing population growth. Improvement of US 93 will reduce travel time and improve driving conditions for commuters to Missoula.

Improved transportation, with reduced travel time and improved driving conditions, combines with a broad mix of factors to be a part of growth. The highway transportation system is one of many factors that will combine to influence decisions about where people choose to live in and around Missoula:

- Growth of the population and economy in Missoula
- Concern about living in an urban environment

[20]U.S. Department of Transportation, Federal Highway Administration. Position Paper on Secondary and Cumulative Impact Assessment and related planning information. 1992.

[21]A four-lane highway will and an improved two-lane highway will not provide operation and level-of-service to meet the purpose and need.

Table 7.4-1 Commuters and Commuter-Related Population,* Flathead Indian Reservation

Categories of Population and Commuters for the Flathead Indian Reservation	Population Estimates and Year			
	1990	2020		
		High	Moderate	Low
Estimate of overall population projection for the Flathead Indian Reservation*	21,260	N.A.	28,600*	N.A.
Commuter-Related Population**				
Estimate of Commuter-Related Population** without Highway Improvement	1,340	1,810	1,620	1,470
Estimate of Commuter-Related Population** with Highway Improvement	--	2,310	1,920	1,610
Commuters				
Estimate of Commuters from Flathead Indian Reservation to Missoula without Highway Improvement	510	700	620	560
Estimate of Commuters from Flathead Indian Reservation to Missoula with Highway Improvement	--	900	740	620

Montana Department of Commerce, Census and Economic Information Center. Population Projection Information.
Morrison-Maierle.
N.A. is Not Applicable.
*The estimate of overall population growth does not have a range high-moderate-low.
**Commuter-related population represents commuters and their families, based on average household size.
This table has been added to the final EIS.

- Choice among rural areas in the five valleys around Missoula
- Willingness to drive longer distances,with increased time
- Availability and cost of housing in Missoula and rural areas around Missoula
- Local and regional land use policy

- Lower travel times and better driving conditions

- Other factors, such as personal values, taxes, schools and medical services.

In general, the estimate represents a worst-case set of conditions to show the potential for growth of the commuter-related population. The estimate should not be interpreted to mean all of the growth of the commuter-related population in the estimate is due strictly to improvement of US 93. The estimate should be considered as a combined effect of all the factors involved in growth.

The estimate of commuter-related population[22] growth includes high, moderate and low parts. The estimate indicates there will be between 60 and 200 additional commuters at the end of the 10- to 20-year period of highway improvement. The additional commuter-related population (the sum of commuters and their families) will be between 140 and 500 at the end of the 10- to 20-year period of highway improvement. This range of growth for the commuter-related population would be two to seven percent of total population growth between 1990 and 2020.

Factors such as regional rates of population growth and economic development, regional land use and travel conditions, and improvement of the regional transportation system, will combine to work with improvement of US 93 from Evaro through Polson to determine the amount and distribution of commuter-related growth. ~~The indirect and cumulative impacts that result from the relationship between highway improvement and population growth has not been quantified, and a specific level of population growth due to highway improvement has not been measured, beyond the analysis that is presented in this section.~~

With or without highway improvement, the recent pattern of growth and development is expected to continue in the area from Evaro through Polson. Improvement of US 93 as a regional transportation facility is not planned specifically to promote growth and development. An improved highway will be a factor that combines with the factors discussed above to provide transportation services that support any increase in the rate of population growth. As discussed in Section 6.4, any increase in commuters will consist of two groups: (1) established residents, who reside in Lake County and the part of northern Missoula County between Evaro and Lake County, and who obtain work outside the area; (2) new residents who move to the area and commute to work outside the area.

Overall commute times will remain much longer than is typical for workers in the most populous areas between Evaro and Polson; the long travel time will be a factor that limits, but does not eliminate, growth of the population due to new residents who commute to Missoula. In 1990, information from the U.S. Census indicated the average travel time to work was 16 minutes for Lake County, with the average travel times in the Polson, Ronan and St. Ignatius-Arlee areas being 15, 12 and 20 minutes, respectively.[23] Travel times to Missoula from these areas are greater than the average travel times. ~~Current estimated travel times to Missoula range from 27 minutes from the Arlee area to 78 minutes for the Polson area. Travel time to Missoula from the Evaro area in Missoula County, the southern end of the proposed action, was 13 minutes in 1990.~~ Four-lane highway improvement is expected to reduce current travel times ~~by between one and two minutes~~ from various locations in the area to Missoula in the design year. No Action or Lane Configuration A will increase travel times. (~~Table 7.1-1~~Section 7.1.1)

As discussed in Section 6.4, perception of the area's desirability as a place to live, combined with the rates of population growth in the Missoula and Kalispell areas, will be major factors that affect growth in commuters. Between 1980 and 1990, when Missoula County's population grew by four percent, the number of commuters from Lake County to Missoula did not change; the St. Ignatius-Arlee areas in southern Lake County had a decrease of 50, and the Polson area, with Flathead Lake in northern Lake County, had an increase of 50. Although information about commuters is unavailable from the U.S. Census for the part of Missoula County between Evaro and Lake County, Section 6.4 notes the population of that area increased by eight percent between 1980 and 1990. All of

[22]Commuter-related population represents commuters and their families, based on average household size.
[23]U.S. Department of Commerce, Bureau of the Census. U.S. Census of Population. 1990.

the increase was persons who were non-Indian, indicating newcomers, some of whom commute to Missoula, were moving to the Evaro area.[24]

Recent patterns of growth in commuters from Lake County indicate the northern (Polson area) and southern (Arlee-St. Ignatius areas) parts of Lake County will be the focus of commuter-based population growth. The Polson area will be influenced by population growth and economic development in both Missoula and Kalispell, while the Arlee-St. Ignatius areas will be influenced by Missoula. (Section 6.4)

Because of the expected increase in the rate of growth in Missoula County, it is expected population growth related to commuters will increase in Lake County, the Evaro area of northern Missoula County, and other counties around Missoula, such as Ravalli, with or without highway improvement.

The cumulative effects of the proposed action and other highway projects will result in a highway system that improves the desirability of travel for commuters in the area from Evaro through Polson and throughout Lake County north of Polson. Such projects include the four-lane segment of US 93 abutting the proposed action between I-90 and Evaro built in 1985-86, improvement during the late-1980s of US 93 north of Polson and the proposed improvement of US 93 from Somers to Whitefish, which is approximately 50 miles north of the proposed action. The cumulative effects of improvement of US 93 from Evaro through Polson and Lolo to Hamilton south of Missoula will moderate the effect of highway improvement causing new residents to move to the area from Evaro through Polson and commute to work in Missoula. Improvement of the highway south of Missoula also will combine with the factors that influence population growth, as discussed above, to make the area south of Missoula more desirable for travel.

With no substantial differences in travel times among Lane Configurations B, C and D, which are four-lane highways, there also will be no measurable difference in the effects of the lane configurations on travel time of commuters who travel US 93 to work outside the area.

While highway improvement will increase commuters' willingness to drive in terms of time and distance to work, thereby increasing the desirability of the area for residential development and population growth, other factors, in addition to the long distance and travel time discussed above, will be constraints that limit the potential for growth and development:

Terrain on the route of US 93

Several segments of US 93 present difficult driving conditions that will reduce drivers' willingness to commute to work daily between Missoula and locations in the area. Evaro Hill, which is south of the proposed action, and Ravalli Hill have steep grades. Although highway improvement will lessen the difficulty of crossing the grades, these areas will be factors that limit the growth of commuter traffic. Winter driving conditions on Evaro and Ravalli hills will further increase the difficulty of commuting to work.

Availability of land for development

There is limited land available for development. Any additional residential development in rural areas outside communities will affect the rural lifestyle and natural environment.

The area between 15 and 20 miles from Missoula is forested land and has limited capacity for growth and development. The area around Arlee, which is between 20 and 30 miles from Missoula has private, tribal and trust/allotment lands without steep slopes. This land, which is predominantly agricultural, has scattered development across the basin of the Jocko Valley, which is between one and three miles in width. In the area between 30 and

[24]U.S. Department of Commerce, Bureau of the Census. Census of the Population. 1980-1990.

40 miles from Missoula, steep slopes limit the availability of land for development between Ravalli Canyon and Ravalli Hill. Between Ravalli Hill and Polson, 40-70 miles from Missoula, the Mission Valley has private, tribal, trust/allotment, federal and state lands. This area combines growing development with agricultural lands and wetland areas. In order to enlarge the tribal land base of the Flathead Indian Reservation, CSKT purchases land that is for sale and available for development.

7.4.1.6. Shifts in Population: Workers Who Commute Inside the Area

Highway improvement will have indirect and cumulative effects that change the pattern of growth for the segment of the population commuting to work on US 93 from Evaro through Polson. As with workers who commute outside the area, reduced travel time and improved convenience will encourage workers to commute longer distances in the area. Locations that are perceived to be desirable and affordable will be most likely to have increased population from workers who commute in the area.

7.4.1.7. Students Who Commute to Colleges in Missoula and Kalispell

Students who commute to the University of Montana in Missoula and Flathead Community College in Kalispell also will benefit from improvement of US 93. While estimates about the number of students who commute to the schools, either daily or several days of the week, are not available, it is expected most students are long-time local residents for whom an improved highway could make a college education more obtainable. As with commuters who travel to work on US 93, any potential effects of indirect population growth due to an increase in the number of college students from outside the area will depend on other factors involving the region and the schools.

Such growth of the student population has not been measured beyond the general discussion and analysis presented in this section.

7.4.1.8. Population Impacts of Highway Alignments at Arlee, Ronan and Polson

Highway alignments at Arlee, Ronan and Polson will have little long-term impact on population growth in Lake County. The alignments have the potential to shift boundaries of local trade areas for communities, which may affect the ability of local economies in Lake County to support employment. The economic changes will shift sales for highway-oriented businesses, depending on pattern of development for highway-oriented businesses.

Changes in population because of shifts in sales, earnings and employment of highway-oriented businesses will affect communities and adjacent rural areas. Estimates of changes in population for the St. Ignatius, Ronan and Polson census subdivisions, which encompass the rural areas adjacent to the communities of Arlee, Ronan and Polson, indicate there will be variations of one percent or less, with all alignments, through the design year ~~2015~~2020.[25]

Mitigation

The mitigation measures for land use (and access control) will provide the most appropriate opportunity and strategy to control population growth. (Section 7.2)

7.4.2. No Action

No Action will require the least physical presence for a highway. Its inadequate capacity for current and future volume of traffic will adversely affect social conditions.

[25]Jim Boyer. Alternative Highway Alignments Technical Report. 1993.

As the volume of traffic increases, US 93 will become more of a barrier. The roadway will not be widened. There will be increased concentrations of traffic. Longer platoons of vehicles will further restrict the flow of traffic.

Increased traffic will disrupt and restrict access for vehicular and pedestrian traffic in residential, commercial, industrial and public areas. More uncontrolled traffic will worsen safety and create a barrier that splits residential areas from facilities/services during intermittent times of the day and intermittent periods of the year.

7.4.3. Existing Alignment (Except Arlee, Ronan and Polson)

7.4.3.1. Barrier Effect for Community Cohesion and Access to Neighborhoods and Facilities/Services

Lane Configuration A (two-lane highway), which will have impacts similar to No Action, will be a less-wide physical barrier for vehicular and pedestrian access to and from the highway. The barrier effect for Lane Configuration A will occur as traffic is concentrated in multi-vehicle platoons that increase traffic congestion and reduce space between moving vehicles.

Lane Configurations B, C and D (four-lane highway) will result in a wider roadway. They will provide more spacing in traffic flow. They will provide better opportunity for access during periods of peak traffic. The barrier effect for Lane Configurations B, C and D will occur as traffic is dispersed across a wider area of highway, increasing the distance required to cross the highway.

Lane Configurations B, C and D will place traffic closer to developed residential, commercial, industrial and public areas that either have frontage along the highway or are near the highway. They will occupy a wider area than the current highway and result in a more prominent physical presence. They will decrease existing buffer zones between developed or undeveloped property and highway ROW.

Lane Configurations B, C and D will provide a more efficient highway for school buses, mail carriers, police and fire vehicles, ambulances and any other public-service vehicles.

7.4.4. Arlee Alignments

7.4.4.1. Alignment 1: Existing Alignment

Lane Configuration A will have impacts similar to No Action. It will become more of a barrier as traffic increases in the community. Traffic will be increasingly concentrated in the space of the existing roadway as spacing decreases between vehicles. Traffic congestion will increase and access will decrease to facilities/services in residential, commercial, industrial and public areas.

Lane Configurations B and C will be a barrier in the community because of a wider roadway that has a more prominent physical presence. Although there will be more spacing between vehicles, traffic will be closer to developed residential, commercial, industrial and public areas that either have frontage along the highway or are near the highway. The existing buffer zones will decrease between residential, commercial, industrial or public property and highway ROW.

All lane configurations with Alignment 1 will maintain the present patterns of vehicular and pedestrian travel. As traffic volume increases, convenience will be reduced, while travel time and operational expenses will increase for local and through traffic.

All lane configurations will improve the highway over existing conditions for school buses, mail carriers, police and fire vehicles, ambulances and any other vehicles providing public and private services. Through traffic will

continue to travel through Arlee on the existing alignment, increasing congestion and obstructing driving conditions for various vehicles that provide public and private services.

Section 7.4.1.1 provides an overview of barrier effects that will occur in communities.

7.4.4.2. Alignments 2, 3 and 4

All lane configurations with Arlee Alignments 2, 3 and 4 will result in a new roadway through the rural areas on the west or east edges of the community. They will divert through traffic from the developed residential, commercial and industrial areas to an open agricultural area. The area west of Arlee currently is served by county roads and is bounded on the west by railroad ROW. The area east of Arlee, which is currently served by MTS 559 and tribal and county roads, is bounded by school property, the powwow grounds and the rodeo grounds.

All lane configurations will change the area having an undeveloped rural lifestyle and natural environment into an area with a developed highway.

All lane configurations will improve the efficiency of through traffic by maintaining uninterrupted flow. Convenience will be improved, while travel time and operational expenses will decrease for local and through traffic.

In Arlee, the smaller volume of traffic that will pass through town will improve access to and from highway approaches for vehicular and pedestrian traffic among residential, commercial, industrial and public areas. The highway will be less of a barrier in the community.

All lane configurations will create a barrier and split the rural areas west or east of Arlee from residential, commercial, industrial and public areas in Arlee. Pedestrian traffic will be disrupted in the rural area. With Alignment 2, children who walk to school from the rural area and children from Arlee who walk to the rural area to fish and swim in Finley Creek will cross the highway. In the open area northwest of Arlee's developed area, the route of Alignment 2 will cross a location that is planned for development as a sewage lagoon. With Alignment 3, pedestrian traffic between Arlee and the area with the powwow and rodeo grounds will cross the highway.

Without access control on Alignments 2 and 3, approaches from residential streets in the areas of Arlee west or east of the current highway could be extended to the new highway. Vehicles turning from the highway onto the extended streets will increase traffic in the residential area. There could be new commercial and industrial development at the new highway approaches, further increasing vehicular and pedestrian traffic through the residential area on the west or east sides of Arlee. Without access control on Alignment 2, there will be increased vehicular and pedestrian activity near the railroad ROW.

Alignments 2, 3 and 4 will divert through traffic away from the existing alignment and provide the most improvement for school buses, mail carriers, police and fire vehicles, ambulances and any other vehicles that provide public or private services in Arlee.

Mitigation

The barrier effects of all Arlee alignment and lane configuration alternatives may be mitigated by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing, speed control and landscaping. Landscaping can be used to reduce noise, air pollution and the perception that the highway imposes a physical intrusion ~~of the highway~~ on human activities.

For Alignment 1, public comment of residents in the Arlee area and the Arlee community team support the use of a traffic signal to interrupt through traffic and improve the opportunity for access to the highway by local traffic.

The interrupted flow of through traffic will further increase traffic congestion that restricts access at all locations along the highway, except the intersection with the traffic signal. (Chapter 10)

Participants in public and agency scoping meetings are in general agreement that a pedestrian overpass should not be used. It will require pedestrians to travel up and down long ramps, it will not be convenient for many pedestrians, and it will be expensive.

Access control ~~along the entire route of the new highway west or east of Arlee~~and corridor preservation along the alternate alignments at Arlee will restrict new commercial and industrial development near existing residential areas. Access control also will restrict traffic from traveling through the existing residential area between the current highway and the new highway.

7.4.5. Ronan Alignments

7.4.5.1. Alignment 1: Existing Alignment

Lane Configuration A will have impacts similar to No Action. It will become more of a barrier as traffic increases in the community. Traffic will be increasingly concentrated in the space of the existing roadway as spacing decreases between vehicles. Traffic congestion will increase, and access will decrease to facilities/services in residential, commercial, industrial and public areas.

Lane Configurations B and C will be a barrier in the community because of a wider roadway that has a more prominent physical presence. Although there will be more spacing between vehicles, traffic will be closer to developed residential, commercial, industrial and public areas that either have frontage along the highway or are near the highway. The existing buffer zones will decrease between residential, commercial, industrial or public property and highway ROW.

All lane configurations with Alignment 1 will maintain the present patterns of vehicular and pedestrian travel. As traffic volume increases, convenience will be reduced, while travel time and operational expenses will increase for local and through traffic.

All lane configurations will improve the highway over existing conditions for school buses, mail carriers, police and fire vehicles, ambulances and any other vehicles providing public and private services. Through traffic will continue to travel through Ronan with the existing alignment, increasing congestion and obstructing driving conditions for various vehicles that provide public and private services.

7.4.5.2. Alignment 2: One-Way Couplet

Ronan Alignment 2 will maintain the roadway on the existing alignment and provide a new roadway for southbound US 93 traffic on First Avenue Southwest, one block west of the existing alignment. This one-way couplet will place traffic closer to developed residential, commercial, industrial and public areas that either have frontage along the highway or are near the highway. It will occupy a wider area than the current street on the new southbound route and result in a more prominent physical presence. It will decrease existing buffer zones between residential, commercial, industrial or public property and highway ROW.

Alignment 2 will change the present patterns of vehicular and pedestrian travel by separating northbound and southbound lanes of traffic through Ronan. There will continue to be interrupted flow of traffic, but to a lesser extent than No Action. As traffic volume increases, convenience will be reduced, while travel time and operational expenses will increase for local and through traffic.

Alignment 2 will create a barrier in two areas and split residential areas from commercial, industrial and public areas. It will place new lanes of traffic on the east side of the schools, and it will require relocation of several buildings that house the CSKT Human Services Department near Round Butte Road (MTS 211). On First Avenue Southwest, it will place new lanes of traffic on the east side of a church. A senior citizens and developmentally disabled residential center, with approximately 20 apartments, will be split from the commercial district on the existing alignment.

Persons who use the services of the CSKT Human Services Department and residents of the senior citizens and developmentally disabled residential center on First Avenue Southwest will be placed at a disadvantage because the one-way couplet will be a barrier to unimpeded access to facilities/services.

With a separation of northbound and southbound traffic, Alignment 2 will provide more spacing in traffic flow and provide better opportunity for access on the existing alignment during periods of peak traffic. The volume of traffic will increase on First Avenue Southwest and worsen access in that area.

To provide access between the north and south routes of the one-way couplet will require improvement of cross streets between the existing alignment and First Avenue Southwest. The cross streets have mixed residential, commercial and open areas, including the city park. There will be increased vehicular and pedestrian traffic on the cross streets.

All lane configurations will improve the highway over existing conditions for school buses, mail carriers, police and fire vehicles, ambulances and any other vehicles providing public and private services. Through traffic will continue to travel through Ronan on the existing alignment, increasing congestion and obstructing driving conditions for various vehicles that provide public and private services.

7.4.5.3. Alignments 3 and 4

All lane configurations with Ronan Alignments 3 and 4 will result in a new roadway through the rural area on the west edge of the community of Ronan. They will divert through traffic from the developed residential, commercial and industrial areas in Ronan to an open agricultural area. The area west of Ronan currently is served by Round Butte Road (MTS 211) and county roads. Alignment 3 will be bounded on the west by Ronan's wastewater treatment plant and a ballfield. Alignment 4, which will be on the route of Thirteenth Avenue Southwest, will be bounded on the east by Ronan's wastewater treatment plant and a ballfield.

All lane configurations will change the area having an undeveloped rural lifestyle and natural environment into an area with a developed highway.

All lane configurations will improve the efficiency of through traffic by maintaining uninterrupted flow. Convenience will be improved, while travel time and operational expenses will decrease for local and through traffic.

In Ronan, the smaller volume of traffic that will pass through town will improve access to and from highway approaches for vehicular and pedestrian traffic among residential, commercial, industrial and public areas. The highway will be less of a barrier in the community.

All lane configurations will create a barrier and split the rural areas west of Ronan from residential, commercial, industrial and public areas in Ronan. Pedestrian traffic will be disrupted in the rural area. Children who walk to school from the rural area along MTS 211 will cross the highway.

Without access control on Alignments 3 and 4, approaches from residential streets in the area of Ronan west of the current highway could be extended to the new highway. Vehicles turning from the highway onto the extended

streets will increase traffic in the residential area. There could be new commercial and industrial development at the new highway approaches, further increasing vehicular and pedestrian traffic through the residential area on the west side of Ronan. Without access control, there will be increased vehicular and pedestrian activity near the railroad ROW.

Alignments 3 and 4 will divert through traffic away from the existing alignment and provide the most improvement for school buses, mail carriers, police and fire vehicles, ambulances and any other vehicles that provide public or private services in Ronan.

The lessening of traffic congestion also will reduce traffic interference with emergency vehicles and allow for safer operation of school buses.

Mitigation

All Ronan Alignments

The barrier effects of all Ronan alignment and lane configuration alternatives may be mitigated by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing, speed control and landscaping. Landscaping can be used to reduce noise, air pollution and the physical intrusion of the highway on human activities.

For Alignments 1 and 2, public comment of residents in the Ronan area and the Ronan community team support the use of traffic signals to interrupt through traffic and improve the opportunity for access to the highway by local traffic. The interrupted flow of through traffic will further increase traffic congestion that restricts access at all locations along the highway, except the intersections with the traffic signal. (Chapter 10)

Participants in public and agency scoping meetings are in general agreement that a pedestrian overpass should not be used. It will require pedestrians to travel up and down long ramps, it will not be convenient for many pedestrians, and it will be expensive.

Access control along the entire route of the new highway west of Ronan will restrict new commercial and industrial development near existing residential areas. Access control also will restrict traffic from traveling through the existing residential area between the current highway and the new highway.

7.4.6. Polson Alignments

7.4.6.1. Alignment 1: Existing Alignment

Widening of US 93, coupled with growth in traffic, will further segregate and hinder access to and from north side residences, businesses, municipal offices, resorts, and recreational areas. Alignment 1 will increase the distance and time which senior citizen pedestrians will be exposed to traffic when crossing US 93. The corridor is not wide enough to allow for construction of a continuous sidewalk on the north side of Alignment 1, and pedestrians will walk on the highway shoulders.

Lane Configurations B and C also will widen the area of exposure to traffic for children and other pedestrians walking and bicycling to the Boettcher Park swimming area and other north side recreation areas.

Waterfront and park areas on the north side of US 93 are used for dispersed recreation. Highway widening will bring traffic closer to the lake shore and reduce staging areas for land and water-based activities. Widening will also reduce the buffer area separating the highway traffic from park and golf course users.

By lessening traffic congestion, Alignment 1 will improve general driving conditions along the US 93 corridor. The safety of seniors, children, and others will be advanced by installation of additional traffic signals and crosswalks. Although Alignment 1 will expand the area of exposure for seniors driving cars onto US 93 from the Lakeview Retirement Village complex, reduced congestion will make it easier to drive in and out of the complex. Road widening and installation of turning bays will create a safer riding environment for bicyclists riding on US 93.

7.4.6.2. Alignments 2 and 3

Alignment 2 or 3 will have little impact on the geographic distribution of Polson area population growth. Areas south and west of Polson and the Rocky Point area will experience new settlement irrespective of whether Alignment 2 or 3 is developed. The alignments will improve transportation access to areas south and west of Polson, but new roadways will not substantially change the rate or characteristics of future settlement in these areas.[26]

Alignment 2 or 3 will bring auto and truck noise, air pollution, and physical presence of highway traffic into farming and low density residential areas. Households living near the highway will experience much less pastoral living environments and will need to make lifestyle adjustments to accommodate living near a heavily traveled highway. Twenty houses have driveways entering on to Alignment 2. Seven houses will have driveways entering on to Alignment 3. One house on Caffrey Road will be within 100 feet of the Alignments 2 or 3. As traffic volume increases over time, the impacts of the highway will also increase.

New commercial development occurring along portions of Alignment 2 or 3 also will change the agrarian and residential character of nearby areas.

Alignment 2 or 3 will attract most drive-through traffic and will reduce flows along the existing US 93 corridor. Driving, walking and bicycling conditions along and across the existing highway will be improved. The existing alignment will still carry high traffic volume. Vehicle and pedestrian movements will be further improved by additional traffic signals.

The diversion of traffic will cause the north side of Polson to be less isolated from the rest of the city. Reduction in traffic congestion will also improve access and reduce noise and air pollution impacts to lake shore parks, shoreline recreation areas, resorts, and other businesses along the corridor. The lessening of traffic congestion and placement of new traffic signals also will reduce traffic interference with emergency vehicles and allow for safer operation of school buses.

Mitigation

All Polson Alignments

The barrier effects may be reduced by design and traffic control features, such as sidewalks, pedestrian cross walks, bicycle lanes, signing, traffic signals and speed control. Landscaping can be used to reduce noise, air pollution, and the physical intrusion of the highway on human activities.

For Alignment 1, public comment of residents in the Polson area and the Polson community team support the use of traffic signals to interrupt through traffic and improve the opportunity for access to the highway by local traffic. The interrupted flow of through traffic will further increase traffic congestion that restricts access at all locations along the highway, except the intersections with the traffic signal. (Chapter 10)

[26]Jerry Sorenson, Lake County Planning Director. 1993.

Access control along the entire route of the new highway south and west of Polson will restrict new commercial and industrial development near existing residential areas. Access control also will restrict traffic from traveling through the existing residential area between the current highway and the new highway.

7.5. ECONOMICS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

The proposed action does not involve any public investment for economic development other than improving the highway transportation system. It will combine with other factors, but will not dominate future, changing economic conditions. The proposed action to improve US 93 from Evaro through Polson will support continuing economic development, consistent with what is expected to occur with a transportation system that provides adequate capacity. The proposed action will support the productive capacity of the existing economy with an adequate transportation system. No estimate of the direct economic impact of the proposed action on the economy has been measured beyond the discussion and analysis that is presented in this section.

National studies have found public investment in highway improvement will combine with, but not dominate, other non-transportation factors to affect regional growth. There are direct user benefits such as reductions of travel time, transportation cost and accidents. Intercity connections provided by highway improvement also are an important factor in regional economic development. Highway access is an important consideration in expansion and location decisions about business facilities such as corporate headquarters, regional offices, research and development facilities, manufacturing plants and distribution centers. Studies of the national interstate highway system indicate businesses providing tourism services are most seriously affected by decisions about highway development, while businesses in the manufacturing and wholesale sectors of the economy are more influenced by non-transportation factors.[27,28]

The potential for economic development is dependent on factors that are not controlled by the highway: Availability of natural resources; proximity to export markets and suppliers; availability of capital for finance; size and training of the labor force; and public policies affecting the general business climate.

Manufacturing of wood products depends on the continued availability of timber from the region's forests. Tourism and recreation depend on Glacier National Park, Flathead Lake and resources available in national forests. Retail trade and services, which have been the sectors of the economy with the most growth in employment and personal earnings, depend on tourism and the growing population. It is expected the services sectors of the economy will continue the recent trends of higher rates of growth than manufacturing and timber in the economy of Lake County and the Flathead Indian Reservation.

Estimates of impacts for local sales, earnings and employment due to changes in travel patterns of drive-through travelers were not quantitatively measured for either the No Action or the existing alignment (Except Arlee, Ronan and Polson) alternatives. There will not be any change in highway alignment with No Action or the Existing Alignment (Except Arlee, Ronan and Polson). Although increasing traffic congestion will be expected to redistribute economic growth associated with drive-through travelers, the redistribution is expected to occur primarily within the area from Evaro through Polson.

Sections 7.5.4, 7.5.5 and 7.5.6 present quantitative estimates of changes in local sales, earnings and employment for the communities of Arlee, Ronan, and Polson. In these communities, highway alignments are being considered that could change the boundaries of each community's local trade area for business activity associated with drive-

[27]Transportation Research Board, Transportation Research Record 812. Interstate Highway System and Development in Nonmetropolitan areas.

[28]Eno Transportation Foundation, Inc., Westport Connecticut. Measuring Economic Development Benefits for Highway Decision-making: The Wisconsin Case. Weisbrod and Beckwith. Transportation Quarterly, Volume 46, No. 1, January 1992.

through travelers. Appendix E presents the analysis of changes in expenditures by drive-through travelers for Arlee, Ronan and Polson.

Businesses most susceptible to a decrease in drive-through trade will be highway-oriented establishments such as eating and drinking establishments, gasoline and convenience stores, motels and camping facilities, specialty retail stores and businesses providing recreation, entertainment, personal, and repair services.

7.5.1. Impacts Common to All Alternatives

7.5.1.1. Regional Economic Development and Tourism

All alignment alternatives and lane configuration alternatives, including No Action, will have US 93 continue to operate and provide support for economic development and tourism. Improvement of the highway will not be a factor that can be separated from other factors that are responsible for changing patterns of economic development in the area and throughout Montana.

All alternatives, including No Action, will have little influence on the number of nonresident visitors to northwestern Montana. Highway improvement will reduce travel time, improve convenience and increase access to parks and recreation activity. (Section 7.15)

All alternatives, including No Action, will require public expenditure for operations and maintenance. All alternatives, except No Action, will result in public expenditure for operation of a wider highway that requires maintenance of more pavement than the current facility; Lane Configurations B, C and D will operate more efficiently and with less deterioration of pavement because traffic is dispersed over a wider area of pavement. No Action will require increased maintenance due to concentration of increasing volume of traffic on the existing width of pavement.

Road widening will change the design of business driveways, and spaces will be removed from parking lots. Businesses located close to the highway and businesses with small parking lots will be most affected by these changes. Displaced businesses may have difficulty finding equivalent space along US 93.

All alternatives, including No Action, will not substantially change patterns of local and regional expenditure by residents of the area. Lost sales attributable to highway alignments or to business displacement and changes in driveways or removal of parking spaces will be regained by other local and regional businesses. Local residents will continue current patterns of local and regional expenditure between the area and Missoula and Kalispell, the region's major trade centers.

7.5.1.2. Reductions of Taxable Valuation, Property Taxes and Agricultural Production Value with Conversion of Land to Highway Right-of-Way.

Taxable Valuation and Property Taxes

The analysis of the impact of highway improvement on local property tax revenues is limited to estimating the effects of converting privately-owned land to highway ROW. The impact is expected to be greatest for the alignments which widen existing highway corridors. Conversion of private lands to highway ROW will have minor effects on local tax bases. (Section 7.2)

No Action will not convert land to highway ROW. For the existing alignment, including the highway through Arlee, Ronan and Polson, Lane Configuration D will have the greatest effect on the local tax base, reducing taxable value by $9,500 and annual revenue from property taxes by $2,800. Lane Configuration C will reduce taxable value by $5,700, followed by Lane Configuration B ($3,800) and Lane Configuration A ($1,600). Lane Configuration

C will reduce annual revenue from property taxes by $1,700, followed by Lane Configuration B ($1,100) and Lane Configuration A ($500). Compared with Lane Configuration D, Lane Configurations A, B and C will result in reductions of taxable value and annual property taxes that are generally lower by 20, 40 and 60%, respectively.[29] At Arlee, Ronan and Polson, the alignments will require more conversion of land to highway ROW, and they will have a greater reduction in taxable value and property taxes than the existing alignment through the communities.

At Arlee, Lane Configuration B on Alignment 3 will reduce taxable value by $950 and annual property taxes by $300, and it will reduce taxable value by $650 and annual property taxes by $200 on Alignment 2. At Ronan, Lane Configuration B on Alignment 4 will reduce taxable value by $4,200 and annual property taxes by $1,100, and it will reduce taxable value and annual property taxes by $3,900 and $1,000, respectively, on Alignment 3. At Polson, Lane Configuration B on Alignment 2 will reduce taxable value by $4,100 and annual property taxes by $1,300, and it will reduce taxable value by $900 and annual property taxes by $300 on Alignment 3. At Arlee, Ronan and Polson, the maximum reduction of taxable value and annual property taxes with alignments will be higher than the existing alignment by 60, 1,400 and 440%, respectively.[30]

With Lane Configuration B, the reduction in taxable value will be less than 0.1% of total taxable valuation for both Lake and Missoula counties.[31]

Agricultural Production Value

The analysis of the impact of highway improvement on local agricultural production value is limited to estimating the effects of converting agricultural land to highway ROW. The impact is expected to be greatest for the alignments which widen existing highway corridors. (Section 7.2)

No Action will not convert agricultural land to highway ROW. There will be continued conflicts between agricultural operations and traffic on US 93. The existing alignment outside Arlee, Ronan and Polson will displace agricultural land that consists primarily of agricultural cropland and rangeland, with some land used for seed potato farming between Pablo and Polson. Lane Configurations A, B, C and D will displace 68, 139, 208 and 306 acres, respectively. The annual production values are estimated to be $24,800, $42,400, $58,600, and $88,200 for Lane Configurations A, B, C and D, respectively.[32]

At Arlee, Alignment 1 will displace between 15 and 33 acres of agricultural land, most of which is used for crop production. The annual production value of the land is estimated to be between $2,800 and $6,100. Alignment 2 will displace between 50 and 90 acres of agricultural land, most of which is used for crop production. The annual production value of the land is estimated to be between $9,300 and $17,700. Alignment 3 will displace between 35 and 72 acres of agricultural land, most of which is used for crop production. The annual production value of the land is estimated to be between $6,400 and $13,200. Alignment 4 will displace between 139 and 192 acres of agricultural land used for crop production and grazing. The annual production value of the land is estimated to be between $17,400 and $24,000.[33]

At Ronan, Alignment 1 will displace between five and 11 acres of agricultural land, most of which is irrigated farm land. The annual production value of the land is estimated to range from $900 to $2,300. Alignment 2 will remove 14 acres of irrigated cropland from production. The annual production of this land is estimated to be $2,800. Alignment 3 will displace between 38 and 61 acres of agricultural land, most of which is used for crop production. The annual production value of the land is estimated to be between $7,600 and $12,600. Alignment 4 will displace

[29]Jim Boyer. U.S. Highway 93 Economic Analysis Technical Report. 1993.
[30]Ibid.
[31]Ibid.
[32]Ibid.
[33]Ibid.

between 59 and 82 acres of agricultural land, most of which is used for crop production. The annual production value of the land is estimated to be between $12,500 and $16,500.[34]

At Polson, Alignment 1 will have minimal impacts on area agricultural operations and productivity. Alignments 2 or 3 will displace an estimated 38 acres of land used for seed potato farming. The value of displaced seed potato production will approach $95,000 a year. The alignments also will displace wheat, barley, and hay production valued at $1,600 per year for Alignment 2 and $4,300 for Alignment 3. Alignment 3 will reduce the value of county cattle production by about $2,500 per year.[35]

Mitigation

The mitigation measures for land use and access control will provide the most appropriate opportunity and strategy to control economic development. (Section 7.2)

Ongoing transportation planning should review the means of transport for passengers and freight. The economic feasibility of developing passenger mass transit and converting freight from trucks to rail will depend on transportation factors associated with national and international conditions. (Appendix B)

~~A review of the needs for a system to manage travel information should be conducted in conjunction with the design and construction of improvements for US 93. The review should evaluate whether visitors centers will be effective in attracting through travelers for day visit and overnight activity. The review should consider options for promoting existing attractions, such as the National Bison Range, Ninepipe National Wildlife Refuge and the CSKT cultural center north of Pablo.~~

~~Management of travel information, including highway signing and mapping, commercial advertising and visitors centers, will promote the availability and location of commercial services.~~

7.5.2. No Action

The volume of traffic will continue to increase, and the travel route through communities will not change. Highway-oriented and nonhighway-oriented businesses will be visible to all traffic.

No Action will require the least physical presence for a highway, but its inadequate capacity for current and future volume of traffic will adversely affect economic conditions. Traffic congestion will increase as a barrier that impedes vehicular and pedestrian access to businesses. Businesses on the highway will be increasingly less comfortable and safe as a result of increased conflicts with traffic.

As traffic demand increases, the highway will become more congested. There will be disruption of the distribution system for local trade and commerce. More expensive and less reliable transportation services will adversely impact industries and businesses that depend on them.

Increased traffic congestion will disrupt the tourism and travel industry. Increasing traffic and congestion will make the area less hospitable for local tourists. As travel becomes more difficult, there will be increased travel time and reduced convenience and safety. The result will be a reduction in the attraction of congested locations for visitors. Travelers will purchase goods and services from businesses more accessible elsewhere along US 93.

Economic estimates of expenditures for drive-through travelers at Arlee, Ronan and Polson assume the communities will not be able to recapture any business sales, earnings and employment lost due to traffic congestion with No

[34]Ibid.
[35]Ibid.

Action. Business operators in Arlee, Ronan, and Polson cite summer traffic congestion restricting customer access. As traffic increases, congestion will further limit access and restrict turning movements within existing business districts.

No Action will encourage more commercial strip development on US 93 outside the existing commercial areas. New businesses will develop new access to the highway away from congested areas. While traffic growth will increase local business sales to highway travelers, increasing congestion will limit the ability of established businesses to fully benefit from the growth. By limiting long-term growth in business sales to drive-through travelers, No Action also will constrain growth in local and regional trade. The indirect economic effects of the lost drive-through trade will be to reduce sales, employment and earnings by businesses serving local and regional residents.

7.5.3. Existing Alignment (Except Arlee, Ronan and Polson)

The proposed action will improve access for local residents to businesses. Lake County's location between Missoula and Kalispell also will improve access for local residents to those larger communities. With past high levels of population growth expected to continue, sales in the area to local and regional residents will continue to grow, but Lake and Missoula County businesses located between Evaro and Polson will continue to lose local and regional trade to Missoula and Kalispell.

All lane configurations will maintain the present patterns of traffic; businesses will remain visible to all local and through traffic. Highway improvement with the four-lane configurations will provide higher traffic capacity and improved access for commercial and industrial activity.

Lane Configuration A (two-lane highway) will have impacts similar to No Action due to the effects of increasing traffic congestion for transportation costs, local and regional trade and the tourism and recreation industry.

Lane Configuration A will be a less-wide physical barrier that restricts access for vehicular and pedestrian traffic to and from businesses along the highway. The barrier effect for businesses with Lane Configuration A will occur as traffic is concentrated in multi-vehicle platoons that increase traffic congestion and reduce space between moving vehicles.

Lane Configurations B, C and D (four-lane highway) will result in a wider roadway, but they will provide more spacing in traffic flow. They will provide better opportunity for access to businesses during periods of peak traffic.

Lane Configurations B, C and D will provide a more efficient transportation system by decreasing traffic congestion. Traffic will be less of a barrier, and there will be improved accessibility for vehicular and pedestrian traffic traveling to businesses. Highway improvement will provide higher traffic capacity and improved access for commercial and industrial activity.

The barrier effect for businesses with Lane Configurations B, C and D will occur as traffic is dispersed across a wider area of highway, increasing the distance required to cross the highway. Lane Configurations B, C and D will have four lanes and result in a wider roadway that places traffic closer to businesses.

Lane Configurations A and B will have designated left-turn bays that provide improved access for vehicles turning into some developed commercial and industrial areas. Lane Configuration C will have a continuous two-way left-turn center median that improves access for vehicles turning into businesses. Lane Configuration D will have either designated left-turn bays that cross the divided, unpaved center median or a system of access control with frontage roads.

Continued growth of the local population will offset the effects of local residents shopping outside the area. The increased highway efficiency for all alternatives, except No Action and Lane Configuration A, will serve the growing local population by providing more convenience for shopping with local businesses.

Improvement of traffic conditions will provide more convenience for current and new residents of the area to travel to places of employment in western Montana's regional trade centers, Missoula and Kalispell. Any increase in employment for local residents, either at locations in the area of the proposed action or in the Missoula and Kalispell areas, will increase potential for local retail sales.

Additional economic development, supported by the highway, will increase revenue obtained with taxes, such as property and income.

The cumulative effects of the proposed action and other highway projects will result in a more efficient highway transportation system that improves the desirability and efficiency of travel for commercial and industrial activity. Such projects include the four-lane segment of US 93 abutting the proposed action between I-90 and Evaro built in 1985-86, improvement during the late-1980s of US 93 north of Polson, and the proposed improvement of US 93 from Somers to Whitefish, which is approximately 50 miles north of the proposed action.

The cumulative effects of highway projects throughout the region will be to reduce travel time and increase convenience for residents of the area to travel to western Montana's regional trade centers, Missoula and Kalispell. The major retail trade centers will continue to attract residents from the area. Purchases outside the area will affect the structure of local trade due to outside competition for volume, selection and price of goods and services.

Mitigation

The mitigation measures for land use (and access control) will provide the most appropriate opportunity and strategy to control patterns of economic development outside established commercial and industrial areas. (Section 7.2)

Access to businesses may be improved by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

~~Communities should increase coordination of marketing and promotional strategies for the local trade area to encourage local residents to shop in their communities.~~

7.5.4. Arlee Alignments

7.5.4.1. Business Sales, Earnings and Employment To Drive-Through Travelers and Local Tourists for All Arlee Alignments

Based on the results of a 1993 survey of businesses at Arlee, current annual sales to drive-through travelers are estimated to be two million dollars for 1992. Sales projections assume an annual rate of growth of three percent.[36]

Alignment 1, with Lane Configurations B and C (four-lane highways), will result in a total of $68 million in sales for the 24-year period 1992 through ~~the design year~~ 2015. Total sales with No Action will be $62.7 million, eight percent less than Alignment 1. Annual sales for No Action are higher than Alignment 1 during the period when construction will occur for Alignment 1. After construction, annual sales for Alignment 1 are higher than No Action, with a margin of 25% in 2015. Lane Configuration A (two-lane highway), after construction, will result in sales similar to No Action.[37] (Appendix E)

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[36]Jim Boyer. Impacts of Changes in Expenditure Patterns By Drive Through Travelers. April 1993.
[37]Jim Boyer. Impacts of Changes in Expenditure Patterns By Drive Through Travelers. April 1993.

With the alignments that will divert through traffic away from existing businesses, by 2015 Alignments 2 and 3 each will result in total sales of $41.9 million, while Alignment 4 will result in total sales of $22.7 million. Total sales for Alignments 2 and 3 will be 62% of Alignment 1 by 2015, and annual sales for Alignments 2 and 3 will be less than Alignment 1 until 2015, reflecting the effects of new businesses on Alignments 2 and 3. Total sales for Alignment 4 will be 33% of Alignment 1 by 2015, and annual sales will continue to be less than Alignment 1 in 2015.[38]

As with sales, earnings and employment will be highest with Alignment 1, followed by No Action and Alignments 2 and 3.

Much of Arlee's tourism trade is associated with special events, for example tribal powwows and rodeos. All alignment alternatives will continue to support events which attract tourists to Arlee.

7.5.4.2. Alignment 1: Existing Alignment

Lane Configurations A and B, with designated left-turn bays, and Lane Configuration C, which will have a continuous two-way left-turn center median, will improve access for vehicles turning into businesses. Lane Configurations B and C will have four lanes and result in a wider roadway that places traffic closer to businesses. None of the lane configurations will have onstreet parking.

All lane configurations will maintain the present patterns of traffic; businesses will remain visible to all local and through traffic. Lane Configuration A will reduce traffic congestion less than Lane Configurations B and C.

Lane Configuration A will not displace any commercial buildings. Lane Configurations B, C and D may displace five, six and 10 commercial buildings, respectively. (Section 7.18)

Lane Configuration A (two-lane highway) will have impacts similar to No Action due to the effects of increasing traffic congestion for transportation costs, local and regional trade and the tourism and recreation industry.

Lane Configurations B and C will support long-term growth in local employment and earnings. Improvement of traffic flow and reduction of congestion will cause changes in patterns of patronage and shifts in employment and earnings among local businesses.

7.5.4.3. Alignments 2, 3 and 4

No commercial businesses are currently located along Alignments 2, 3 or 4. In the initial years of new roadway operation, US 93 travelers desiring to make purchases will either remain on the existing US 93 through Arlee, or make purchases from businesses located elsewhere along US 93.

All lane configurations will result in a new roadway through the rural areas on the west or east edges of the community. They will divert through traffic from the developed commercial area and reduce the amount of traffic for which businesses are visible.

The southern and northern end points of Alignments 2 and 3 will be within one mile and one-half mile of Arlee, respectively. The southern and northern end points of Alignment 4 will be farther than two miles from Arlee.

There will be a smaller volume of traffic in Arlee's business district. The reduction of through traffic will reduce congestion and improve access for local traffic in the business district.

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[38]Ibid.

Without access control on Alignments 2 and 3, approaches from residential streets in the areas of Arlee west or east of the current highway could be extended to the new highway. There could be new commercial and industrial development at the new highway approaches, within 1,000 feet of the existing business district.

Alignments 2, 3 and 4 will not displace any existing commercial or industrial buildings. (Section 7.18)

The Arlee economy will lose sales as a result of the rerouting of travelers away from existing businesses. Unless prohibited by land use controls, new highway-oriented businesses will slowly develop along Alignments 2, 3 and 4. New business development is assumed to recapture all lost trade within 15 years.

Mitigation

All Arlee Alignments

The mitigation measures for land use (and access control) will provide the most appropriate opportunity and strategy to control patterns of economic development outside established commercial and industrial areas. (Section 7.2)

Arlee Alignment 1

Access to businesses may be improved by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

Arlee Alignments 2, 3 and 4

Provide access to businesses with normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

If Alignment 2, 3, or 4 is selected, designate the existing alignment through Arlee as a US 93 business route. Implement a highway signing program to inform motorists of the availability of local commercial services.

Construct the end points of the highway alignment with approaches that serve as a "gateway" by providing visibility of the community for through traffic. Highway alignments that are constructed with approaches within one-half mile of the original business district provide desired visibility of businesses in the community for local and through traffic. Highway alignments that are located farther than one mile from the business district provide less than desired visibility of businesses.[39]

~~Management of travel information and development of an institutional commercial highway signing (billboard) program will provide awareness and visibility for commercial services. (Section 7.5.1.1)~~

7.5.5. Ronan Alignments

7.5.5.1. Business Sales, Earnings and Employment To Drive-Through Travelers and Local Tourists for All Ronan Alignments

Based on the results of a 1993 survey of businesses at Ronan, current annual sales to drive-through travelers are estimated to be seven million dollars for 1992. Sales projections assume an annual rate of growth of three percent.[40]

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[39]Highway Research Board Bulletin. Predicting the Economic Impact of Alternate Interstate Route Locations. Stroup, R.; Vargha, L.; and Main, R. 1962.

[40]Jim Boyer. Impacts of Changes in Expenditure Patterns By Drive Through Travelers. April 1993.

Alignment 1, with Lane Configurations B and C (four-lane highways), will result in a total of $228.5 million in sales for the 24-year period 1992 through ~~the design year~~ 2015. Total sales with No Action will be $211.1 million, eight percent less than Alignment 1. Annual sales for No Action are higher than Alignment 1 during the period when construction will occur for Alignment 1. After construction, annual sales for Alignment 1 are higher than No Action, with a margin of 18% in 2015. Lane Configuration A (two-lane highway), after construction, will result in sales similar to No Action.[41] (Appendix E)

With the alignments that will divert through traffic away from existing businesses, Alignment 2 will result in total sales of $213.7 million, while Alignments 3 and 4 each will result in total sales of $174.1 million by 2015. Total sales for Alignment 2 will be 94% of Alignment 1 by 2015, and annual sales will equal Alignment 1 in 2010. Total sales for Alignments 3 and 4 will be 76% of Alignment 1 by 2015, and annual sales for Alignments 3 and 4 will equal Alignment 1 by 2015, reflecting the effects of new businesses on Alignments 3 and 4.[42]

As with sales, earnings and employment will be highest with Alignment 1, followed by Alignment 2, No Action and Alignments 3 and 4.

New businesses are expected to develop slowly along Alignments 2, 3 and 4. Eventually, new businesses will reclaim most of lost sales, and new business development is assumed to recapture all lost trade within 10 years for Alignment 2 and within 15 years for Alignments 3 and 4.

Much of Ronan's tourism trade is associated with fishing, hunting and wildlife viewing in the area's wildlife refuges and forests. All alignment alternatives will continue to support recreation activities which attract tourists to Ronan.

7.5.5.2. Alignment 1: Existing Alignment

Lane Configurations A and B will have designated left-turn bays, and Lane Configuration C will have a continuous two-way left-turn center median to improve access for vehicles turning into businesses. Lane Configurations B and C will have four lanes and result in a wider roadway that places traffic closer to businesses. None of the lane configurations will have onstreet parking.

All lane configurations will maintain the present patterns of traffic; businesses will remain visible to all local and through traffic. Lane Configuration A will reduce traffic congestion less than Lane Configurations B and C.

Four or five commercial buildings will be displaced. (Section 7.18)

Lane Configurations B and C will support long-term growth in employment and earnings. Alignment 1 is expected to facilitate long-term growth in employment and proprietor and employee earnings. Improvement of traffic flow and reduction of congestion will cause changes in patterns of patronage with shifts in employment and earnings among local businesses.

7.5.5.3. Alignment 2: One-Way Couplet

Ronan Alignment 2 will maintain the roadway on the existing alignment for northbound traffic and provide an improved roadway for southbound traffic on First Avenue Southwest, approximately one block west of the existing alignment.

Alignment 2 will divert the southbound lanes of through traffic from the developed commercial area on the existing alignment and reduce the amount of traffic for which existing businesses are visible. There will be a smaller volume

[41]Jim Boyer. Impacts of Changes in Expenditure Patterns By Drive Through Travelers. April 1993.
[42]Ibid.

of traffic on the existing alignment of US 93, and access will improve for existing businesses. The reduction of through traffic will reduce congestion and improve access for local traffic to the business district. The businesses on the existing alignment will remain visible only to traffic on the northbound route of the couplet.

Both the northbound and southbound routes of the couplet will improves access for vehicles turning into businesses. Neither the northbound or southbound route of the couplet will have onstreet parking.

The southern end point of Alignment 2 will be within one-half mile of Ronan, and the northern end point will be near the northern edge of Ronan's commercial area.

There will be a smaller volume of traffic on the existing alignment. The reduction of through traffic will reduce congestion and improve access for local traffic in the business district. There could be new commercial and industrial development in the existing residential and commercial areas of First Avenue Southwest, as well as the residential streets that connect the existing alignment and First Avenue Southwest.

Alignment 2 will displace five or six businesses.

Alignment 2 will slow growth in area employment. The lost employment will be recovered when sales to drive-through tourists are recaptured by new local businesses. Improvement of traffic flow, reduction of congestion and new businesses will change patterns of patronage and shift employment and earnings among businesses.

7.5.5.4. Alignments 3 and 4

No commercial businesses are currently located along Alignments 3 or 4. In the initial years of new roadway operation, US 93 travelers desiring to make purchases will either remain on the existing US 93 through Ronan, or make purchases from businesses located elsewhere along US 93.

All lane configurations will result in a new roadway through the rural areas on the west edge of the community. They will divert through traffic from the developed commercial area and reduce the amount of traffic for which businesses are visible. There will be a smaller volume of traffic on the existing alignment of US 93, and access will improve for existing businesses. The reduction of through traffic will reduce congestion and improve access for local traffic to the business district.

The southern end points of Alignments 3 and 4 will be within one-half mile and one mile of Ronan, respectively. Their northern end points will be approximately one mile from Ronan.

There will be a smaller volume of traffic in Ronan's business district. The reduction of through traffic will reduce congestion and improve access for local traffic in the business district.

Without access control on Alignments 3 and 4, approaches from residential streets in the area west of Ronan could be extended to the new highway. There could be new commercial and industrial development at the new highway approaches, within one mile of the existing business district.

Alignments 3 and 4 will not displace any commercial or industrial buildings. (Section 7.18)

The Ronan economy will lose sales as a result of the rerouting of travelers away from existing businesses. Unless prohibited by land use controls, new highway-oriented businesses will slowly develop along Alignments 3 and 4.

Alignments 3 and 4 will slow growth in Ronan area employment and earnings. Changes in traffic flow, reduction of congestion and new businesses will change patterns of patronage among local businesses and shift employment and earnings among businesses.

Mitigation

All Ronan Alignments

The mitigation measures for land use (and access control) will provide the most appropriate opportunity and strategy to control patterns of economic development outside established commercial and industrial areas. (Section 7.2)

Ronan Alignments 1 and 2

Access to businesses may be improved by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

Ronan Alignments 3 and 4

Provide access to businesses with normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

If Alignment 3 or 4 is selected, designate the existing alignment through Ronan as a US 93 business route. Implement a highway signing program to inform motorists of the availability of local commercial services.

Construct the end points of the highway alignment with approaches that serve as a "gateway" by providing visibility of the community for through traffic. Highway alignments that are constructed with approaches within one-half mile of the original business district provide desired visibility of businesses in the community for local and through traffic. Highway alignments that are located farther than one mile from the business district provide less than desired visibility of businesses.[43]

~~Management of travel information and development of an institutional commercial highway signing (billboard) program will provide awareness and visibility for commercial services. (Section 7.5.1.1)~~

7.5.6. Polson Alignments

7.5.6.1. Business Sales, Earnings and Employment To Drive-Through Travelers and Local Tourists for All Polson Alignments

Based on the results of a 1993 survey of businesses at Polson, current annual sales to drive-through travelers are estimated to be five million dollars for 1992. Sales projections assume an annual rate of growth of three percent.[44]

Alignment 1, with Lane Configurations B, C and D (four-lane highways), will result in a total of $157.2 million in sales for the 24-year period 1992 through ~~the design year~~ 2015. Total sales with No Action will be $130.2 million, 18% less than Alignment 1. Annual sales for No Action are higher than Alignment 1 during the period when construction will occur for Alignment 1. After construction, annual sales for Alignment 1 are higher than No Action, with a margin of 36% in 2015. Lane Configuration A (two-lane highway), after construction, will result in sales similar to No Action.[45] (Appendix E)

With the alignments that will divert through traffic away from existing businesses, Alignment 2 will result in total sales of $141.9 million, while Alignment 3 will result in total sales of $132.2 million by 2015. Total sales for

[43]Highway Research Board Bulletin. Predicting the Economic Impact of Alternate Interstate Route Locations. Stroup, R.; Vargha, L.; and Main, R. 1962.

[44]Jim Boyer. Impacts of Changes in Expenditure Patterns By Drive Through Travelers. April 1993.

[45]Ibid.

Alignment 2 will be 90% of Alignment 1 by 2015, and annual sales will equal Alignment 1 in 2010. Total sales for Alignment 3 will be 84% of Alignment 1 by 2015, and annual sales for Alignments 3 will equal Alignment 1 by 2015, reflecting the effects of new businesses on Alignments 3 and 4.[46]

As with sales, earnings and employment will be highest with Alignment 1, followed by Alignment 2, Alignment 3 and No Action.

New businesses are expected to develop slowly along Alignments 2 and 3. Eventually, new businesses will reclaim most of lost sales, and new business development is assumed to recapture all lost trade within 10 years on Alignment 2 and 15 years on Alignment 3.

7.5.6.2. Alignment 1: Existing Alignment

Lane Configurations A and B will have designated left-turn bays, and Lane Configuration C will have a continuous two-way left-turn center median to improve access for vehicles turning into businesses. Lane Configurations B and C will have four lanes and result in a wider roadway that places traffic closer to businesses. None of the lane configurations will have onstreet parking.

All lane configurations will maintain the present patterns of traffic; businesses will remain visible to all local and through traffic. Lane Configuration A will reduce traffic congestion less than Lane Configurations B and C.

Alignment 1 will displace three buildings that are occupied by four retail businesses. (Section 7.18)

By routing traffic along Flathead Lake, Alignment 1 will continue to provide short-term visitation to Polson as a resort at the southern end of Flathead Lake.

Alignment 1 could discourage new businesses and attractions which could induce longer-term visitations. Lane Configurations B and C will occupy additional lake frontage and highway frontage, and will diminish the land area available for destination resort and convention center development.

Alignment 1 is expected to support growth in employment and proprietor and employee earnings. Improvement of traffic flow and reduction of congestion will change patterns of patronage and shift employment and earnings among local businesses.

7.5.6.3. Alignments 2 and 3

No commercial businesses are currently located along Alignments 2 or 3. In the initial years of new roadway operation, US 93 travelers desiring to make purchases will either remain on the existing US 93 through Polson, or make purchases from businesses located elsewhere along US 93.

Alignments 2 and 3 will not displace any commercial or industrial buildings. (Section 7.18)

The Polson economy will lose sales as a result of the rerouting of travelers who will otherwise make purchases on their way through the city. Unless prohibited by land use controls, new highway-oriented businesses will eventually develop along Alignments 2 and 3. For Alignment 2, new business development is assumed to recapture all of lost trade within 10 years. Because Alignment 3 is more removed from the city, new business development is likely to occur more slowly. For Alignment 3, it is assumed that it will take 15 years to recapture the lost trade.

[46]Ibid.

The rerouting of drive-through traffic will have both positive and negative effects on growth of local tourism. Alignments 2 and 3 will provide highway travelers less visual exposure to Flathead Lake. This visual association is cited as a valuable advertisement for existing resort and recreation type businesses. Tourists familiar with Polson will continue to use the existing highway to access resorts and other visitor attractions.

Reductions in noise, air pollution and the physical and psychological barriers created by intense traffic flows will improve the aesthetics of the Polson lake front area for tourists. Improved conditions may encourage visitors to stay longer and spend more in Polson. The improved aesthetics also may make business locations along the old highway more attractive for destination resort and convention center developments. Highway construction west of Polson will make river front areas more accessible to tourists and may make these areas viable for resort type investments. New resort development will expand the overall tourist industry for the Polson economy.

Alignments 2 and 3 will split agricultural parcels. The splitting of agricultural parcels will increase the time and reduce the convenience of farming and ranching activities.

Alignment 2 routes traffic along the west side of the Polson city limits and will provide highway travelers with serviceable access to downtown Polson businesses. Alignment 3, which will be farther west, will provide less convenient access to the downtown area.

Alignments 2 and 3 will slow growth in area employment. The lost employment will be recovered when sales to drive-through tourists are recaptured by new local businesses. This will occur more rapidly if Alignment 2 is developed. Change in traffic flow and reduction of congestion will change patterns of patronage and shift employment and earnings among businesses.

Mitigation

All Polson Alignments

The mitigation measures for land use (and access control) will provide the most appropriate opportunity and strategy to control patterns of economic development outside established commercial and industrial areas. (Section 7.2)

Polson Alignment 1

Access to businesses may be improved by normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

Polson Alignments 2 and 3

Provide access to businesses with normal highway design and traffic control features, such as sidewalks, pedestrian crosswalks, bicycle lanes, signing and speed control.

If Alignment 2 or 3 is selected, designate the existing alignment through Polson as a US 93 business route. Implement a highway signing program to inform motorists of the availability of local commercial services.

Construct the end points of the highway alignment with approaches that serve as a "gateway" by providing visibility of the community for through traffic. Highway alignments that are constructed with approaches within one-half mile of the original business district provide desired visibility of businesses in the community for local and through

traffic. Highway alignments that are located farther than one mile from the business district provide less than desired visibility of businesses.[47]

~~Encourage public and private investment in local attractions, such as shoreline beach development.~~

~~Management of travel information and development of an institutional commercial highway signing (billboard) program will provide awareness and visibility for commercial services. (Section 7.5.1.1)~~

[47]Highway Research Board Bulletin. Predicting the Economic Impact of Alternate Interstate Route Locations. Stroup, R.; Vargha, L.; and Main, R. 1962.

7.6. PEDESTRIANS AND BICYCLISTS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.6.1. Impacts Common to All Alternatives

Vehicle traffic and pedestrian/bicycle traffic volumes have been increasing steadily during recent years and are expected to continue to grow. US 93 will continue to be shared by these different modes of travel -- conflicts will occur and must be managed to ensure the safety of the traveling public and, as much as practical, preserve and enhance convenience, efficiency and comfort. Accommodation and encouragement of non-motorized travel is an important goal which will help reduce energy consumption; reduce the demand for motorized vehicle travel and the need for future expansion of highways and streets; and reduce other environmental impacts such as noise and air pollution.

Participants in the public scoping process have indicated that developing bicycle facilities along the highway may allow it to become "a nationally recognized bike destination" and create a "low impact draw for tourism." The location of the proposed action in relation to Glacier National Park, Flathead Lake and other recreation opportunities contributes to the desirability of bicycle facilities in this area.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) recognizes the transportation value of bicycling and walking, and offers mechanisms to increase consideration of bicyclists' and pedestrians' needs within the National Intermodal Transportation System (NITS). ISTEA offers opportunities to enhance state and local bicycle and pedestrian programs. Federal-aid funding is available from a number of ISTEA programs for these efforts. Generally, ISTEA encourages states to determine how their share of federal monies will be spent. In accordance with requirements of ISTEA, MDT has established a Bicycle and Pedestrian Coordinator position for promoting and facilitating the increased use of non-motorized modes of transportation.

7.6.2. No Action

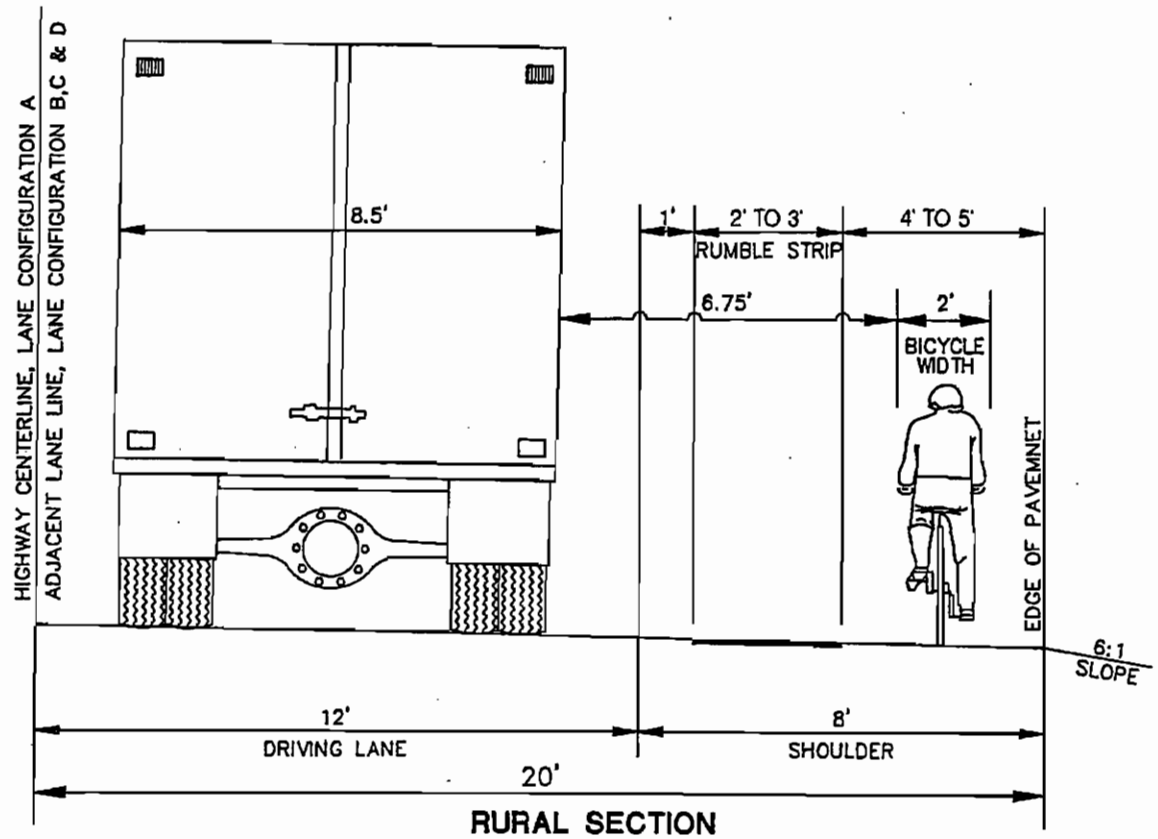
With No Action, there will be no improvement for pedestrian and bicycle travel along the highway or in the communities. Vehicle traffic volume is expected to continue to increase on the highway, with no substantial improvement in facilities, which will result in increased difficulty for pedestrians and bicyclists to safely cross the highway and travel along it. Safety, comfort and convenience for non-motorized travel will be adversely impacted. Opportunities for substantial improvement in bicycle and pedestrian facilities will not be realized.

7.6.3. Existing Alignment (Except Arlee, Ronan and Polson)

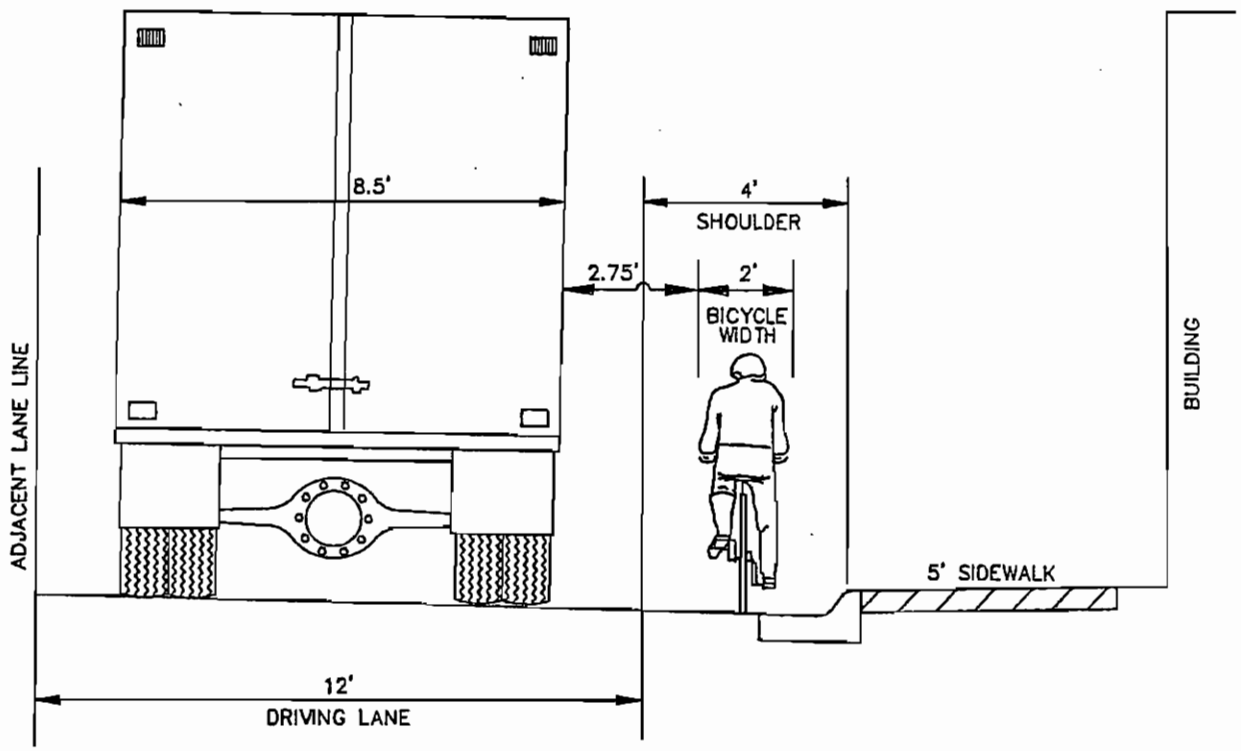
Bicyclists

All of the lane configurations under consideration will include eight-foot paved shoulders (Figure 5.1-4). In the paved shoulders, a two- or three-foot "rumble strip"[48] will be placed one foot from the edge of the driving lane leaving four to five feet of paved roadway surface. It will be effectively separated from highway traffic by the rumble strip, and it will be suitable for bicycle travel (Figure 7.6-1).

[48]Rumble strips consist of deep grooves, cut perpendicular to the highway into the asphalt or concrete paved shoulders. They are designed to create a loud noise and vibration when a vehicle, travelling at highway speeds, passes over them. This system has been effective in reducing accidents because it alerts a sleepy or inattentive driver that the vehicle is leaving the roadway.



RURAL SECTION



LANE CONFIGURATION C, ARLEE AND RONAN

BICYCLES ON SHOULDERS **FIGURE 7.6 - 1**

A four- to five-foot separation between bicycles and trucks traveling at highway speeds is generally considered desirable. As indicated on Figure 7.6-1, the eight-foot shoulder will provide 6.75 feet of separation. This configuration should adequately and safely accommodate all utilitarian bicycle trips and some recreational bicycle trips along rural sections of the highway. It is in accordance with the AASHTO Bicycle Guide.[49] Where bridge widening or reconstruction is required, the eight-foot shoulder will be continued over the bridge. A petition was received during the public scoping process, signed by 129 individuals with addresses mostly in Lake County, which stated:

> "We, the undersigned residents of the Flathead Indian Reservation and the surrounding area, believe a separate path should be developed along the existing US 93 route for alternative, no-motorized transportation. We feel such a path, physically separated from vehicles moving at high speeds, is the safest alternative for accommodating pedestrian, bicyclist and equestrian uses along the highway (an unpaved area would run alongside the path to accommodate horses). In addition to improving highway safety, this alternative promotes clean, energy-efficient transportation, a goal mandated by the federal government for transportation facility development. This path would also create a valuable fitness facility for local and regional residents and could promote related economic development for reservation communities."

The AASHTO Bicycle Guide indicates that using a path for bicycles and horses creates an unsatisfactory and possibly dangerous mix. Horses startle easily and may kick out suddenly if they perceive bicyclists as a danger. A bicycle path and a horse path are also incompatible in their surface design requirements -- bicycles function best on hard surfaces while horses function best on soft surfaces. With any of the lane configurations equestrians will be allowed to travel in the area between the roadway pavement and the edge of ROW (an area 50 feet wide or more in many areas) if the horses are properly controlled and restrained.

Providing for bicyclists on the shoulder is generally more accommodating in rural circumstances and may be better than providing a separate parallel bike path in rural areas between communities for the following reasons:

- Unless they are provided on both sides of the highway, they will require one direction of bicycle traffic to ride against motor vehicle traffic.
- When the path ends, bicyclists going against traffic will tend to continue to travel on the wrong side of the road.
- The separate path will require additional ROW and will cover more land with pavement, which will increase environmental impacts.
- US 93 from Evaro through Polson is important and, as such, receives a high priority for maintenance. The highway, including the shoulders, receives prompt repairs, frequent sweeping and early snow removal. A separate bicycle path will be difficult and more expensive to maintain and, compared with the highway, will necessarily receive a much lower priority when allocating limited maintenance funds and resources.
- Many bicyclists will use the roadway instead of the bicycle path because they have found the roadway to be safer, more convenient or better maintained. Bicyclists using the roadway are then often subjected to harassment by motorists who feel that in all cases bicyclists should be on the path instead.

[49]American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities, August 1991.

- Bicyclists using the bicycle path will be required to stop or yield at all cross streets and driveways, while bicyclists using the roadway will have priority over cross or entering traffic because they have the same right of way as motorists on the highway.

- Stopped cross street motor vehicle traffic or vehicles exiting side streets or driveways may block the bicycle path crossing.

Pedestrians

The eight-foot shoulders will provide substantial improvement in safety and comfort for pedestrians wishing to travel along US 93 in rural areas between communities. As indicated in Section 6.6, only limited numbers of pedestrians travel along or across US 93 in rural areas. In general, other than the wider, paved shoulders, no pedestrian facilities are required or planned in rural areas of the highway.

School officials indicate that the best facilities for school buses that must stop along the highway will include turnout lanes on the right side of the highway. No facilities away from the highway are needed. School officials indicate that if a four-lane highway is constructed, school children will not be allowed to enter or leave school buses on a side of the highway opposite to the side on which they live.[50]

At the "Mule Palace" area near Milepost 9.9, events are provided that attract a large number of spectators and create unsafe pedestrian crossings of US 93. These crossings occur because there is inadequate parking at the facility on the same side of the highway. Vehicles park along the highway and on land on the opposite side of the highway, and occupants then walk across the highway, often at night. These conditions are expected to continue with any of the lane configurations.

No additional pedestrian facilities are proposed at Evaro, Ravalli, St. Ignatius or Post Creek.

Mitigation

Discussions and negotiations will be conducted by MDT with owners of the "Mule Palace" area near Milepost 9.9 to develop and implement a mechanism for accommodating all parking in areas off the highway ROW and on the same side of the highway as the facility. Parking on highway shoulders in this area (or on any other rural highway), for other than emergency purposes, is prohibited and compliance should be enforced. Providing a pedestrian crosswalk is not considered desirable in this area because it is a rural highway with a 55 mph speed limit.[51] Drivers on the highway are used to traveling at highway speeds and will not expect or anticipate the crosswalk. The crosswalk will be used infrequently and some local drivers will begin to not notice it. With the required reconstruction of the bridge over the railroad, approximately 500 feet south of the Mule Palace, it may be desirable to incorporate a pedestrian path under the highway. It may be difficult, without fencing or other barriers, to get people to walk this far when they can more quickly go straight across the highway.

Shoulders will be widened where appropriate to provide an area for school buses to pull out of the through traffic lanes and allow students to safely enter and leave the buses.

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[50] Lake and Sanders County Superintendents Meeting, 11 September 1995, conducted by Joyce Decker Wegner, County Superintendent of Schools.

[51] After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

7.6.4. Arlee and Ronan Alternate Alignments

The following shoulder widths and other features are anticipated if the highway is constructed through Arlee or Ronan (Alignment 1):

- Lane Configuration A will include six- to eight-foot shoulders, concrete curb and gutter and concrete sidewalk placed against the back of the curb. No parking will be allowed on the shoulders.

- Lane Configurations B and C will include, because of limited space available for roadway construction in Arlee or Ronan without major relocation of existing businesses, only three- to four-

  foot shoulders. Concrete curb and gutter and concrete sidewalk placed against the back of the curb will also be constructed.

- Lane Configuration D is not practical, feasible or desirable in Arlee or Ronan because of the limited construction space available without major relocations and because of the many vehicle access points and crossings.

Bicyclists

If Lane Configuration A is constructed, as indicated above, the wider shoulders will be continued through the communities, which will adequately allow for bicycles.

If Lane Configurations B or C are constructed, the area available for bicycle travel will be restricted. The facility may accommodate utilitarian travel through town, but probably will not be suitable for recreational trips.

If Alignment 2, the one-way couplet, is constructed in Ronan, it is anticipated that curb and gutter, sidewalk and six- to eight-foot paved shoulders will be constructed for each direction of travel, which should provide adequate accommodations for bicyclists traveling through the community.

If Arlee Alignments 2, 3 or 4, or Ronan Alignments 3 or 4 are constructed, it is anticipated the highway will be similar to the rural segments of the highway and the eight-foot paved shoulder will be constructed and will adequately accommodate most bicycle traffic traveling through the area as described in Section 7.6.3.

Mitigation

Consideration should be given, if Lane Configuration B or C is constructed, to designating and signing for a bicycle route on existing parallel streets in the communities to allow an alternate route for those not comfortable with the narrower shoulders. Generally, however, bicycle traffic cannot be diverted to a less direct alternate route unless the favorable factors outweigh the inconvenience to the bicyclist.

Where designated bicycle routes or bicycle paths connect with the highway (such as the bicycle routes mentioned above or the paved bicycle path on the north edge of Arlee), proper design of intersections will be important.

Consideration should be given to providing designated bicycle routes to and from any new alignment to: 1) provide access to the highway for bicycle travel to and from the community, and 2) provide an alternate route through the community that may be, because of lower traffic volume and speed, more quiet and aesthetically pleasing.

Pedestrians

If Alignment 1 is constructed through Arlee and Ronan, most of the existing adverse conditions for pedestrians will continue and will become more severe as traffic volume increases.

Lane Configuration B or C through Arlee and Ronan will have the following effects on pedestrians crossing US 93:

- The wider roadway will require more time to cross which will increase the time pedestrians are exposed to highway traffic.

- The four-lane roadway will disperse the motor vehicle traffic, creating wider gaps in the traffic stream and therefore more time for pedestrians to cross.

These two effects tend to offset each other, but the net effect of a wider roadway with more traffic lanes is expected to be a minor increase in the degree of difficulty for pedestrians to cross the roadway.

Alignments around Arlee (2, 3, and 4) and Ronan (3 and 4) should substantially reduce the number of pedestrian crossings. The number of children that must cross US 93 to walk to school will be substantially reduced. Crossings in these alignments will, however, be across higher speed highways (55 mph versus 35 and 25 mph in Arlee and Ronan).[52]

Residents in Arlee indicated that some school children living west of town will still be required to walk across Alignment 2 and that many children walk across the area of Alignment 2 to fish and swim in Finley Creek in the summer.

Though school officials have expressed concern for children crossing the highway as it passes through Arlee and Ronan, they have not indicated Alignments 2, 3 or 4 will be desirable or will help reduce accidents. In some cases, representatives of the schools and other residents have indicated more concern for these alignments because they will be designed for higher speed traffic and, though the number of school children crossing the highway will be reduced, they feel the higher speeds will present a more hazardous situation for pedestrian crossings.

Alignment 3 is located between Arlee and the tribal pow-wow and rodeo grounds. Residents and representatives of CSKT indicate that during functions at these facilities, there are many pedestrians that travel between these areas and will be required to cross US 93 if Alignment 3 is constructed.

Alignment 2 in Ronan (the one-way couplet) will create two sections of US 93 through the town which will create additional pedestrian crossings. Each crossing, however, should be much easier because pedestrians will be required to cross only two lanes going one direction.

Mitigation

As indicated in Chapter 10, the Arlee community team has recommended that if Alignment 1 is constructed, the flashing warning light at "B" Street (Butch Larsen/Taelman) be replaced with a full traffic signal to include pedestrian activated phases and advance warning signs with flashing lights. The team indicated that education of school children will be important to encourage them to always cross there.

[52]After Congress repealed the national speed limit of 65 mph on interstates and 55 mph on other highways in 1995, Montana automatically reverted to its former law that has the "basic rule." A driver may not drive at speeds exceeding what is "reasonable and prudent" for traffic, road and weather conditions.

The Ronan community team (Chapter 10) has recommended, if Alignment 1 is constructed, that in addition to the signal at Round Butte Road, traffic signals, with pedestrian activated phases, be installed at Buchanan Street (three blocks south of Round Butte Road) and at Eisenhower Street (six blocks south of Round Butte Road). The team feels additional signals are needed at these intersections because of the large number of school children that cross. They indicate that it is difficult, because of the location of schools and the layout of the town, to get children to cross at the existing signal. Team members are aware that, as with all intersections for the proposed action, before signals are installed, a complete study and warrant analysis must be conducted to ensure the installation will improve safety overall and not create a more serious safety problem somewhere else. For example, installation of a signal could increase rear-end type accidents on US 93. Also, if the signal is placed in an area where it is not expected by and highly visible to drivers on the highway, some drivers might not notice it. This could place pedestrians crossing the highway, expecting to be protected by the pedestrian phase, at even greater risk than before.

If Alignment 2, 3 or 4 in Arlee or Alignment 3 or 4 in Ronan are constructed, it will be important to place pedestrian crossings at appropriate, high-use intersections.

Pedestrian overpasses are not considered desirable because they will require long access ramps (approximately 300 feet long) which will be difficult to place in the Arlee and Ronan areas without substantial additional environmental impacts, and it will be difficult to encourage or require pedestrians to use the overpass because it will be much more convenient for them to cross directly over the highway.

Pedestrian underpasses also are not considered desirable because they will create a safety and security problem. This is because the area under the highway will not be visible to law enforcement personnel and others. They also will be difficult to drain.

7.6.5. Pablo, Specific Concerns

Bicyclists

With any of the lane configurations, it is anticipated the eight-foot shoulders will be continued through the Pablo area and will adequately accommodate bicyclists, as described in Section 7.6.3.

Mitigation

Where existing or future designated bicycle routes or bicycle paths connect with the highway, proper design of intersections will be important.

Pedestrians

With any of the lane configurations, the potential for conflicts and accidents involving pedestrians will continue and will increase as traffic volume increases.

Mitigation

Mitigation measures have been suggested by the Pablo community team to better accommodate pedestrians crossing US 93 in Pablo near the tribal complex, the high school and the college: (Chapter 10)

- With any of the lane configuration alternatives, construct a 30-foot raised curb median. This provides an area in the median where pedestrians can, after crossing one direction of travel, rest and recover and prepare to cross traffic in the opposite direction. Pedestrians will then have to cross only one direction of traffic at a time.

- Install curb and gutter on the shoulders of the roadway. This generally tends to help drivers on the highway realize they are driving through a community and that they should exercise more caution.

- Reduce the number of vehicle driveways connecting to the roadway. This will require the construction of short sections of frontage road.

- Rather than construct frontage roads in front of the college and the high school (with required removal of trees and other impacts), use existing roadways and driveways parallel with and adjacent to the highway.

- A traffic signal likely will be warranted at Division Street in the near future. This signal should include a pedestrian actuated phase and a designated crosswalk.

- The community team indicated that a signal will be desirable at Clairmont Avenue to assist with pedestrian crossings. Warrant studies have not yet been completed.

- Pedestrian underpasses were not considered desirable because of ground water problems, security problems and difficulty getting pedestrians to use them.

- Pedestrian overpasses are not considered desirable for the same reasons they are not in Arlee and Ronan (Section 7.6.4).

- A bicycle/pedestrian path should be constructed along the east side of the highway in the area of the schools.

Consideration should be given, as suggested at public scoping meetings, to designating other highways through the area, such as the Old Freight Route, as bicycle routes. This will provide an alternate route on a highway with considerably less traffic and with possible improvement to safety, aesthetics, bicycling satisfaction and comfort.

7.6.6. Polson Alternate Alignments

The following shoulder width and other features are anticipated if the highway is constructed through Polson (Alignment 1):

- No Action will provide no improvement to existing conditions for pedestrians and bicyclists in Polson.

- Lane Configurations B and C will include, because of limited space available for roadway construction in Polson without major relocation of existing businesses or encroachment into Flathead Lake, an eight-foot shoulder on one side of the roadway only in the area where the lakeshore is immediately adjacent to the existing roadway. In the areas with on-street parking through Polson (primarily in the central business district), the existing sidewalks will remain as is and not be widened because of limited space available for road improvement. The on-street parking in these areas will become roadway travel lanes.

- Lane Configuration D is not practical, feasible or desirable in Segment O (MT 35 to the Flathead River) of Polson because of the limited access it will provide to existing businesses, the limited construction space available without major relocations, and the many vehicle access points and crossings.

Bicyclists

For Alignment 1, if Lane Configuration B or C is constructed, a continuous bicycle travel lane will be provided. The facility will accommodate both utilitarian travel through town, and it will be suitable for recreational trips as well.

If Alignment 2 or 3 is constructed, no accommodations for bicycle travel will be included. It is anticipated that bicyclists will continue to use the existing alignment through town for bicycle travel.

Mitigation

Consideration should be given, if Lane Configuration B or C is constructed within the existing alignment, to designating and signing a bicycle route on the northern side of the roadway, where the continuous bikeway will be located.

If Alignment 2 or 3 is constructed, consideration should be given to designating and signing for a bicycle route on existing parallel streets (including Fourth Street) to allow an alternate route for those not comfortable with the existing condition of narrow or lack of shoulders.

Pedestrians

If Alignment 1 is constructed through Polson, a continuous sidewalk will be provided; however, the number of access drives will remain the same presenting a similar situation for potential conflicts with cross street traffic as presently exists. Also, width of the highway will increase, creating a longer distance for pedestrians to cross the new roadway, with a resulting potential for increase in vehicle/pedestrian accidents. Alignment 1 will include the installation of additional traffic signals, thus providing additional crossing opportunities for pedestrians.

If Alignment 2 or 3 is constructed, no facility for pedestrians will be provided.

Mitigation

Residents present at Polson public meetings recommended that a pedestrian activated crossing replace the existing flashing amber light crossing near Super 1 Foods. Pedestrian activated crossings could be installed at all new signals proposed for Polson.

7.7. AIR QUALITY

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

More detailed information on the environmental consequences and mitigation measures relating to air quality is included in Appendix F.

7.7.1. Methodology

Section 176 of the Clean Air Act requires transportation plans, programs and projects in designated nonattainment areas (such as Ronan and Polson) to conform to the applicable implementation plan's purpose of eliminating or reducing the severity and number of violations of national ambient air quality standards and achieving attainment of such standards. The regulations require a regional analysis of the cumulative effects of major transportation projects in each designated nonattainment area.

The required regional analysis and conformity determination for the Polson and Ronan PM_{10} nonattainment areas, completed by MDT and approved by the Federal Highway Administration, is included in Appendix F of this final EIS.

7.7.2. Impacts: PM_{10} Regional Emissions Analysis

The conformity analysis indicates that an alternate route around Polson, because the included bypass will route traffic away from Polson and out of the nonattainment area, will result in a reduction in transportation-related emissions in the nonattainment area.

The conformity analysis indicates that in Ronan, the existing alignment with committed design features, will result in a reduction in transportation-related emissions in the nonattainment area.

7.7.3. Findings

The regional analysis shows that, in both Polson and Ronan, improvement of US 93 (referred to in the regional analysis as the "Action Scenario") will result in a reduction in PM_{10} emissions compared to the Baseline Scenario and therefore fulfills the requirements for conformity determinations for included projects.

7.7.4. Coordination

Coordination has occurred with the CSKT and EPA.

7.7.5. Mitigation

The following design features have been committed to in writing by MDT. Appendix F presents more details about mitigation measures. These will be implemented with construction of US 93 in Ronan and Polson.

1) Gravel and dirt shoulders will be surfaced.

2) Curbs and gutters will be added.

3) Gravel and dirt approaches will be consolidated wherever possible and surfaced within the US 93 right-of-way.

4) The highway will have new surfacing throughout.

MDT will work with CSKT to implement the following items wherever practical and feasible:

- Specifications on silt content for sanding material will use "200 mesh silt" with less than 10% silt content for sand. "Hardness" of sand typically isn't included in the specifications for sand. MDT and CSKT will consider developing a procedure to test sanding material stored at highway maintenance facilities.

- Dedication of equipment to the Flathead Indian Reservation to keep clean highway shoulders.

- Equipment may include increased use of automated "grasshopper brooms" outside communities.

- Procedures to apply water to the highway prior to sweeping, then to finish cleaning the highway with an Elgin sweeper.

- A schedule that assures a three-year turnover for sand.

- Monitoring quality of sand in storage with a reporting system and a regular schedule for testing.

- MDT coordination of use of additional sweepers with local governments of communities located on the reservation.

MDT will consider measures to mitigate impacts on air quality during construction:

- Use of chemical suppressants, rather than reliance on spraying water, to suppress dust.

- Construction will use a series of shorter segments in phases, rather than one long segment of highway.

- All road surfaces will have pavement when the winter season suspends construction.

- MDT and CSKT will consider special provisions for construction contracts to address specific environmental concerns.

7.8. NOISE

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.8.1. Impacts Common to All Alternatives

Environmental noise can directly affect human health by causing hearing loss, and it is suspected of causing or aggravating other diseases. It indirectly affects human welfare by interfering with sleep, thought, and conversation. Environmental noise also reduces property values and affects wildlife.

Applicable noise regulations and guidelines provide a basis for evaluating noise impacts. For federally funded highway projects, traffic noise impacts are considered to occur when predicted hourly equivalent sound levels (Leq(h)) approach or exceed noise abatement criteria as established by FHWA, or substantially exceed existing noise levels.[53] Although "substantially exceed" is not defined, FHWA considers an increase of 10 A-weighted decibels (dBA) or greater to be a substantial increase and thus an impact. The FHWA noise abatement criterion for residences, parks, schools, churches, and similar areas is 67 dBA. FHWA considers a noise impact to occur if predicted Leq(h) noise levels approach within one dBA of noise abatement criteria.

Leq(h) traffic noise levels for alignments and lane configurations under consideration were predicted using FHWA's STAMINA 2.0 computer model.[54] STAMINA 2.0 is consistent with methods in the FHWA Highway Traffic Noise Prediction Model.[55] Predicted noise emissions from free-flowing traffic at constant speeds depend on the number of automobiles and trucks per hour, vehicular speed, and reference noise emission levels of an individual vehicle. STAMINA 2.0 also considers effects of intervening barriers, topography, trees, and atmospheric absorption. Noises from sources other than traffic are not included.

Predicted noise levels were based on ~~1991~~1994 and ~~2015~~2020 DHV on US 93 (Sections 6.1.4 and 7.1.1). Traffic volumes in each direction of US 93 were assumed to be 50% of the DHV. Speeds were assumed to be ~~55~~60 mph for Lane Configurations B, C and D. Because No Action and Lane Configuration A are projected to operate at LOS F in most areas during the design year, it is difficult to estimate average highway speeds. The highest average speed at LOS F is estimated to be 45 mph and is the number that was ~~been~~ used in the analysis. Speeds were assumed to be 35 mph and 25 mph (30 mph was used in the STAMINA 2.0 Model because that is the lowest value it will accept) in Arlee and Ronan, respectively.

Predicted design hourly volume Leq(h) traffic noise levels were calculated for the existing alignment and are shown on Table 7.8-1. Noise levels were predicted at distances of 100, 150, and 300 feet from the centerline of US 93. The distance of 100 feet from the centerline was analyzed as the nearest distance to the roadway because ROW of US 93 will range from 80 feet with Lane Configuration A to 110 feet with Lane Configuration D.

With Alignments 2, 3 and 4 in Arlee, Alignments 3 and 4 in Ronan and Alignments 2 and 3 in Polson, traffic on the existing alignment through town will be reduced. To predict the decreased noise levels along the existing alignment, traffic volumes to be diverted to the alternate alignments were assumed to be 80% in Arlee, 60% in Ronan and ~~40~~30% in Polson. The remaining traffic mix on the existing alignment through these communities was assumed to be ~~99~~98% passenger cars ~~and only~~ one percent medium trucks and one percent heavy trucks.

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[53]U.S. Department of Transportation, Federal Highway Administration, Procedures for Abatement of Highway Traffic Noise and Construction Noise, Federal-Aid Highway Program Manual, Volume 7, Chapter 7, Section 3, August 9, 1982.

[54]Bowlby, William, John Higgens, and Jerry Reagan, U.S. Department of Transportation, Federal Highway Administration, Noise Barrier Cost Reduction Procedure STAMINA 2.0/OPTIMA: User's Manual, Report Number FHWA-DP-58-1, April 1982.

[55]Barry, T.M. and J.A. Reagan, U.S. Department of Transportation, Federal Highway Administration, FHWA Highway Traffic Noise Prediction Model, Report Number FHWA-RD-77-108, December 1978.

Table 7.8-1 Predicted Design Hourly Volume Leq(h) Traffic Noise Levels (dBA)
For The Existing Alignment

Roadway Section	Distance to Centerline (Feet)	~~1991~~1994 Existing Conditions[1]	~~2015~~2020 Lane Configuration D **MDT Preferred Alternative, Lane Configurations B, C and D**	~~2015~~2020 No Action or Lane Configuration A* **CSKT Preferred Alternative, Lane Configuration A**
A	100	69	74	70
	150	67	70	67
	300	62	65	63
B	100	65	68	68
	150	62	65	65
	300	57	61	61
C	100	69	73	70
	150	66	70	67
	300	61	65	62
D	100	69	73	70
	150	66	70	67
	300	61	65	62
E	100	69	73	70
	150	66	70	67
	300	61	65	62
F	100	69	73	70
	150	66	70	67
	300	61	65	62
G	100	68	73	70
	150	66	70	67
	300	61	65	62

This table has been changed in the final EIS to include the revision of the traffic analysis from 1991 to 1994.

(Continued)

Table 7.8-1 Predicted Design Hourly Volume Leq(h) Traffic Noise Levels (dBA) For The Existing Alignment (Continued)

Roadway Section	Distance to Centerline (Feet)	~~1991~~1994 Existing Conditions[1]	~~2015~~2020 Lane Configuration D **MDT Preferred Alternative, Lane Configurations B, C and D**	~~2015~~2020 No Action or Lane Configuration A **CSKT Preferred Alternative, Lane Configuration A**
H	100	68	72	69
	150	65	69	66
	300	61	64	62
I	100	68	73	69
	150	66	69	66
	300	61	64	62
J	100	63	67	67
	150	61	64	64
	300	56	59	59
K	100	70	74	71
	150	67	71	68
	300	62	66	63
L	100	70	74	71
	150	67	71	68
	300	63	66	63
M	100	70	74	71
	150	67	71	68
	300	63	66	63
N	100	70	75	71
	150	67	71	68
	300	63	66	64

Shapiro and Associates, Inc., 1993. [1] ~~1991~~1994 Existing Conditions predicted from ~~1991~~1994 traffic volumes and speeds. **The MDT Preferred Alternative includes Lane Configuration A in Polson between Mileposts 59.0 and 62.8**

This table has been changed in the final EIS to include the revision of the traffic analysis from 1991 to 1994.

Noise levels on Table 7.8-1 are not shown for Lane Configurations B and C. Noise levels resulting from Lane Configurations B and C will be only slightly less than Lane Configuration D because of different locations of the traffic lanes relative to adjacent receptors. Noise levels at 100, 150 and 300 feet from the centerline of each lane configuration are presented for Roadway Section I, MT 212 to Ronan, in Table 7.8-2, to illustrate the variations. Lane Configuration D will be the loudest of all the lane configurations and represents the worst-case analysis for comparison of impacts among the alignment alternatives.

The U.S. Department of Housing and Urban Development (HUD) has indicated roadway noise from the traffic generated by the highway could affect the location of future HUD-assisted housing projects. HUD noise standards are:

- Acceptable - DNL not exceeding 65 decibels
- Normally Unacceptable - DNL 65 to 75 decibels
- Unacceptable - DNL above 75 decibels

7.8.1.1. Noise Levels Associated with Population Growth

Indirect effects from a larger population, with residential and business development, will increase ambient noise levels. (Sections 7.2, 7.4 and 7.5)

Mitigation

Indirect effects of residential and other development on noise~~groundwater~~ can be mitigated by proper planning and siting of future residential, industrial and commercial development. Planning and control of these future developments is within the jurisdiction of CSKT and local governments. Refer to mitigation measures for Section 7.8.3.

Table 7.8-2 Predicted Noise Levels of Lane Configuration Alternatives

Lane Configuration Alternative	Predicted ~~2015~~2020 Leq(h) Noise Levels (dBA)		
	100 Feet to Centerline	150 Feet to Centerline	300 Feet to Centerline
Lane Configuration A	69	66	62
Lane Configuration B	72	69	64
Lane Configuration C	72	69	64
Lane Configuration D	73	69	64

Shapiro and Associates, Inc., 1993.
Noise levels for Highway Segment I, MT 212 to Ronan

This table has been changed in the final EIS to include the revision of the traffic analysis from 1991 to 1994.

7.8.2. No Action

With No Action, predicted ~~2015~~2020 Leq(h) noise levels along US 93 outside Arlee, Ronan and Polson will be ~~68~~69 to ~~69~~71 dBA at 100 feet (Table 7.8-1). These predicted ~~2015~~2020 noise levels will exceed the FHWA noise abatement criterion of 67 dBA, which is considered to be a noise impact. Compared with ~~1991~~1994 existing conditions, predicted ~~2015~~2020 Leq(h) traffic noise levels will increase by ~~one~~zero to two dBA, which is not considered an impact with FHWA criteria. The increase in noise levels will result from an increase in traffic volume. Because construction activities are not proposed with No Action, construction noise impacts will not occur.

7.8.3. Existing Alignment (Except Arlee, Ronan and Polson)

Construction Impacts:

Construction activities will generate noise. Construction noise sources will include earth-moving equipment, generators and compressors, trucks, and impact equipment. Construction noise will be short-term and limited to the length of the construction period. Construction noise impacts will depend on the type, amount, and location of construction activities and the presence of adjacent sensitive receptors.

During construction, noise levels will increase at sensitive receptors near construction sites. More receptors will be exposed to construction noise in the communities of Arlee, Ravalli, St. Ignatius, Ronan, and Pablo, while fewer receptors will be exposed in the rural sections of US 93. Maximum noise levels from construction activities at 50 feet will range from 69 to 106 dBA and at 200 feet will range from 57 to 94 dBA.[56] Because various equipment will be turned off, idling, or operating at full power at any time, average Leq noise levels during the day will be less than maximum noise levels.

Operational Impacts:

Widening US 93 (Lane Configuration B, C or D) will move traffic closer to receptors, which will increase noise levels above existing conditions. Noise levels shown in Table 7.8-1 assume widening will occur equally along both sides of US 93. In sections where widening will occur only on one side, noise levels will be slightly higher at receptors that will be located on the side of the widening, but slightly lower at receptors that will be located on the side without widening.

Compared with ~~1991~~1994 existing conditions, predicted ~~2015~~2020 Leq(h) noise levels with Lane Configuration B, C and D will increase from three to five dBA at any location along each roadway section (Table 7.8-1). Increases in noise levels of three to five dBA are not considered an impact with FHWA criteria.

As indicated in Section 6.8.1, a doubling of traffic noise constitutes a noise level increase of three dBA.

Predicted ~~2015~~2020 Leq(h) noise levels along US 93 will range from ~~71~~72 to ~~72~~75 dBA at 100 feet and from ~~68~~69 to ~~69~~71 dBA at 150 feet (Table 7.8-1). These predicted ~~2015~~2020 noise levels will exceed the FHWA noise abatement criterion of 67 dBA, which is considered to be a noise impact.

Compared with No Action, predicted ~~2015~~2020 Leq(h) noise levels will increase by one to three dBA (Table 7.8-1). The increase will result from widening the roadway and higher speeds than with No Action ~~increasing speeds from 45 to 55 mph.~~

[56]U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, NTIS Number PB 206 717, December 31, 1971.

Acceleration and deceleration noise occurs on the existing two-lane roadway. It will occur with Lane Configuration A because of the poor LOS and resulting interaction of through traffic with turning vehicles, slower moving trucks and recreation vehicles. Such interaction will be reduced with any of the four-lane configurations. Acceleration and deceleration noise cannot be modeled with STAMINA 2.0, which assumes that traffic is flowing freely at a constant speed, and is not reflected in Table 7.8-1.

Mitigation

Construction noise could be reduced by ~~enclosures or barriers,~~ mufflers on engines, substituting quieter equipment or construction methods and, ~~minimizing~~ minimizing time of operation~~, and locating equipment farther away from sensitive receptors.~~ To reduce construction noise at nearby receptors, mitigation measures will be incorporated into construction plans and contractor specifications.

Noise barriers could reduce noise levels during operation of the highway. Because noise barriers must be continuous and uninterrupted to be effective, numerous driveways and approaches along US 93 in areas where noise impacts will occur will break any noise barriers and therefore diminish their effectiveness. The low number of residences that will benefit from noise barriers along US 93 will result in a high cost for the amount of noise attenuation benefit received. In addition, noise barriers could adversely affect visual quality at commercial buildings and residences that face the roadway. For these reasons, noise barriers will not be reasonable along US 93.

~~US 93 could be widened only on the side located farthest from sensitive receptors. This will reduce 20152020 Leq(h) noise levels in Tables 7.8-1, 7.8-2 and 7.8-3 by one to three dBA.~~

Noise impacts also could be reduced by land use controls on undeveloped land along US 93. CSKT and local county and municipal governments could implement land use planning and regulation~~plans and zoning~~ that will restrict future land uses along US 93 to those compatible with traffic noise. MDT and ~~MHC~~MTC also could develop and implement an access management plan, which will complement land use planning and regulation~~zoning~~ effects on development by controlling access to and from the highway.

Public buildings could be insulated to reduce interior noise levels. Specific construction techniques could include acoustical doors and windows, insulation in walls, floors and ceilings, and ventilation systems designed without the need to open windows. Noise insulation, however, will have no effect on exterior noise levels.

7.8.4. Arlee Alignments

Alignment 1 will follow the existing US 93 through Arlee. Predicted Leq(h) noise levels will be ~~67~~68 dBA at 100 feet, which will ~~approach or~~ exceed the FHWA noise abatement criterion of 67 dBA. Noise levels will increase by three dBA over ~~19911~~1994 existing conditions, but will be equal to ~~20152~~2020 No Action (Table 7.8-3). Because traffic noise decreases with lower speeds, Alignment 1, with a posted speed limit of 35 mph, will result in lower noise levels at comparable distances than Alignments 2, 3, and 4, which will have higher speeds ~~posted speed limits of 55 mph~~. Alignment 1, however, will be located adjacent to a larger number of sensitive receptors than Alignments 2, 3, and 4, and therefore will expose more people to traffic noise. More people also will be exposed to construction noise.

Alignment 2 will be located outside of Arlee. Predicted ~~20152~~2020 Leq(h) noise levels will be ~~71~~73 dBA at 100 feet and ~~68~~70 dBA at 150 feet, which will exceed the FHWA noise abatement criterion of 67 dBA. Because Alignment 2 will be located in a more rural area, ~~20152~~2020 noise levels will increase as much as ~~24~~26 dBA over the measured Leq noise level of 47 dBA in rural locations (Table 7.8-3). Although substantial noise increases will occur, few

Table 7.8-3 Predicted Design Hourly Volume Leq(h) Traffic Noise Levels (dBA)
For Alignment Alternatives

Distance to Centerline (Feet)	~~19911994~~ Existing Conditions[1]	~~20152020~~ Alignment 1	~~20152020~~ Alignment 2	~~20152020~~ Alignment 3	~~20152020~~ Alignment 4	~~20152020~~ No Action	~~20152020~~ Existing Alignment[2]
Arlee Alignments							
100	65	68	73	73	73	68	56
150	62	65	70	70	70	65	53
300	57	61	65	65	65	61	49
Ronan Alignments							
100	63	67	64	73	73	67	59
150	61	64	61	70	70	64	56
300	56	59	57	64	64	59	51
Polson Alignments							
100	66	69	73	73	---	69	63
150	63	67	70	70	---	66	61
300	59	62	65	65	---	62	56

Shapiro and Associates, Inc., ~~19931996~~. [1]Existing Conditions predicted from ~~19911994~~ traffic volumes and speeds. [2]Noise levels on the existing alignment if Alignment 2, 3 or 4 in Arlee, Alignment 3 or 4 in Ronan or Alignment 2 or 3 in Polson are constructed.

This table has been changed in the final EIS to include the revision of the traffic analysis from 1991 to 1994.

sensitive receptors will be located adjacent to the new roadway, and therefore fewer receptors will be affected by construction and traffic noise than with Alignment 1.

Noise levels at locations along existing US 93 will decrease because traffic will be diverted to the new alignment. Predicted ~~2015~~2020 Leq(h) noise levels along existing US 93 will be ~~54~~56 dBA at 100 feet. This decrease in noise levels of ~~10~~9 dBA compared with the ~~1991~~1994 existing conditions will be a substantial decrease and a positive environmental impact at these locations.

Alignment 3 will have noise impacts similar to those described for Alignment 2.

Alignment 4 will have noise impacts similar to those described for Alignments 2 and 3.

7.8.5. Ronan Alignments

Alignment 1 will follow the existing US 93 through the community of Ronan. Predicted Leq(h) noise levels will be ~~65~~67 dBA at 100 feet, which will ~~be below~~equal the FHWA noise abatement criterion of 67 dBA. Noise levels will increase by three to four dBA over ~~1991~~1994 existing conditions, but will be similar to ~~2015~~2020 No Action (Table 7.8-3). ~~Predicted noise levels will be below FHWA noise guidelines and therefore noise impacts will not occur with Alignment 1.~~ Because traffic noise decreases with lower speeds, Alignment 1, with a posted speed limit of 25 mph, will result in lower noise levels at comparable distances than Alignments 3 and 4, which will have higher speeds, ~~a posted speed limit of 55 mph.~~ Alignment 1, however, will be located adjacent to a greater number of sensitive receptors than Alignments 3 and 4, and therefore will expose more people to traffic noise.

Alignment 2 will be a one-way couplet system through Ronan, where northbound traffic will remain on the existing US 93 and southbound traffic will be diverted one block west to a parallel street. Predicted ~~2015~~2020 Leq(h) noise levels will be ~~62~~64 dBA at 100 feet from either the north or south bound street, which will be below the FHWA noise abatement criterion of 67 dBA. Noise levels along existing US 93 will decrease by three dBA compared with ~~2015~~2020 No Action because half of the traffic will be diverted to the southbound street (Table 7.8-3). Noise levels will increase along the southbound street because of large increases in traffic. Predicted noise levels will be below FHWA noise guidelines, and therefore noise impacts will not occur with Alignment 2.

Similar to Alignment 1, Alignment 2 will be adjacent to a greater number of sensitive receptors than Alignments 3 and 4, and therefore will expose more people to construction and traffic noise.

Alignment 3 will be a new roadway located along the edge of Ronan. Predicted ~~2015~~2020 Leq(h) noise levels will be ~~71~~73 dBA at 100 feet and ~~68~~70 dBA at 150 feet, which will exceed the FHWA noise abatement criterion of 67 dBA (Table 7.8-3). Because Alignment 3 will be located in a more rural area, ~~2015~~2020 noise levels will increase as much as ~~24~~26 dBA over the measured Leq noise level of 47 dBA in rural locations. Although substantial noise increases will occur, few sensitive receptors will be located adjacent to the new roadway, and therefore fewer receptors will be affected. Because the speeds will be higher, ~~posted speed limit will be 55 mph,~~ noise levels will be greater than with Alignments 1 and 2.

Noise levels at receptors along existing US 93 in Ronan will decrease because traffic will be diverted to the new alignment. Predicted ~~2015~~2020 Leq(h) noise levels along the existing highway will be ~~56~~59 dBA at 100 feet. The decrease in noise levels of ~~six~~four to five dBA compared with the ~~1991~~1994 existing conditions will be a positive environmental impact at these locations.

Alignment 4 will be a new roadway located farther outside of Ronan than Alignment 3. Noise levels with Alignment 4 will be similar to those described for Alignment 3, although fewer sensitive receptors will be exposed to traffic noise from Alignment 4 (Table 7.8-3).

7.8.6. Polson Alignments

Alignment 1 will follow the existing US 93 through the community of Polson. Predicted Leq(h) noise levels will be 69 dBA at 100 feet, which will be above the FHWA noise abatement criterion of 67 dBA. Noise levels will increase by ~~two~~three dBA over ~~1991~~1994 existing conditions, but will be similar to ~~2015~~2020 No Action (Table 7.8-3). Since predicted noise levels will be above FHWA noise guidelines, noise impacts will occur with Alignment 1. Alignment 1 will be located adjacent to a greater number of sensitive receptors than Alignments 2 and 3, and therefore will expose more people to traffic noise.

Alignment 2 will be a new roadway located south and west of Polson. Predicted ~~2015~~2020 Leq(h) noise levels will be ~~69~~73 dBA at 100 feet, which will exceed the FHWA noise abatement criterion of 67 dBA (Table 7.8-3). Because Alignment 2 will be located in a more rural area, ~~2015~~2020 noise levels will increase as much as ~~22~~26 dBA over the measured Leq noise level of 47 dBA in rural locations. Although substantial noise increases will occur, few sensitive receptors will be located adjacent to the new roadway, and therefore fewer receptors will be affected.

Noise levels at receptors along existing US 93 in Polson will decrease slightly because traffic will be diverted to the new alignment. Predicted ~~2015~~2020 Leq(h) noise levels along the existing highway will be ~~68~~63 dBA at 100 feet. The decrease in noise levels compared with the ~~1991~~1994 existing conditions will be a positive environmental impact at these locations.

Alignment 3 will have noise levels similar to those described for Alignment 2 (Table 7.8-3).

7.9. WATER QUALITY

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.9.1. No Action

There will be no construction-related impacts on water quality with No Action. Increases in highway traffic might cause greater non-point pollution resulting from runoff of oil, grease and tire rubber. Traffic accidents resulting in spills of hazardous materials and fuels can also diminish water quality.

7.9.2. Existing Alignment (Except Arlee, Ronan and Polson)

Water Quality

During construction there is a potential for diminished water quality. Refueling, lubrication, and maintenance of construction equipment; and storage and handling of chemicals, fuels, and lubricating oils can introduce contaminants into surface waters. Following construction, increases in highway traffic might cause greater non-point pollution resulting from runoff of oil, grease and tire rubber. Traffic accidents resulting in spills of hazardous materials and fuels can also diminish water quality. With highway improvement and resulting improvement in safety for all vehicles, the potential for spills will be reduced.

Widening the highway will intercept very shallow--less than 15 feet deep-- aquifers in alluvial and glacial deposits at numerous sites. No measurable depletion or contamination of these aquifers is expected. Direct interference with existing shallow domestic wells near the highway is not expected, because these wells tap deeper aquifers.

Widening of the existing alignment near the Schley homesites (Mileposts 11.0 to 11.5) could facilitate movement of contaminated shallow groundwater into surface streams. At this site, a shallow aquifer is contaminated (probably by leakage from septic fields), and this water may be surfacing in the existing highway ditch.

Turbidity

Increased turbidity may result from runoff from construction areas which have been temporarily stripped of vegetation or topsoil. These impacts will be more serious during periods of heavy precipitation. They will also be more serious where soils have a high water or wind erosion potential.

Following construction, the increased paved surface area of the highway will result in increased and more rapid runoff and less infiltration of rain water during precipitation events. These changes in runoff volume and velocity can increase soil erosion and result in greater surface water turbidity.

Sedimentation rates during construction have been estimated. For a 10-year, 24-hour storm, it is estimated that 0.22 ton of sediment per acre will result in areas where vegetation or topsoil have been temporarily removed. Given existing conditions of 0.01 ton of sediment per acre produced during the same precipitation event, there will be a predicted net increase of 0.21 ton (0.1575 yards) of sediment per acre.

An estimate of sedimentation quantities for each segment of the highway for each lane configuration during construction is shown in Table 7.9-1 for the existing alignment. Estimates shown on these tables assume the erosion control plan and mitigation measures described below are properly implemented. As indicated on the tables, wider lane configurations have the potential for greater quantities of sedimentation during construction.

Table 7.9-1 Estimate of Potential Sediment Yield for Existing Alignment (Except Arlee, Ronan, and Polson) During Construction

Segment	Miles	CSKT Preferred Alternative Lane Configuration A		Lane Configuration B		Lane Configuration C		Lane Configuration D		MDT Preferred Alternative	
		Acres	Tons	Acres	Tons	Acres	Tons	Acres	Tons	Acres	Tons
A	10.2	84.7	18.6	121.7	26.8	138.7	30.5	174.7	38.4	125.0	27.5
B	1.5	2.6	0.6	5.6	1.2	7.6	1.7	10.6	2.3	7.6	1.7
C	6.3	36.3	8.0	40.3	8.9	44.3	9.7	57.3	12.6	41.0	9.0
D	2.0	31.2	6.9	33.2	7.3	35.2	7.7	39.2	8.6	33.2	7.3
E	0.9	7.2	1.6	7.2	1.6	7.2	1.6	7.2	1.6	7.4	1.7
F	3.7	50.6	11.1	63.6	14.0	69.6	15.3	78.6	17.3	63.8	14.1
G	2.4	21.8	4.8	27.8	6.1	31.8	7.0	37.8	8.3	27.8	6.1
H	8.6	95.2	20.9	115.2	25.3	135.2	29.7	167.2	36.8	118.0	25.9
I	4.0	60.4	13.3	70.4	15.5	81.4	17.9	96.4	21.2	73.2	16.1
J	1.5	4.6	1.0	4.6	1.0	6.6	1.5	4.6	1.0	6.6	1.5
K	3.2	55.1	12.1	56.1	12.3	59.1	13.0	66.1	14.5	56.7	12.4
L	3.9	54.5	12.0	57.5	12.6	61.5	13.5	72.5	15.9	60.4	13.2
M	1.8	20.4	4.5	23.4	5.1	27.4	6.0	33.4	7.3	25.4	5.6
N-O-P	6.3	50.4	11.1	68.7	15.1	79.4	17.5	113.0	24.9	60.8	13.3

Morrison-Maierle. 1993.
Assumption: Sedimentation equal to 0.22 ton per acre.

To illustrate the relative magnitude of sedimentation quantities shown on Table 7.9-1, sedimentation quantities for Segment D, which is parallel with the Jocko River for approximately two miles and is separated from the river by the railroad, have been compared with existing sediment loadings. As shown on Table 7.9-1 and depending on the lane configuration used, approximately 6.9 to 8.6 tons of sediment will be eroded during a 10-year, 24-hour storm event. A conservatively high estimate is that approximately one-half of this quantity will reach the river (3.5 to 4.3 tons). During spring run-off, sediment loadings in the Jocko River at Dixon (approximately nine miles downstream of Segment D) typically range up to 115 tons per day. Expected sediment introduction into the river resulting from a major storm occurring during construction will amount to approximately 3.0 to 3.7% ~~three to four percent~~ of current sediment loadings.

Sedimentation rates per acre of surface area are estimated to be similar to existing, preconstruction conditions. Larger paved surface areas resulting from the wider lane configurations will increase quantities and velocities of storm water runoff and will therefore increase sedimentation. These increases will be offset by substantially flatter shoulder slopes and excavation/embankment slopes (necessary to improve highway safety) and improved erosion protection measures.

Stream Flow

During and after highway construction, increases in volume and velocity of runoff can be expected. During construction, areas that have been stripped of topsoil or vegetation can experience increases in volume and velocity of runoff during precipitation events. Following construction, slightly increased runoff volume and velocity from larger highway surface areas can be expected.

Wellhead Protection Areas

The existing alignment, excluding the communities of Arlee, Ronan, Pablo and Polson, does not cross any existing or proposed wellhead protection areas.

Other potential impacts on groundwater include:

- Impacts from pesticide use. With any of the proposed alignment alternatives, herbicides will be used to control noxious weeds in the highway ROW.
- Impacts from road deicers. Various evaluations have been conducted on the impacts of the use of chemical road deicers on surface and groundwater. To date, no substantial potential impacts have been identified.
- Impacts from road salts. MDT no longer applies salt directly to roadways as a deicer. A small amount is placed in sanding stockpiles to keep them from freezing during the winter, but the amounts used are expected to have no impact on water quality.
- Impacts from spills of hazardous materials. The potential exists, with any of the proposed alignment alternatives, for accidental spills to occur along the roadway. Improvement of the highway will include various safety improvements that should reduce the potential for accidents on the roadway.

Permits

Section 7.11.1.2 lists permits that will be required for all improvements that affect stream crossings.

Mitigation

A storm water erosion control plan will be developed and a temporary erosion control permit secured from the EPA in accordance with Section 402 of the Clean Water Act. The objective of the plan and permit is to minimize erosion of disturbed areas during the construction and post construction phase. Careful planning and proper implementation of the plan will lessen the likelihood of pollutants reaching area waters. The plan will become part of the construction plans, specifications and documents. Construction contractors will be required to adhere to it.

A plan for runoff control for hazardous materials at construction sites is also necessary and will be coordinated with and approved by the EPA.

The continuous recording stream discharge station at Mission Creek will have to be moved if the highway is widened.

The MDT Standard Erosion Control Work Plan[57] will be used as a guide to prepare a specific work plan for each construction project. This standard plan incorporates seven major principles of soil erosion and sedimentation control including:

Plan the Development to Fit the Site

Detailed design will be employed to assure that roadways, structures and other permanent features of the proposed action conform to the natural characteristics of the site. Areas with steep slopes, erodible soils, and soils with severe limitations will have planned erosion controls to overcome those limitations. For instance, long steep slopes can be broken by benching, terracing or constructing diversion structures.

Minimize Extent of Disturbed Areas and Duration of Exposure

When earth moving activities require the removal of vegetation, the area and the duration of the exposure will be kept to a minimum. Phases or stages of development will be planned so that only the areas which are actively being developed are exposed. Grading will be completed as soon as possible after it is started. When construction is complete, permanent vegetative cover will be established in the area. As cut slopes are made and as fill slopes are brought up to grade, these areas will be revegetated with the progression of work. Timing for installation of best management practices (BMP) will be carefully planned.

Stabilize and Protect Disturbed Areas as Soon as Possible

Disturbed areas will be stabilized as soon as possible using methods appropriate at each site including dikes and swales; roughening, stair stepping and terracing of slopes; mulching; seeding; sodding; erosion control blankets; retaining walls; slope drains; vegetative buffer strips; straw bale barriers; gravel filter berms; silt fences; dugout ditch basins; settling basins; sediment traps and stream bank protection.

Keep Runoff Velocities Low

The removal of existing vegetative cover and the resulting increase in impermeable surface area during construction will increase both the volume and velocity of runoff. These increases will be taken into account when providing for erosion control. Slope changes will be designed to keep slope length and gradient to a minimum. Short slopes, low gradients and the preservation of natural vegetative cover will keep runoff velocities low. This will limit erosion hazards and reduce costs associated with erosion control.

[57]Pioneer Technical Services, Inc. for Montana Department of Transportation, Highway Construction Standard Erosion Control Work Plan, 30 September 1992.

Protect Disturbed Areas from Runoff

Measures to prevent off-site water from entering and running over the disturbed areas will be implemented. Slope and disturbed ground protection measures are favorable over trying to remove sediment from runoff waters after erosion has occurred.

Retain Sediment within the Corridor Area

Sediment will be retained by two methods: (1) by filtering runoff as it flows, and (2) by detaining sediment-laden runoff for a period of time so that sediment particles settle out. The best way to control sediment, however, is to prevent erosion. As recommended by the CSKT staff, using borrow ditches and natural depressions for construction of sedimentation basins has been used successfully on the existing highway and should be applied, where appropriate, on any new construction.

Implement a Thorough Maintenance and Follow-up Program

The plan will include a thorough maintenance and monitoring plan to ensure that erosion control measures are functioning properly and, where needed, adjustments or improvements are made.

The erosion control work plan will also apply to and be developed for all required borrow sites.

Mitigation of the groundwater contamination problem at Schley homesites is needed. There, contaminated shallow groundwater may be surfacing in the existing highway ditch. Discharge of contaminated ground water could be reduced or eliminated by replacement of existing septic fields, and possibly by shifting the highway alignment to the west, to avoid making a deeper sidecut into the slope east of the highway.

Where necessary to clean bridge decks, as part of construction or during maintenance after construction, the decks should be swept and the debris collected and taken to a proper disposal site. This should be done in lieu of hosing the bridge decks with water, which carries the debris into the streams.

Continued proper use of pesticides and chemical deicers will be important to avoid effects on surface and ground water.

7.9.2.1. Indirect Effects

Indirect effects from a larger population, with residential and business development, can affect surface water quality by lowering infiltration of precipitation and increasing runoff and erosion from developed areas. This can increase the potential for surface water pollution. Long-term growth also will increase the numbers of sewage treatment systems and septic fields which may affect ground water in some areas. The Arlee area is most susceptible to such groundwater contamination, where shallow sand and gravel deposits provide a pathway from the surface down to a shallow aquifer.[58] (Sections 7.2, 7.4 and 7.5)

Mitigation

Indirect effects of residential and other development on groundwater can be mitigated by proper planning and siting of future residential, industrial and commercial development. Areas near water bodies or other sensitive areas, such as those with shallow aquifers, should be avoided. Planning and control of these future developments is within the jurisdiction of CSKT and local governments.

[58]Makepeace, S. 1989. Simulation of ground water flow in a coarse-grained alluvial aquifer in the Jocko Valley, Flathead Indian Reservation, Montana. M.S. Thesis, University of Montana, Missoula, Montana.

7.9.3. Arlee Alignments

Alignments 1 and 2 in the Arlee area do not cross any streams. Alignment 3 crosses the Flathead Irrigation District's R Canal at three locations. Alignment 4 will require new stream crossings of Agency Creek, the Jocko River, Pellew Creek and Spring Creek.

Water Quality

Since Alignments 1, 2 and 3 in Arlee do not cross any streams, there is less potential for impacts on water quality.

During construction of Alignment 4, there is a potential for diminished water quality at the several stream crossings. Refueling, lubrication, and maintenance of construction equipment; and storage and handling of chemicals, fuels, and lubricating oils could introduce contaminants into surface waters.

Following construction, along Alignment 4, increases in traffic capacity and in subsequent highway use might cause greater non-point pollution resulting from runoff of oil and grease and tire rubber. Traffic accidents resulting in spills of hazardous materials and fuels could also diminish water quality.

Turbidity

Table 7.9-2 summarizes sediment yield quantities for the Arlee alignments during construction. Since Alignments 1, 2 and 3 do not cross any streams, potential for stream sedimentation is low.

Potential for stream sedimentation is higher for Alignment 4 because of the several crossings.

Stream Flow

During and after highway construction, increases in volume and velocity of runoff can be expected. Construction areas that have been stripped of topsoil or vegetation could experience increases in volume and velocity of runoff during precipitation events. Following construction, increased runoff volume and velocity from larger highway surface areas could be expected. However, given the small percentage of the total drainage basin which will be disturbed by the construction and new highway, no measurable increases in stream flow will be noted.

Wellhead Protection Areas

A wellhead protection area is proposed on property owned by the schools near Alignment 3 in Arlee. There is a potential for diminished groundwater quality resulting from increased surface runoff. Wells in Arlee mostly draw water from a shallow aquifer developed in sand and gravel of the alluvial fan deposited by the Jocko River. The increases in volume of surface runoff from the greater surface area of the new highway can result in greater infiltration of water contaminated by hydrocarbons. The potential for increased hazardous chemical spills with increased traffic volume can also be a contributing factor to decreased water quality. These impacts are difficult to quantify.

There are no other existing or proposed wellhead protection areas in the Arlee area.

Other potential impacts on groundwater include:

- Impacts from pesticide use. With any of the proposed alignment alternatives, herbicides will be used to control noxious weeds in the highway ROW.

Table 7.9-2 Estimate of Potential Sediment Yield for Arlee, Ronan and Polson Alignments, During Construction

Segment	Miles	Lane Configuration A CSKT Preferred Alternative		Lane Configuration B		Lane Configuration C		Lane Configuration D		MDT Preferred Alternative	
		Acres	Tons	Acres	Tons	Acres	Tons	Acres	Tons	Acres	Tons
Arlee Alignments											
1	7.0	40.6	8.9	49.6	10.9	60.6	13.3	NA	NA	60.6	13.3
2	7.1	46.5	10.2	56.5	12.4	68.5	15.1	88.5	19.5	56.5	12.4
3	7.2	44.5	9.8	54.5	12.0	65.5	14.4	86.5	19.0	54.5	12.0
4	7.4	62.3	13.7	79.3	17.4	97.3	21.4	115.3	25.4	79.3	17.4
Ronan Alignments											
1	3.5	35.8	7.9	37.8	8.3	35.8	7.9	NA	NA	35.8	7.9
2	3.5	27.8	6.1	NA	NA	NA	NA	NA	NA	NA	NA
3	3.5	35.8	7.9	44.8	9.9	53.8	11.8	65.8	14.5	44.8	9.9
4	3.5	38.8	8.5	47.8	10.5	56.8	12.5	65.8	14.5	47.8	10.5
Polson Alignments											
1	6.3	50.4	11.1	68.7	15.1	79.4	17.5	113.0	24.9	60.9	13.4
2	7.1	91.2	20.1	111.9	24.6	123.9	27.3	161.8	35.6	111.9	24.6
3	7.0	89.9	19.8	110.3	24.3	122.2	26.9	159.5	35.1	110.3	24.3

Morrison-Maierle, 1993.
Assumption: Sediment loading equal to 0.22 ton of sediment per acre. NA - Not applicable.

- Impacts from road deicers. Various evaluations have been conducted on the impacts of the use of chemical road deicers on surface and groundwater. To date, no substantial potential impacts have been identified.

- Impacts from road salts. MDT no longer applies salt directly to roadways as a deicer. A small amount is placed in sanding stockpiles to keep them from freezing during the winter, but the amounts used are expected to have no impact on water quality.

- Impacts from spills of hazardous materials. The potential exists, with any of the proposed alignment alternatives, for accidental spills to occur along the roadway. Improvement of the highway will include various safety improvements that should reduce the potential for accidents on the roadway.

Indirect Effects

Indirect effects will be similar to those described for the existing alignment.

Mitigation

Mitigation measures will be similar to those described in Section 7.9.2.

7.9.4. Ronan Alignments

Alignments 1 and 2 in Ronan will cross Spring Creek at existing roadway culvert crossings. Alignments 3 and 4 will require new crossings of Spring Creek. Alignments 3 and 4 will also cross the Flathead Irrigation District's Lateral A6 and Alignment 4 will cross the district's Canal B.

Water Quality

Since all alignments under consideration in Ronan will cross Spring Creek, there is potential for impacts on water quality. The potential is considered greater for Alignments 3 and 4 because new crossings will be required.

Refueling, lubrication, and maintenance of construction equipment; and storage and handling of chemicals, fuels, and lubricating oils could introduce contaminants into surface waters.

Following construction, along Alignments 3 and 4, increases in traffic capacity and in subsequent highway use might cause greater non-point pollution resulting from runoff of oil and grease and tire rubber. Traffic accidents resulting in spills of hazardous materials and fuels could also diminish water quality.

Turbidity

Table 7.9-2 summarizes potential sediment yield quantities for the Ronan alignments during construction.

Potential for stream sedimentation is higher for Alignments 3 and 4 because they will require new crossings.

Stream Flow

During and after highway construction, increases in volume and velocity of runoff can be expected. Construction areas that have been stripped of topsoil or vegetation could experience increases in volume and velocity of runoff

during precipitation events. Following construction, increased runoff volume and velocity from larger highway surface areas could be expected. However, given the small percentage of the total drainage basin which will be disturbed by the construction and new highway, no measurable increases in stream flow will be noted.

Wellhead Protection Areas

There are no existing or proposed wellhead protection areas in the Ronan area.

Potential impacts to groundwater will be similar to those described for the alternative alignments in Arlee.

Indirect Effects

Indirect effects will be similar to those described for the existing alignment.

Mitigation

Mitigation measures will be similar to those described in Section 7.9.2.

7.9.5. Polson Alignments

Alignment 1 will cross the Flathead River at the location of the present US 93 bridge just south of the Flathead Lake outflow. No other perennial streams are crossed by Alignment 1. To the east of Polson, Alignment 1 also crosses the Polson and Pablo Feeder canals. These canals receive water pumped from the Flathead River two miles below the US 93 bridge as well as diversions from streams rising in the Mission Mountains southeast of Polson.

With Alignment 2, the Flathead River bridge crossing will be one-half mile downstream of the existing crossing. Flow there is essentially the same and the channel width is slightly narrower. Alignment 2 also crosses the Polson and Pablo Feeder canals but at different locations. It also crosses the pump canal which brings water from the Flathead River pumping station to the aforementioned canals.

With Alignment 3, the Flathead River crossing will be one-half mile further downstream than the Alignment 2 crossing. Flow there is essentially the same and the channel width is slightly narrower. Alignment 3 does not cross the Polson Canal. It crosses the Pablo Feeder Canal at the same location as Alignment 2 and crosses the pump canal at a different location from the Alignment 2 crossing.

Water Quality

During construction of Alignment 1, there is a potential for diminished water quality in Flathead Lake and the Flathead River. Refueling, lubrication, and maintenance of construction equipment; and storage and handling of chemicals, fuels, and lubricating oils could introduce contaminants into surface waters.

Following construction, increases in traffic capacity and in subsequent highway use might cause greater non-point pollution resulting from runoff of oil and grease and tire rubber. Traffic accidents resulting in spills of hazardous materials and fuels could also diminish water quality.

Turbidity

Table 7.9-2 summarizes potential sediment yield quantities for the Polson alignments during construction.

Total surface disturbance for any of the alternatives under consideration represents a small percentage of the approximately 7,090 square mile Flathead Lake and river drainage basin above the proposed action. The increase in total dissolved solids in the river downstream of the site following a major precipitation event will be small.

Stream Flow

During and after highway construction, increases in volume and velocity of runoff can be expected. Construction areas that have been stripped of topsoil or vegetation could experience increases in volume and velocity of runoff during precipitation events. Following construction, increased runoff volume and velocity from larger highway surface areas could be expected. However, given the small percentage of the total Flathead Lake and river drainage basin which will be disturbed by the construction and new highway, there will be no measurable increases in stream flow in the Flathead River.

Wellhead Protection Areas

Alignment 1 crosses approximately 0.6 mile of Zone 1 of the proposed Polson wellhead protection area in the SW1/4, Sec. 2, T22N, R20W.[59] Approximately 2.5 miles of Zone 2 are crossed by the Alignment 1 in Secs. 11, 12, and 13, T22N, R20W. Zone 1 is the most sensitive zone as it immediately surrounds the Polson municipal water supply wells. Zone 2 is a less sensitive buffer area situated further from the wellhead.

Alignments 2 and 3 will cross less of the proposed wellhead protection area than Alignment 1. They cross two miles of the boundary area between Zones 2 and 3 northeast of the Pablo Reservoir. Zone 3 is less sensitive than Zone 2.

Potential impacts to groundwater will be similar to those described for the alternative alignments in Arlee.

Surface water resource conditions for Alignments 2 and 3 are essentially the same as those for Alignment 1.

Indirect Effects

Indirect effects will be similar to those described for the existing alignment.

Mitigation

Mitigation measures will be similar to those described in Section 7.9.2.

It may be appropriate to place signs along the highway to advise motorists and truckers that they are entering a wellhead protection area and extra caution should be used.

[59]Shannon Environmental Management. 1993. Draft Map of Wellhead Protection Area for Polson, Montana. Missoula, MT.

7.10. WETLANDS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.10.1. No Action

Under No Action, wetlands and non-wetland riparian areas along the highway would not receive additional fill and would remain in their existing states. Existing levels of highway related disturbances to these areas resulting from periodic clear zone maintenance and other maintenance activities would continue. The potential of disturbance to these areas resulting indirectly from forecasted increasing traffic (e.g., fuel spills and other accidents) is expected to increase over time in the absence of highway improvements. (Section 7.1.2)
~~No Action will not result in the filling or disturbing of existing wetlands.~~

7.10.2. Existing Alignment (Except Arlee, Ronan and Polson)[60]

Table 6.10-1, which is presented at the back of Appendix A, lists individual estimated impact acreage for all wetlands and non-wetland riparian areas with alternative alignments and lane configurations. A summary of wetland and non-wetland riparian area impacts by alignment and lane configuration is presented in Table 7.10-1. Estimated impacts by wetland type and overall rating category are summarized in Table 7.10-2.

As determined using the MDT wetland site evaluation method,[61] Table 7.10-3 lists primary functions of wetland acreage expected to be lost to construction for each wetland type and each of the four overall rating categories. These include food chain support, general fish and wildlife habitat, potential habitat for threatened and endangered species, flood attenuation, sediment filtration, erosion control, nutrient cycling, and recreation/education potential. In addition to the direct losses described above, many affected wetlands and non-wetland riparian areas would experience incremental losses in overall function commensurate with their proportional losses in size. For comparison purposes, estimated total sizes and anticipated impacts under each alternative for each wetland and non-wetland riparian area are presented in Table 6.10-1 (Appendix A). These indirect impacts would have little effect on the overall functions of larger Category I and II wetlands, which would experience very minor losses in proportion to their overall sizes. Similarly, indirect effects would not apply to most of the small, low value wetlands (e.g., roadside ditches) that would be lost entirely to construction. These indirect impacts would have the greatest effect on small to medium sized (e.g., one to five acres) wetlands of high overall value, which primarily consist of potholes (emergent/open water wetlands).

Wetlands and riparian areas may be indirectly affected by development associated with improvement of the highway. However, it is not possible to quantify such impacts without knowledge of where such associated development may or may not occur. With or without highway improvement, the recent pattern of growth and development is expected to continue in the area from Evaro through Polson. Consequently, an improved highway would be a factor that combines with other factors to provide transportation services that support any increase in the rate of population growth (Section 7.4).

[60]Tables 7.10-1 and 7.10-3 in the draft EIS has been removed, and tables have been renumbered in the final EIS.
[61]Montana Department of Transportation, Wetlands Site Evaluation Form. Unpublished methodology. Helena, Montana. 1994.

Table 7.10-1 Summary of Wetland and Riparian Area Impacts (Acres)
This table has been added to the final EIS

Alignments	MDT Preferred Alternative Alignments and Configurations*		CSKT Preferred Alternative Lane Configuration A		Lane Configuration B		Lane Configuration C		Lane Configuration D	
	Wetland	Riparian	Wetland	Riparian	Wetland	Riparian	Wetland	Riparian	Wetland	Riparian
Existing Alignment - Does not include Arlee (1-4), Ronan (1-4), or Polson (1-3) Alignments	37.12	6.97	21.75	3.33	36.15	7.05	43.03	8.06	58.71	10.76
Arlee Alignments										
*Arlee #1	2.48	0.68	2.1	0.37	2.33	0.53	2.54	0.68	4.78	0.85
Arlee #2	N/A	N/A	2.58	0.08	2.93	0.21	3.15	0.23	5.09	0.27
Arlee #3	N/A	N/A	2.16	0.37	2.71	0.51	2.96	0.64	5.28	0.72
Arlee #4	N/A	N/A	8.23	0.66	9.86	0.79	10.85	0.87	13.13	1.05
Ronan Alignments										
*Ronan #1	0.59	0.00	0.21	0.00	0.52	0.00	0.72	0.00	1.25	0.00
Ronan #2	N/A	N/A	0.41	0.00	0.72	0.00	0.91	0.00	1.41	0.00
Ronan #3	N/A	N/A	2.42	0.02	2.86	0.02	3.17	0.02	3.87	0.03
Ronan #4	N/A	N/A	6.22	0.05	7.51	0.06	8.27	0.07	10.10	0.08
Polson Alignments										
*Polson #1	0.15	0.00	0.11	0.00	0.18	0.00	0.24	0.00	0.70	0.00
Polson #2	N/A	N/A	0.37	0.00	1.38	0.00	1.64	0.00	2.26	0.00
*Polson #3	0.08	0.00	0.08	0.00	0.09	0.00	0.10	0.00	0.13	0.00
Total Estimated Impacts of Preferred Alignments and Preferred Lane Configurations:	40.42	7.65	24.25	3.70	39.27	7.53	46.63	8.74	65.57	11.61

Morrison-Maierle Environmental. 1996. * Preferred alignments. MDT Preferred Alternative is a combination of Lane Configurations A, B, C and D.

Table 7.10-2 Estimated Wetland Impact Acreage of the Existing Alignment and Polson Alignment 3 ~~Preferred Alignment~~ and Alternative Lane Configurations

Wetland Type	MDT Preferred Alternative Lane Configurations A, B, C and D	CSKT Preferred Alternative Lane Configuration A	Lane Config. B	Lane Config. C	Lane Config. D
Emergent	20.02	12.00	19.44	23.08	32.48
Emergent/Open Water (with scattered shrub component)	2.85	1.70	2.75	3.26	4.59
Emergent/Shrub	8.05	4.85	7.85	9.32	13.10
Forested/Shrub (with scattered emergent component)	9.50	5.70	9.23	10.97	15.40
Total	40.42	24.25	39.27	46.63	65.57
Overall Wetland Category*					
Category I (exceptional)	6.49	3.88	6.28	7.46	10.49
Category II (high)	6.78	4.12	6.67	7.93	11.15
Category III (moderate)	15.77	9.45	15.32	18.19	25.57
Category IV (low)	11.38	6.80	11.00	13.05	18.36
Total	40.42	24.25	39.27	46.63	65.57

Morrison-Maierle Environmental. 1996.
* From MDT Wetland Site Evaluation Forms
This table has been added to the final EIS

Table 7.10-3 Proposed Wetlands Affected by MDT Preferred Alternative versus Replacement Wetlands

Wetland Type	Estimated Affected Acres	Prominent Functions* at Affected Wetlands	Estimated Acres at Replacement Wetlands	Prominent Functions* at Replacement Wetlands
Emergent	9.89	SF, EC, WH, FCS, NC	20.9 (total both types)	TES, WH, REP, FCS, SF, EC, NC
Emergent/Open Water	2.85	TES, WH, EC, FCS, REP, U		
Emergent/Shrub	5.37	FCS, EC, WH, NC, GDR, SF	14.9*** (total both types)	FCS, TES, WH, FC, NC, GDR
Forested/Shrub	9.5	TES, GDR, WH, FCS, SF, FC, EC, NC, U		
Emergent and Shrub Excavated Ditches	12.81	SF, EC	9.37	SF, NC
Total	40.42		45.17	
Overall Wetland Category **				
Category I (Exceptional Overall Rating)	6.49	FCS, FC, TES, SS, WH, GDR, U, REP, EC, NC, SF	7.4	FCS, TES, WH, GDR, REP, EC, NC, SF, FC
Category II (High Overall Rating)	6.78		28.4	
Category III (Moderate Overall Rating)	15.77	SF, EC, WH, FC, NC	9.37 (excavated ditches)	SF, NC
Category IV (Low Overall Rating)	11.38	SF		SF
Total	40.42		45.17	

* Prominent Functions (as determined using MDT wetland site evaluation forms. Functions generally rating as "high" or "exceptional" at wetlands representative of each type are indicated as prominent functions.):

EC - Erosion Control
FCS - Food Chain Support
HD - Habitat Diversity
REP - Recreation/Education Potential
SS - Sensitive Species Habitat
U - Uniqueness
FC - Flood Control & Storage
GDR - Groundwater Discharge/Recharge
NC - Nutrient Cycling
SF - Sediment Filtration
TES - Threatened and Endangered Species Habitat
WH - General Fish & Wildlife Habitat

** As determined using MDT wetland site evaluation forms.

*** Total does not include proposed enhancement/restoration of woody vegetation along Post Creek on the Yatchak property.

The potential for disturbance of wetlands and riparian areas resulting indirectly from forecasted increasing traffic (e.g., fuel spills and other accidents) is not expected to increase substantially due to proposed traffic safety improvements. (Section 7.1.2)

~~Table 7.10-1 lists wetlands that will be impacted along the existing alignment.~~

Temporary ~~Indirect~~ impacts to wetlands and riparian areas would be ~~are~~ minor and would include ~~, including~~ temporary effects on wildlife, vegetation, and surface and ground water flow and quality during construction. ~~Unavoidable environmental effects also include minor temporary damage to some existing wetlands adjacent to the construction site.~~ These would ~~This might~~ result from ~~occur through~~ temporary draining or ponding of water, operation of machinery along wetland edges, sediment washed into wetlands, and disturbance of wildlife and vegetation. Following construction, temporary impacts would result from periodic clear zone maintenance and other maintenance activities.

7.10.3. Arlee, Ronan and Polson Alignments

Table 6.10-1 (Appendix A) lists individual estimated impact acreage for all wetlands and non-wetland riparian areas with alternative alignments and lane configurations. A summary of wetland and riparian area impacts by alignment and lane configuration is presented in Table 7.10-1. Estimated impacts by wetland type and overall rating category under the existing alignment and alternative lane configurations are summarized in Table 7.10-2.

Types of direct, indirect, and temporary impacts to wetlands and riparian areas under implementation of alternative alignments and lane configurations would be similar to those discussed in the preceding section. The magnitude of these impacts would vary with the amount of wetlands and riparian areas affected, which, in turn, varies depending on the combinations of alignments and lane configurations selected for analysis. Depending on the combinations selected, direct wetland impacts could range from approximately 24.25 to 84.2 acres, while impacts to riparian areas could range between 3.7 and 11.89 acres (Table 7.10-1).

Alternative Alignments

As shown in Table 7.10-1, the alternative alignments through or around Arlee, Ronan, and Polson would directly impact more wetlands than would the existing alignments in these areas, regardless of the lane configuration selected. In the Arlee area, Arlee Alignment 4 would result in the most wetland impacts (including a new crossing of the Jocko River), generally followed in decreasing order of impact by Alignments 3, 2, and 1. Arlee Alignment 2 would generally result in the least impact to non-wetland riparian areas. In the Ronan area, Ronan Alignment 4 would affect the greatest amount of wetlands and riparian areas, followed by Alignments 3, 2, and 1. Polson Alignment 2 would result in greater wetland impacts, as well as more impacts to the Flathead River, than would the proposed combination of Alignments 1 and 3 (Table 6.10-1, Appendix A). No impacts to non-wetland riparian areas would result from any of the Polson alignments.

Alternative Lane Configurations

Lane Configuration A would result in the least amount of wetland and riparian area impacts, followed in increasing order of impact by Lane Configurations B, C and D, regardless of the alignments selected. (Table 7.10-1)

~~Table 7.10-3 compares total estimated areas of directly impacted wetlands on alignment alternatives for each lane configuration.~~

~~Arlee Alignments 1, 2 and 3 have no wetlands on segments of the roadway in which they correspond.~~

~~Arlee Alignment 4 will have roughly the same impact on wetlands as will Alignment 1 (on the segments of the roadway in which they correspond).~~

~~Ronan Alignment 1 impacts less wetlands than Ronan Alignments 3 and 4. Ronan Alignment 2 has no wetlands, and has a marginal, unsubstantial advantage over Alignment 1. Both cross Ronan Spring Creek, but only minimal impacts to the narrow wetland along Alignment 1 are expected.~~

~~Polson Alignments 1 and 3 have equivalent, low impacts to wetlands, mostly at narrow strips along canals. Both alignments have a substantial advantage over Alignment 2.~~

~~No mitigation projects are planned that are specific to any of the alignment alternatives.~~

7.10.4. Cumulative Impacts

While the total acreage of drained and filled wetlands on the Flathead Indian Reservation has never been calculated, the Confederated Salish and Kootenai Tribes estimate that at least 30% of the pothole wetlands on the reservation have been drained over time through farming practices, road construction, and other development.[62] Additional wetland losses within the reservation are likely to result from future activities, including timber harvest and residential development; however, it is not possible at this time to accurately predict or quantify these potential impacts. Proposed projects which may affect wetlands or other waters on the reservation would be subject to the tribal ALCO permit process.

According to MDT, it is estimated that proposed highway improvement projects north of Missoula and west of the Continental Divide would result in the cumulative loss of approximately 60 wetland acres (of which approximately 25 acres would occur on the Flathead Indian Reservation) in addition to anticipated losses associated with the proposed action to improve US 93 from Evaro through Polson. Another loss of 45 acres of wetlands may result from a proposed action for improvement of US 93 south of Missoula. ~~Currently, proposed highway improvement and reconstruction projects in northwestern Montana would adversely affect 90 to 103 acres of wetlands.~~ Although wetlands would be lost or degraded by proposed highway projects, wetlands would be created or enhanced to mitigate for losses in functions and values. Consequently, no net losses of wetland functions and values should result from these projects if mitigation projects are successful. ~~The Section 404(b)(1) Guidelines specify that if projects are permitted which destroy or degrade wetlands that wetlands and their associated functions and values must be replaced so there is no net loss in wetland resources.~~ No net loss in wetland resources is (unofficial) national policy with respect to wetland mitigation.

While past wetland losses on the reservation were considerable, present and anticipated future losses would be temporary as compensatory mitigation would be provided to satisfy the requirements of the Confederated Salish and Kootenai Tribes, the U.S. Department of the Army, Corps of Engineers (COE) and the U.S. Environmental Protection Agency (EPA). Many of these projects may, as a result of required mitigation, result in the restoration of previously drained wetlands. Consequently, pending the success of proposed mitigation, the proposed action would have relatively minor cumulative impacts on wetland resources; particularly because wetland mitigation would be constructed in advance of anticipated impacts over the expected construction period.

Mitigation

Permits for placing fill in wetlands under ~~along~~ any alternative ~~the preferred alternative~~ (alignments and lane configurations) must be obtained from COE, under Executive Order 11990, and Section 404 of the Federal Clean Water Act. (Appendix C) Mitigation is discussed in this section with respect to general principles that apply to alternative alignments and lane configurations.

[62] Mary Price, Tribal Wetlands Coordinator. Personal communication.

Wetlands were ~~have been formally~~ delineated as described in Section 6.10 ~~with formal wetland surveys~~. Projected wetland and riparian area impacts were estimated as accurately as possible using "as built" highway plans and cross sections; increasingly accurate measurements of affected wetlands may be available as ~~will be done during final design, using~~ detailed highway plan maps are produced.

The overall wetland mitigation goal must be no net loss in wetland ~~area or quality~~ functions and values. The Council on Environmental Quality (CEQ) (40 CFR 1508.20) provides regulations for sequencing of wetland mitigation, in the following order of priority:

1. Avoidance of Wetlands. Avoiding the impact altogether by not taking a certain action or parts of an action.

2. Minimization of Impacts. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

3. Repair, Rehabilitation, Restoration. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

4. Preservation and Maintenance. Reducing or elimination of the impact over time by preservation and maintenance operations during the life of the action.

5. Replacement. Compensating for the impact by replacing or providing substitute resource or environments.

In the following sections, wetland mitigation is discussed according to these priorities.

Avoidance. Complete avoidance of all wetlands is not possible with any of the lane configurations. Immediately north of the Jocko River crossing (MP 19), however, the alignment would be shifted to the east to avoid fill placement on the east bank of the Jocko River.

As more detailed roadway design is completed, minor alignment adjustments may ~~will~~ be made throughout the proposed action where ~~when~~ practical and feasible to help reduce impacts to wetlands. ~~Several identified~~Areas where the alignment may ~~will~~ be adjusted slightly during the design phase to further avoid wetlands, while still providing a safe highway meeting current design standards, are listed on Table 7.10-~~12~~. In order to assess impacts conservatively, these potential shifts were not considered when calculating wetland impact acreage under any of the alternatives. As can be seen on the photographs in Appendix A, however, in most other areas shifting the alignment away from one wetland area will create similar offsetting impacts to wetlands in the direction of the shift.

Minimization of Impacts. Minimization through selection of the narrowest feasible lane configuration and the best alignment are discussed above. The following site-specific minimization measures are proposed:

At the Jocko River crossing, if the highway is widened, care will be taken to avoid rolling or sliding of fill material into the channel along the river's east bank several hundred feet north of the existing bridge. As needed, work will be done from the roadbed above, keeping machinery out of the channel.

In the Ninepipe area (Mileposts 39.5 to 44.1), placement of fill at potholes will be minimized in some locations through the use of guardrail in conjunction with nearly vertical gabion retaining walls below shoulders instead of normal fill slopes. This measure is proposed at larger potholes and where guardrail currently exists in this area. ~~Where Ninepipe pothole ponds are traversed by the existing highway, if the highway is widened, consideration will be given to using steeper fill slopes below shoulders, to minimize placement of fill in adjacent wetlands.~~ Installation of wildlife mitigation measures will help to reduce road kills. (Section 7.12)

Table 7.10-~~12~~ ~~Proposed~~Potential Wetland Avoidance Sites

From/To Milepost	Avoidance Measure Under Consideration
~~19.0 - 19.2~~	~~North of Jocko River crossing. Avoid alignment shift west into east side of channel; keep fill and machinery out of channel~~
43.3 - 44.0	Potholes in Ninepipe area, just south of Crow Creek. Shift alignment west to avoid encroachment.
48.3 - 48.8	Shift alignment east to avoid wetland encroachment
50.4 - 50.6	Shift alignment west to avoid wetland encroachment

This table has been changed in the final EIS

Repair, Rehabilitation, Restoration. Removal of vegetation will be kept to the minimum necessary for construction and for safety.

All exposed areas will be revegetated to reduce potential erosion and sedimentation, to provide desirable ground cover, to inhibit noxious weed invasions, and for aesthetic purposes.

Perennial stream crossing mitigation measures will include mulching, reseeding, netting, plantings, and other bank stabilization/erosion control measures as discussed in Section 7.9.

Preservation and Maintenance. To assure preservation and maintenance of wetlands, MDT will purchase each mitigation site or a permanent conservation easement. A memorandum of agreement (MOA)~~MOA~~ between CSKT and MDT covering mitigation of unavoidable impacts to wetlands by highway construction ~~is complete and will~~ provides for case-by-case site development plans for replacement wetlands; disposition of land titles and conservation easements; agency coordination (including the U.S. Fish and Wildlife Service (USFWS), COE, the CSKT Shoreline Protection Office (SPO) and Aquatic Lands Conservation Ordinance (ALCO), the Interagency Wetlands Group, the Montana State Historic Preservation Office (MSHPO), the Advisory Council on Historic Preservation (ACHP), and the Flathead and Kootenai culture committees); and funding for development and management.

Annual monitoring will be conducted during the first three ~~few~~ years to determine the effectiveness of the mitigation measures, and to determine the need for additional mitigation measures or adjustments.

Road maintenance does not appear to have a substantial detrimental effect on wetlands in this area. Sand used for icy roads may be plowed into adjacent wetlands. This has not been a problem along the existing highway.

Replacement Wetlands (either created or restored) can only be used if there is no practical alternative to the discharge of dredged or fill material in a wetland which will have less adverse impact on the aquatic ecosystem and without other substantial adverse environmental consequences that do not involve discharges into "waters of the United States."

Replacement must be done according to the following priorities.

1. On-site replacement or enhancement is the preferred type of mitigation.

2. When on-site mitigation is not practical, off-site replacement or enhancement will be considered.

3. When the above are not practical, "wetland banking" will be considered; this allows the highway agency to develop wetland complexes in the general area, and then, as wetland losses occur, the acreage will be subtracted.

A mitigation plan has been prepared which demonstrates replacement for losses of wetland functions and values.[63] Mitigation of the unavoidable wetland losses resulting from the improvement of the highway would ~~can~~ be accomplished ~~done~~ using a combination of on-site and off-site mitigation. CSKT is reviewing the proposed mitigation plan ~~measures,~~ to assure that it ~~they~~ minimizes or precludes potential adverse impacts to the aquatic environment as provided by ~~CSKT~~ ALCO.

Wetlands would be restored or created on four parcels in the area, three of which are considered "onsite" and occur immediately adjacent to US 93; the fourth occurs approximately 0.5 mile from the highway. Wetlands would be created using very minor excavation commensurate with existing topography. Restoration would occur largely by plugging drainage ditches. Water would be provided to sites by groundwater, existing surface flows and irrigation water. Revegetation would initially ~~will mostly~~ occur ~~naturally~~by intense planting and seeding of wetland trees, shrubs, and emergents. ~~Proposed mitigation will involve enhancement and expansion of existing wetlands by placement of check dams, and excavation of new channels, ponds and marshes. At some riparian sites, plantings of shrubs might enhance habitat interspersion.~~ Excavated borrow would ~~will~~ be used for highway construction. Control of grazing (fencing, for example) would ~~will~~ be required at some sites. Details of proposed mitigation activities at each of the sites are presented in the mitigation plan.

Construction of mitigation sites would be staggered over the project construction period in conjunction with proposed highway construction segments. It is expected that mitigation sites offering replacement acreage that corresponds to anticipated impacts of the six proposed highway construction segments would be developed one to two years in advance of anticipated impacts.

Table 7.10-3 compares wetland types, prominent functions, and overall ratings among wetlands expected to be directly affected by the proposed action and proposed mitigation measures for wetlands. Emergent/open water and forested/shrub/emergent wetlands would be restored and created to, at a minimum, match anticipated losses of these communities. A higher proportion of emergent/open water wetlands is proposed to compensate for the expected increased indirect affects to these communities (Section 7.10.2). A portion of the proposed mitigation includes establishment of roadside ditch wetlands to compensate for expected impacts to these communities. A total of 45.17 acres of created and restored wetlands is proposed to compensate for the expected loss of wetlands.

The MDT wetland site evaluation method was applied to proposed mitigation sites in their anticipated "completed" states. As shown on Table 7.10-3, prominent wetland functions lost to construction would be replaced at mitigation sites. Table 7.10-3 also demonstrates that, if mitigation is successful, most of these sites would rate as Category I or II (exceptional to high overall ratings, respectively) wetlands.

~~Wetland projects with potential for about 107 acres of new and enhanced wetlands are now being evaluated. Some of the sites will be eliminated, others retained, with the goal of matching the mitigation area to the total area affected by the preferred alternative. Of the total area, 13% will involve enhancement of existing wetlands and 87% creation of new wetlands.~~

~~Proposed mitigation is "in kind," in close proportion to these percentages of impacted wetland types. Approximately 10% of the total mitigation area now under consideration will involve ponds, 66% marsh habitats, and 24% riparian (stream) wetlands.~~

[63]Draft Wetlands Mitigation Plan. Project F 5-1(9)6. US 93 Evaro to Polson, Montana. Morrison-Maierle. 1996.

~~**Off-Site Wetland Replacement.** Off-site mitigation of the impacts to pond and marsh wetlands in potholes of the Ninepipe area will be emphasized, rather than on-site mitigation. Off-site wetland replacement and enhancement is often desirable because it is more efficient to restore and enhance wetlands in large, off-site tracts, and because on-site mitigation could increase road kills of waterfowl and turtles. Various off-site mitigation tracts are being investigated throughout the area.~~

~~**On-Site Wetland Replacement.** Nineteen small areas next to ROW of US 93 are potential on-site mitigation projects. During further site studies, some sites will be eliminated because of cost, availability, lack of reliable water, poor soil conditions, or land management problems. Other sites that have not yet been identified may be encountered.~~

~~The advantage of on-site projects is that in kind mitigation is easier. Disadvantages are that many prospective wetland sites are small, and extend into adjacent private land as narrow strips along streams or as irregular marshy tracts. This makes easement acquisition, grazing control and general land use management difficult. Fencing of numerous small tracts is typical, along with long term maintenance and easement monitoring costs. There are few large sites near the highway, and reliable water sources are often not available.~~

~~Most of the prospective sites lie mostly on private land, and will require purchase of the property or conservation easements. At all sites, recommended mitigation will involve excavation of borrow to create new ponds and marsh habitat. At some sites, especially those with small streams, low check dams will pond and divert water into marshes or new channels. Various on-site wetland mitigation projects are under review throughout the area.~~

Mitigation for the expected loss of non-wetland riparian areas would primarily be achieved through the protective purchase and enhancement of a 36-acre parcel adjacent to US 93 in the Post Creek area. The wetland/riparian zone bordering Post Creek is considered an extremely high value corridor for grizzly bears and other wildlife, and has been degraded over the years by grazing of livestock. Existing riparian and wetland vegetation along the creek would be enhanced through planting of woody vegetation and exclusion of grazing. Additionally, all riparian vegetation that would be disturbed temporarily by construction activities would be restored. (Section 7.9)

Land use planning and regulation should greatly reduce potential wetland and riparian area impacts potentially resulting from increased population growth and development.

7.11. FLOODPLAINS AND STREAM CROSSINGS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.11.1. Impacts Common to All Alternatives

7.11.1.1. Floodplain Encroachments

As indicated in Section 6.11.2, flood insurance studies have been performed for Missoula and Lake counties, and both counties have adopted standards for floodplain management for non-tribal lands and are participating in the National Flood Insurance Program (NFIP). Any encroachment in a designated floodplain will require a floodplain permit.

Floodplain regulations require that structural improvements create no more than one-half foot of increased flood elevation during a 100-year flood. A 100-year flood will be expected to occur on the average once every 100 years. All culvert and bridge crossings will be designed and constructed to meet this requirement.

The standards are administered by a local floodplain administrator. A floodplain permit will be required for stream crossing structures located in a delineated floodplain.

Using the one-half foot backwater criterion will limit floodplain impacts. In special cases where this criterion cannot be met, other means such as flood easements will be used to mitigate damage to surrounding property owners.

Table 6.11-1 lists the drainage crossings that have been delineated by approximate methods. A floodplain permit will not be required for drainages with no delineation.

7.11.1.2. Permit Requirements

The following permits may be required for highway improvement that affects floodplains or stream crossings:

- An ALCO 87-A permit for all perennial stream crossings will be required by CSKT. CSKT SPO will review the permit application and administer the ALCO process.

- An ALCO permit will also be required for all the smaller drainage crossings listed on Table 6.11-1. The final permit requirements for these structures will be determined after final design. Upon preliminary review of the final design, CSKT SPO will determine whether individual permits will be required for each drainage culvert or whether a project-wide permit can be submitted.

- COE requires that a COE Section 10/404 permit be obtained for all perennial and other stream crossings listed on Table 6.11-1. Upon review of the final design, COE will determine which permit classification, individual or nationwide, will apply for each crossing site.

7.11.2. No Action

With No Action, the existing stream crossings, stream crossing structures and characteristics of the floodplains will not change. Permits will not be required. Existing stream crossing and floodplain problems related to the highway will not be corrected.

7.11.3. Existing Alignment (Except Arlee, Ronan and Polson)

All existing bridges must be widened to accommodate any of the lane configurations.

~~The Jocko River bridge will likely require reconstruction because, in addition to being too narrow to accommodate the new roadway, it is too low to allow needed improvement in vertical grades. If it is widened, it will not adequately pass the estimated 100-year flood flows.~~

~~Reconstruction, instead of just widening, will be necessary at the Post Creek bridge to provide a wider opening for wildlife crossings.~~

All lane configurations will require reconstruction of the roadway on the existing alignment, with extensions of most of the existing pipe or box culverts. It will be necessary to replace most of the existing culverts with longer culverts. Many of the existing culverts are old and in poor condition. The location, elevation and grade of many others will not properly accommodate the new roadway.

Lane Configuration A will require the widening of bridges and extension of culverts because of a slightly wider pavement width and substantially flatter and wider shoulder slopes and fill slopes than the existing roadway. Lane Configurations B, C and D will require progressively greater bridge widening and extension of culverts as summarized in Table 7.11-1.

All of the reconstructed, wider bridges and reconstructed, longer culverts will be designed to adequately pass the estimated 100-year flood flows without substantially increasing historic floodplain elevations.

Allowance for fish passage will be provided at all stream crossings. Culvert crossings will be designed and constructed to allow free and unrestricted passage of fish. Crossing structures will be selected based on the least impact to fisheries, sediment load and wetland or riparian lands.

Finley Creek and Railroad Bridge. This bridge will be widened or replaced in its current location.

Table 7.11-1 Bridge and Culvert Extensions

Lane Configuration	Approximate Additional Bridge Width[1] (Feet)	Approximate Additional Culvert Length[1] (Feet)
Lane Configuration A	12	50
Lane Configuration B	36	74
Lane Configuration C	50	88
Lane Configuration D	76+	114+

Morrison-Maierle, 1993.
[1]Total, both sides, in feet.

Agency Creek

With any of the lane configuration alternatives, the opportunity exists to improve less than desirable flow conditions at the existing Agency Creek crossing. The following options are under consideration:

- Increase the size of the culvert (from the existing 18-inch pipe culvert to approximately a 42-inch pipe culvert) under the highway to convey the estimated 100-year flood flows to an existing gravel pit west of the highway and then to a drainage swale on the railroad ROW. This option will increase the flow into the gravel pit and in the railroad drainage swale but will decrease the flow in the east borrow ditch of US 93.

- Maintain the 18-inch pipe culvert size at its existing location. Convey excess drainage in the east borrow ditch of US 93 northward to a point just south of Arlee, provide a new drainage crossing adequate to accommodate the estimated 100-year flood flow under the highway and a drainage ditch westward to Finley Creek. This option may increase flood flow west of the highway and impact residences or other features located near the drainage ditch.

- Agency Creek eventually flows into Finley Creek but it will not be desirable to provide fish passage from Finley Creek to Agency Creek -- this is to help protect the natural cutthroat fishery in Agency Creek.

Jocko River. The existing bridge will be reconstructed at its existing location. If four lanes are constructed, the additional two lanes will be placed to the northeast side of the existing roadway. Wildlife crossing is not to be enhanced at this location.

The Jocko River bridge will require reconstruction because, in addition to being too narrow to accommodate the new roadway, it is too low to allow needed improvement in vertical grades. If it is widened, it will not adequately pass the estimated 100-year flood flows.

Spring Creek Near Ravalli

Because portions of Spring Creek are located immediately adjacent to the existing highway in this area, all lane configurations will require relocation of the channel for at least 300 to 400 feet.

~~Final design of the preferred alternative will include measures to mitigate the displaced stream channel with a channel change providing improved fish habitat and a crossing with improved fish passage.~~

The current conditions will be improved by providing a direct, same-location crossing of US 93 and the railroad and then placing the creek back in its natural channel west of the railroad. As with all stream crossings, it will be important to adequately protect newly constructed channels from erosion, provide adequate separation between the highway and the stream and revegetate the disturbed area.

Mission Creek. A wildlife crossing will not be desirable at this location because it will encourage wildlife to move into the town of St. Ignatius.

Post Creek. The span of this bridge will be increased to provide adequate width (45 feet minimum on each side of the stream) and clearance (minimum nine feet) for a wildlife crossing to be used by animals following the Post Creek riparian corridor.

Ronan Spring Creek. A new culvert is needed at this location. Any storm drainage systems must be treated, using settling basins or other methods, before discharging into the stream.

Fish Passage. It will be important to provide fish passage at the following creek crossings:

Finley Creek	Jocko Spring Creek
Sabine Creek	Mission Creek
Post Creek	Ninepipe Reservoir
Crow Creek	Ronan Spring Creek
Mud Creek	

7.11.4. Arlee Alignments

Alignment 1, the existing alignment, and Alignments 2 and 3 do not cross any streams and will not require the stream crossing structures.

Alignment 3 crosses the Flathead Irrigation District's R Canal at three locations and will require new irrigation crossing structures.

Alignment 4 will require new stream crossings over Agency Creek, the Jocko River, Pellew Creek and Spring Creek. The Jocko River crossing occurs in the Jocko River Canyon. Conceptual design indicates the bridge will be approximately 90 feet high and have a span of approximately 400 feet. The south abutment will require a trapezoidal fill section approximately 75 feet high and up to 500 feet wide depending on the width of the bridge lane width.

As indicated on Table 6.11-1, the Jocko River floodplain has been delineated by approximate methods in this area. A detailed hydraulic analysis during the design phase for the bridge crossing will be required to determine and document its impact on the floodplain.

Stream crossings over Agency Creek, Pellew Creek and Spring Creek will be accomplished with pipe culverts or box culverts and no particular problems are anticipated.

7.11.5. Ronan Alignments

Since the existing culvert for Spring Creek in Ronan will not accommodate estimated 100-year flood flows, any of the lane configurations on Alignments 1 or 2 will require modifications. If Alignment 3 or 4 is constructed, there will be no modification to the culvert.

Alignments 3 or 4 will require new stream crossing structure on Spring Creek southwest of Ronan and a new irrigation crossing structure for Lateral A6 of the Flathead Irrigation District. Alignment 4 will also require a new crossing structure over Ronan Canal B of the Flathead Irrigation District.

7.11.6. Polson Alignments

Alignment 1 with Lane Configuration A will require no change to the bridge structure over the Flathead River.

Alignment 1 with Lane Configuration B, C or D will require bridge widening, or a new bridge structure over the Flathead River to be located west of the existing bridge. Span lengths will be approximately 125 feet. The new bridge is estimated at a total of 1,575 feet in length.

Alignment 2 will require a new bridge structure over the Flathead River. The bridge is estimated to be approximately 1,325 feet in length. It will use 125-foot spans.

Alignment 3 will require a new bridge over the Flathead River estimated to be 750 feet long, using 125-foot spans.

7.12. FISH AND WILDLIFE

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.12.1. No Action

No Action will have little or no impact on wildlife habitat that is not currently disturbed or reduced in value as a result of displacement of animals from habitat near the highway. Direct mortality from vehicle collisions will increase as a result of increased traffic levels that will occur with or without the improvement of the highway.

7.12.2. Existing Alignment (Except Arlee, Ronan and Polson)

Impacts on wildlife will result from increased mortality and loss of habitat either from direct removal of vegetation or displacement of animals from areas near the highway. Direct mortality from the highway will result from animal-vehicle collisions.

Areas of wildlife habitat that will be affected by the proposed action will differ, depending on the lane configuration. Lane Configuration A will result in the smallest loss of habitat converted to pavement and grass-dominated ROW. Lane Configuration D will result in the largest loss of habitat converted to pavement and ROW, while Lane Configurations B and C will result in intermediate levels of loss of habitat to pavement and ROW.

For the 56.3 miles of highway on the existing alignment from Evaro through Polson, the most extensive habitat that will be affected by the highway improvement will be agricultural lands with hay/pasture and grain fields. Other types of habitat that will be affected include conifer forest, native (palouse) prairie, riparian and unvegetated areas. Refer to Section 7.2 for details about areas of land converted to ROW.

Lane Configuration A may provide slightly less impact risk to wildlife than will the wider lane configurations, but the difference in impact potential will not be substantial. The types of habitat that will be lost (with the exception of wetlands) with all lane configurations are not especially important or limited in the area of the proposed action. Habitat losses with all lane configurations will be not be substantial to regional wildlife populations.

Lane Configuration A may inhibit wildlife crossing of the highway less than will wider lane configurations. All lane configurations probably will exert similar levels of displacement of animals from habitat because displacement is dependent primarily on traffic volume. The existing highway and the proposed action probably have sufficiently high levels of traffic to discourage use of habitat near the highway by wildlife sensitive to noise and human activity (e.g., grizzly bear, gray wolf, elk, and mountain lion).

Lane Configuration A may have slightly less potential than the other lane configurations to cause wildlife mortality from vehicle collisions. Because Lane Configuration A will be narrower than other lane configurations, animals crossing the traffic lanes will be vulnerable to vehicle collision for less time, assuming that animals will cross a narrower highway faster than they will cross a wider highway. Wider lane configurations, however, may provide more opportunity for motorists to avoid wildlife in the traffic lanes. With Lane Configuration A, motorists will have little opportunity to change lanes to avoid wildlife collisions.

Among lane configurations, differences in mortality risk from vehicle collision will be slight. Traffic volume and vehicle speed are the primary factors influencing mortality from vehicles. Traffic volume will be high for all lane configurations.

Although vehicle speed for Lane Configuration A (two-lane highway) will be lower than the speeds for Lane Configurations B, C and D (four-lane highways), vehicles will be spaced more closely in the two lanes of traffic, with fewer gaps in the traffic stream. The higher density of vehicles with Lane Configuration A will offset the lower mortality risk associated with lower speed.

Indirect effects that could increase mortality will relate to increased human activity (e.g., subdivision and business establishments) brought about by improved access. Increased human activity resulting from the proposed action could increase animal-human interactions which could result in mortality due to legal and illegal killing. The potential impact to wildlife will depend on the species, type of habitat affected, behavior of the animal, use of habitat and success of proposed mitigation. The following sections discuss potential impacts on various species of wildlife and suggest mitigation measures. (Sections 7.2, 7.4 and 7.5)

7.12.2.1. Fish

Potential impacts on fish and aquatic habitat could result from habitat degradation from siltation, habitat alteration from construction of culverts and bridges, and channelization. Suspended and deposited sediments enter streams from unvegetated highway embankments and borrow ditches. Deposited sediments reduce habitat volume by filling pools and intergravel spaces which are critical to young fish. Fine sediments in stream gravels affect incubating eggs and developing alevins (sac embryos) by inhibiting dissipation of metabolic wastes of developing embryos in intergravel spaces.[64] Fine sediments in stream gravels also abrade, or scrape off, developing embryos and emerging fry, delay the rate of egg hatching, and reduce survival during incubation.[65] Moving suspended and bedload sediments also abrade aquatic insects (important fish food) and reduce both insect biomass and species diversity.[66] (Sections 7.9, 7.10 and 7.11)

Physical alteration of habitat can result from placement of culverts and bridges. Water velocities can increase and inhibit upstream fish movement if culverts are not sized correctly. Fish migration also can be inhibited or prevented if culvert outflows are perched above the streambed so that fish cannot enter. Bridge construction is not expected to impact the fisheries resource. Construction will follow approved construction measures used in river crossings. Impacts to fish and aquatic habitats will result if water removal from streams for dust suppression will greatly reduce flows. Low stream flows from water removal will reduce living space for fish and aquatic insects (important fish food), increase water temperatures, and make fish more vulnerable to predation.

Mitigation

Impacts to fish and aquatic habitat will be mitigated by use of BMP for erosion control. This will include constructing silt fencing to prevent sediment from the highway embankment from entering water bodies. Bales of straw also will be placed in bottoms of borrow ditches to prevent erosion and sediment transport on slopes. Disturbed areas, embankments, and borrow ditches will be quickly revegetated with perennial vegetation to stabilize soils, as specified in storm water permit documents. Buffer strips of vegetation will be left between water bodies and construction areas to trap sediment, control erosion, and maintain and enhance fish habitat.

Culverts will be sized correctly to prevent water velocities from inhibiting fish passage. Water velocities in culverts should not exceed three feet/second, and minimum water depths in culverts during periods of fish passage should

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[64]Phillips, R. 1971. Effects of sediment on the gravel environment and fish production. In: J. Krygier and J. Hall (eds.), Forest land uses and stream environment. Corvallis, Oregon.

[65]Weaver, T. and R. White. 1985. Coal Creek fisheries monitoring study No. III. Final report. Montana Cooperative Fishery Research Unit, Montana State University, Bozeman, Montana.

[66]Hynes, H. 1973. The effects of sediment on the biota in running water. Ninth Canadian Hydrology Symposium, University of Alberta, Edmonton, National Research Council of Canada.

not be less than eight inches.[67] Culverts will be placed to prevent the ends from being perched above the streambed, except at East Finley Creek. Maintaining minimum instream flows will help ensure that important fisheries are not jeopardized by water removal or inhibition of flows during construction (for instance, by coffer dams or flumes).

Site specific mitigation is proposed at the following key stream crossings.

1. North Fork Finley Creek. To prevent migration of non-native species eastward up this stream CSKT biologists suggest leaving the culvert perched. This barrier will isolate west slope cutthroat trout in the upper section of the creek from rainbow trout in the lower stream. The present culvert is perched.

2. Agency Creek. This creek is largely diverted for irrigation in several ditches at the present crossing of the highway; some water is diverted toward Arlee along the highway borrow ditch. During spring runoff, water flows in these ditches; later in the summer as flows decrease and are diverted for irrigation, the stream dries up, from west to east. Reconstructing the ditches to feed water under the highway through a ~~single open-bottom~~ culvert is recommended. This will allow fish to retreat upstream (eastward) as the stream dries up, and provide for passage of flood waters.

3. Jocko Spring Creek. ~~An open-bottom concrete box~~ culvert rather than a bridge will satisfy fish passage needs on this stream. The road grade will have to be raised considerably to place a bridge.

4. Sabine Creek. ~~An open-bottom~~ culvert at the highway crossing is recommended.

5. Mission Creek. ~~An open-bottom~~ 13-foot culvert with an additional 20-foot cement box culvert for wildlife passage, or a 40- to 75-foot bridge span, are being considered for bear and other wildlife passage. Either of these two design options will provide an adequate stream bed for fish passage.

6. Post Creek. To facilitate wildlife crossings under the highway, an extended, 100-foot long bridge is proposed. The fishery will also benefit because the stream will have an undisturbed bed, and be free to shift laterally under the bridge.

7. Crow Creek. A new culvert will be provided at this location and will be constructed to provide fish passage.

~~7~~8. Ronan Spring Creek. At the highway crossing, the stream enters a long culvert leading southwestward under a bank building; water emerges in a park one block to the southwest. ~~An open-bottom~~ culvert at the highway crossing is recommended; this will provide for fish passage and water velocity control. No substantial benefit to the fishery will result from a new bridge.

~~8~~9. Mud Creek. This creek has excellent spawning habitat, and receives both mountain runoff and spring water. Locally the stream is channelized, and banks are broken down by heavy grazing. ~~An open-bottom~~ culvert at the highway crossing is recommended.

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[67]Leedy, D. and L. Adams. 1982. Wildlife considerations in planning and managing highway corridors. Federal Highway Administration FHWA-TS-82-212.

7.12.2.2. Reptiles and Amphibians

Amphibians, such as salamanders, toads, and frogs, lay eggs in the spring in ponds and standing water. Before egg laying, amphibians move to wetlands and water bodies for breeding and may cross roads and highways. They are vulnerable to vehicle mortality when they cross roads and highways to reach breeding areas. They also are susceptible to mortality when young emerge and disperse from breeding areas to other suitable habitat.

Turtles also are susceptible to vehicular mortality when they cross highways. In the spring, turtles leave wetlands and travel to traditional upland sites to lay eggs. During the breeding season, turtles leave water and may move several hundred yards seeking suitable sites for egg laying. They are vulnerable to vehicular mortality when they are moving to and from egg laying sites. Newly hatched turtles also are vulnerable to mortality if they must cross highways and roads to move from hatching sites to wetlands or during spring or fall dispersal.

Currently, high rates of turtle mortality occur in the Ninepipe-Crow Creek area on US 93. Increasing the width of the highway will increase the mortality risk to turtles, amphibians, and other reptiles. With a wider highway, amphibians and reptiles will spend more time crossing the highway, thereby increasing the probability that they will be struck by vehicles.

Mitigation

Highway mortality to turtles and other amphibians and reptiles may be reduced if effective, practical designs can be developed for encouraging them to cross under the highway in culverts rather than travelling over the highway. Biologists representing CSKT, USFWS and MDT currently are evaluating several proposals, including placement of one-foot high concrete "drift fence" to direct turtles towards proposed and existing culverts under the highway at some of the larger ponds. If it is determined these designs will be effective and practical, they will be implemented during project construction.

Locations where turtle mortality is most concentrated and where these crossings may be most effective include: 1) near the scenic turnout south of Ronan, 2) south of Crow Creek, 3) and 4) the two large permanent wetlands split by the highway in the area of the Ninepipe National Wildlife Refuge.

7.12.2.3. Birds

Highway construction can have both positive and negative impacts on bird habitat and food availability. Increased mortality will occur resulting from vehicular collisions. A nesting area for bank swallows will be displaced by widening the highway through the narrow portion of the Jocko River Canyon south of Ravalli because widening the highway will remove the steep banks of lacustrine sediment at the edge of the existing highway.

Typically, roadsides and borrow ditches provide relatively dense and succulent vegetation growth due to enhanced moisture runoff from paved roadways. Increased growth of vegetation along highways often leads to larger populations of insects and small mammals, important food for hawks, owls, and other birds.[68,69] Vegetated roadsides and borrow ditches also provide nesting cover for pheasants, gray partridge, and ducks.[70,71] Bridges provide nesting sites for cliff swallows, barn swallows, pigeons, dippers, and other birds adapted to rock and cliff nesting.

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[68]Huey, L.M. 1941. Mammalian invasion along the highway. Journal of Mammalogy 22(4):383-385.

[69]Ferris, C. 1974. Effects of highways on red-tailed hawks and sparrow hawks. Master's Thesis. West Virginia University, Morgantown, West Virginia.

[70]Oetting, R. and J. Cassel. 1971. Waterfowl nesting on interstate highway right-of-way in North Dakota. Journal of Wildlife Management 35(4):774-781.

[71]Leedy, D.L., T.M. Franklin, and E.C. Hekimian. 1975. Highway-wildlife relationships, Volume 2. Annotated bibliography. Report No. FHWA-RD-76-5.

Although food and habitat values can be improved along highways, attraction of birds to roadsides increases mortality risk due to vehicle collisions. Fences and utility poles that parallel highways provide perch sites for hawks, owls, ravens, and magpies seeking insects, small mammals, and animals killed by vehicles. Birds often are hit by vehicles as they pursue prey or are attracted to other road-killed birds and animals. Birds, such as ducks, pheasants, gray partridge, horned owls, and larks, are vulnerable to traffic because they seek roadsides for grit in winter when other areas are snow covered.[72] Other birds commonly frequenting the roadside, also vulnerable to mortality from traffic, include Brewer's blackbird, red-winged blackbird, meadowlark, American robin, and American kestrel.

Currently, in the Ninepipe-Crow Creek area pheasants and waterfowl experience high rates of mortality along US 93. Duck broods cross the highway when moving from upland nesting areas to wetlands. Canada geese also are vulnerable to mortality on the highway because they often nest on small ponds and move to Ninepipe Reservoir for young rearing.[73] Canada geese with young have been documented to travel a mile or more from nest sites to larger water bodies.[74]

Mitigation

Reduction of mortality to raptors by providing additional perches in open, agricultural areas and grasslands away from the highway ROW was considered. Typically, in the Mission Valley most perch sites are power poles and fencelines along roads and highways. However, birds still will be attracted to the highway because of road-killed prey and high populations of insects and small mammals usually present along roadways. Few birds are observed scavenging on the existing highway. Little benefit will be obtained by construction of perches, and this mitigation measure is not recommended along the existing alignment. Raptor proofing of powerlines is necessary. Refer to Section 7.13.4 for discussion of bald eagle mitigation along Polson alignments.

Reduction of mortality to duck broods by constructing underpasses linking wetlands or wetlands and upland breeding sites on either side of the highway was considered. This mitigation measure will require use of 52-inch culverts or larger. Because this form of mortality is low and use of such large culverts is not cost-effective, it is not recommended.

The Migratory Bird Treaty Act ~~prohibits~~includes prohibitions on the killing, pursuit, taking and hunting of all migratory birds, including swallows. Impacts to bank swallow colonies~~swallows~~ could be reduced by constructing after the swallows have nested and young have left the nest. Nesting and rearing occur April through July. By leaving near-vertical cuts in lacustrine sediments adjacent to the highway south of Ravalli Canyon, habitat for nesting will be replaced following construction. No revegetation will be needed at the site. All necessary slope cutting must be done before April 15. Swallows returning earlier will shift to other suitable habitats within the area. Work could probably resume in August with the start of swallow migration. MDT or CSKT biologists could refine these dates and coordinate with contractors to possibly allow a better window of construction. Any request for construction at the swallow sites after April 15 should be considered, but with the provision that no birds occupy the colony at the time of work.

[72]Hammond, M. 1941. Fall and winter mortality among Hungarian partridges in Bottineau and McHenry counties, North Dakota. Journal of Wildlife Management 5(4):375-382.

[73]Morrison-Maierle; personal communication with West. 1992.

[74]West, W.. 1992. Annual cycle of the giant Canada goose flock at Trimble Wildlife Area. Masters thesis. University of Missouri, Columbia, Missouri.

7.12.2.4. Mammals

Impacts to small mammals (e.g., meadow voles, ground squirrels, rabbits, skunks, mink, porcupines, and muskrats) will result from vehicle collisions as they cross the traffic lanes. Impacts to larger animals will result from collision mortality and displacement from habitat near the highway.

Most studies of wildlife mortality resulting from traffic have dealt with impacts on deer. Deer mortality from vehicles is proportional to traffic volume, speed and population; however, time of day, time of year, and habitat characteristics adjacent to the highway also influence mortality.[75,76] According to Feldhamer et al.[77], deer mortality on highways is highest in areas with forest habitat adjacent to highways and lowest where broad, uninterrupted areas of agricultural lands abut ROW. More deer are killed in fall and spring than during other seasons because forbs and grasses along ROW are the first to green-up and remain succulent into fall.

In 1988, O'Gara and Harris[78] studied deer mortality in the Swan Valley of Montana and found that 90% of deer killed in winter along MT 83 were in poor physical condition. They hypothesized that sick or malnourished deer travel on highways plowed clear of snow because movement requires less energy. Also, weakened deer are not alert and cannot easily jump or climb snowbanks along roads to avoid traffic.

Expansion of US 93 may result in somewhat greater displacement of sensitive species of wildlife; however, the existing highway with its high traffic volume probably exerts a near-maximum level of displacement under current conditions. The expanded highway width may deter some species or individuals of some species from attempting to cross the open traffic lanes. The extent to which animals will be inhibited from crossing the expanded highway will depend primarily on the specific behavioral characteristics of the animal trying to cross, including its response to crossing openings, changes in substrate, cover requirements and traffic volume. Although it will be desirable for animals to use habitat on both sides of US 93 to reduce habitat fragmentation, mortality risk increases when animals cross the traffic lanes. Widening the highway and constructing steep vertical slopes in some parts of Ravalli Canyon, which is the only segment of the proposed action in which highway improvement may increase steep slopes in a wildlife crossing corridor, will inhibit and may preclude crossing of wildlife in some areas.

Mitigation

Attempts to mitigate lethal deer-vehicle encounters have met with mixed success. In 1986, Feldhamer et al.[79] expressed the view that the most common approach is a warning sign; however, signs appear to be of little value in reducing the number of road-killed deer. Roadside mirrors also have been ineffective in most, but not all, instances. Highway underpasses of sufficient size (13 x 59 x 49 feet - height x width x length) were effective in allowing migratory mule deer to cross under an interstate highway in Colorado, although deer were reluctant to use them.[80] In 1976, Ward et al.[81] found that elk will not use underpasses to cross an interstate highway in

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[75]Leedy, D.L., T.M. Franklin, and E.C. Hekimian. 1975. Highway-wildlife relationships, Volume 2. Annotated bibliography. Report No. FHWA-RD-76-5.

[76]Leedy, D. and L. Adams. 1982. Wildlife considerations in planning and managing highway corridors. Federal Highway Administration FHWA-TS-82-212.

[77]Feldhamer, G., J. Gates, D. Harman, A. Loranger, and K. Dixon. 1986. Effects of interstate highway fencing on white-tailed deer activity. Journal of Wildlife Management 50(3):497-503.

[78]O'Gara, B. and R. Harris. 1988. Age and condition of deer killed by predators and automobiles. Journal of Wildlife Management 361-320.

[79]Feldhamer, G., J. Gates, D. Harman, A. Loranger, and K. Dixon. 1986. Effects of interstate highway fencing on white-tailed deer activity. Journal of Wildlife Management 50(3):497-503.

[80]Reed, D. 1981. Mule deer behavior at highway underpass exit. Journal of Wildlife Management 45(2):542-543.

[81]Ward, A., J. Cupal, G. Goodwin, and H. Morris. 1976. Effects of highway construction and use on big game populations. Federal Highway Administration. FHWA-RD-76-174.

Wyoming; however, in 1992, Becker et al.[82] cites studies in Canada which documented the use of underpasses on the Trans-Canada Highway by deer, moose, wolves, coyotes, black bears, and grizzly bears.

Studies of wildlife use of underpasses of I-75 in Florida found that endangered Florida panther and other animals, including bobcats and raccoons, crossed through underpasses to gain access to habitat fragmented by a major highway.[83,84] Underpasses and bridges were constructed so that they did not present a tunnel appearance to animals approaching the highway. A clear view of habitat from one side of a bridge or underpass to the other, to present a continuous expanse of cover was a high priority in design. A width of about 100 feet and a height of about eight feet was found to be the most cost-effective design. Extending bridges so there was at least 40 feet of land on either side of the stream also was recommended. Wing fences 10 to 13 feet high were used to direct animals to underpasses.

A wildlife overpass probably offers the best option in terms of likelihood of use by large carnivores and ungulates. Four wildlife overpasses are presently being constructed in Canadian national parks to facilitate movement of large carnivores across the Trans Canada Highway, and similar overpasses are being constructed in France to prevent the disruption of brown bear habitat and to avoid collisions.[85]

The most effective means of preventing highway-associated mortality of deer and elk appears to be through the use of nine-foot high fence along ROW to exclude animals from traffic lanes.[86,87] The use of fence, however, leads to fragmentation of habitat and can trap deer and elk on the highway ROW if they are able to skirt the edges of the fence. In areas with many access points and developments along the highway, continuous fencing is impractical and its effectiveness is greatly reduced.

The mitigation measures proposed to reduce impact risk to deer and other species of wildlife, including grizzly and grey wolf, are as follows.

1. **Wildlife Passage Structures.** The major mitigation measure that has been proposed is to build a wildlife overpass at Milepost 10.3. The overpass will include two arch structures, one over the two northbound lanes and one over the two southbound lanes. The structures will support a minimum of four feet of topsoil on which vegetation will be established to provide cover for wildlife. The structure will create a tunnel for highway traffic approximately 165 feet long.[88] ~~two wildlife passage structures in the 0.4 mile forested area east of Joe's Smoke Ring (north of Evaro).~~ Existing wildlife activity has been documented by studies conducted by CSKT.[89] These studies used camera surveillance and track surveys during 1992 and winter 1993. ~~The structures proposed are:~~

   ~~Wildlife underpasses will be constructed at Mileposts 10.3 and 10.5. The wildlife underpass at milepost 10.3 will be a three-span structure with a 60-foot center span, and the structure at milepost 10.5 will include a single 60-foot span with vertical wall abutments. At the underpasses,~~

[82]Becker, D., D. Lipscomb, and A. Soukkala. 1992. Evaro corridor wildlife use study and mitigation recommendations. U.S. Highway 93 Reconstruction Project.

[83]Evink, G. 1992. Wildlife crossings of Florida I-75. Transportation Research Record 1279.

[84]Foster and Humphrey. 1992.

[85]Becker et al. 1993.

[86]Bashore, T., W. Tzilkowski, and E. Bellis. 1985. Analysis of deer-vehicle collision sites in Pennsylvania. Journal of Wildlife Management 49(3):769-774.

[87]Feldhamer, G., J. Gates, D. Harman, A. Loranger, and K. Dixon. 1986. Effects of interstate highway fencing on white-tailed deer activity. Journal of Wildlife Management 50(3):497-503.

[88]Morrison-Maierle Environmental Corporation, Biological Assessment, F 5-1(9)6, U.S. Highway 93, Evaro through Polson, 11 October 1996.

[89]Becker, D., D. Lipscomb, and A. Soukkala. 1992. Evaro corridor wildlife use study and mitigation recommendations. U.S. Highway 93 Reconstruction Project.

~~the highway will be divided to provide a 40-foot median to create an opening at the center of the structures to avoid a "tunnel effect" and thereby increase the use by animals crossing the highway.~~

Between about Mileposts 10.0 and ~~10.8~~10.6 (the section with the wildlife overpass~~crossing structures~~), the highway ROW will be bordered with 10-foot high fences located 150 feet from the outer edge of the borrow pit on both sides of the highway. Near the overpass~~two wildlife crossing structures~~, the fence will be aligned and connected with the structure to allow and encourage movement of animals through the overpass~~underpasses~~.

Vegetation outside fences will provide security for animals approaching the underpasses. Tree and shrub plantings that will screen animals from traffic, and will be beneficial where natural vegetation has been removed or is sparse.

Vegetation will be managed between the fences and the highway to provide escape and security cover for animals that become trapped inside of fences, and to provide good visibility near the roadway for both drivers and animals. Dead-end roads leading off the highway will be closed and revegetated.

A management plan and agreement for the Evaro wildlife corridor will be prepared. This plan will include details of land use and vegetation management at and near the structures and management for the entire area so that future rural development does not preclude wildlife movement to and from the structures. Topics which will be covered are: logging, rural homesite development, and road construction and management. A plan, with provision for funding, is also needed for monitoring wildlife usage of the overpass~~structures~~.

Post signs advising motorists of wildlife crossing the highway in the Evaro, Post Creek, Mission Creek, Ninepipe and Ravalli Canyon areas.

Close and revegetate dead-end roads leading off the highway, as part of a joint effort by CSKT, Missoula County and USFWS to develop planning for special management status in the Evaro area.

~~Noise dissipation measures in wildlife underpasses~~

2. **Extended Bridge at Post Creek.** An extended bridge at Post Creek will allow passage of deer and other animals (including grizzly). A 100-foot long bridge to replace the existing 50-foot bridge ~~under~~ is under consideration. This design will span the creek with at least 15 meters of land on either side of the stream and an average height of three meters or higher. A small grade raise of the highway will be needed to provide sufficient vertical clearance.

   Vegetation dominated by shrubs will be established both upstream and downstream of the bridge and, if possible, under the bridge.

3. **Mission Creek.** A~~n open bottom~~ 13-foot culvert for flood-water and fish passage is proposed. A 40- to 75-foot long bridge at Mission Creek was considered, to replace the existing 13-foot wide by eight-foot high culvert. This will include excavation to provide an opening, and raising roadway grade about four feet, to provide three meters of vertical clearance, and about 15 meters of land on either side of stream. This option is not recommended because of the proximity to developed areas in and around St. Ignatius, where benefit to wildlife passage will be limited.

4. **Other areas considered for wildlife crossings.** Other potential wildlife crossing sites were evaluated, including the Jocko River and the area of the Ninepipe National Wildlife Refuge. None of the other sites were identified as desirable for developing special wildlife crossing facilities.

7.12.2.5. Vegetation

Clearing and related construction activities could permanently remove individuals or small groups of plants of special concern near Ninepipe Reservoir and near Kicking Horse Reservoir.

One of the more serious concerns associated with the highway reconstruction entails the creation of habitat suitable for noxious weed colonization. Exposed soils, particularly adjacent to highways, are vulnerable to weed establishment. Off site movement from highway corridors onto adjacent land can result in serious land devaluation and productivity, added operational costs and the potential for environmental degradation through improper herbicide use. The presence of flowing water in the immediate vicinity lends an additional risk to downstream landowners concerned over noxious weed invasion. Seeds and plant fragments can travel great distances in water before resettling in a germinable position.

Mitigation

A survey of ROW ~~of the preferred alternative~~ will be done by a biologist before construction begins. This survey should concentrate on the dry range areas in Ravalli Canyon and Ravalli Hill, the Ninepipe pothole area, and any local remnants of native prairie.

In the event additional sensitive plant surveys are conducted prior to disturbance and population(s) are discovered, appropriate means of mitigating their loss will be initiated. This may include, but not be limited to, transportation to like habitats off site, seed collection and reseeding, preservation of the site if possible, and/or minor realignment. Coordination of activities with CSKT and Montana Natural Heritage Program personnel will assure that efforts to relocate or reestablish populations will have reasonable chance of success.

Weed control associated with construction activities of this nature will be approached in two phases; temporary (construction) and permanent (post-construction). A predisturbance survey and/or review of weed district records will indicate the presence or prior occurrence of weeds in the disturbance corridor. The assumption can be made that a sizable seedbank of weed seeds exists on site if either of the above conditions are met. It is imperative that noxious weeds be prevented from going to seed on exposed soils in light of the potential of one spotted knapweed plant to produce upwards of 2,000 thousand seeds in one season.

Seeds or plant fragments attached to construction equipment or vehicles and placement of contaminated fill or erosion control material are common means of weed seed introduction. ~~Judicious cleaning of equipment and selection of weed seed free materials will be employed.~~ Equipment entering the job site will be inspected to ensure that it is not carrying large amounts of soil or vegetation that may carry noxious weed seeds -- if necessary, the equipment will be cleaned.

Temporary weed control will entail careful monitoring of newly exposed soils and immediate removal of noxious weed plants. ~~Handpulling or hoeing will be employed for scattered plants.~~ Grubbed plants will be collected and disposed of if any flowers have opened. Spot spraying will be utilized if excessive numbers of weeds establish on site. Herbicide applications will be made by a knowledgeable, licensed applicator. Spraying will be timed to achieve maximum efficacy. Spraying is not recommended on topsoil stockpiles or in highly erosive areas. Short residual herbicides will be used to prevent possible phytotoxicity to newly emerged grass seedlings once seeding is conducted. In no case, shall soil sterilants be used.

Control of weeds and weed seeds will be a requirement of the construction contracts. Permanent weed control will be approached through preventive measures. Proper grading, topsoil treatment, seedmix selection and seeding operations will be employed to establish a vigorous cover of competitive, desirable species. Monitoring and removal of even small numbers of individual weeds for two to three years following disturbance will greatly enhance grass stand development.

7.12.3. Arlee Alignments

Alignments 1, 2 and 3 will have similar impacts on fish and wildlife. These impacts will be negligible.

Alignment 4 will have minor effects on fisheries in the Jocko River through construction of a bridge at a point with no existing bridge. Construction impacts will be short-term and will result from increased sedimentation. At the Jocko Spring Creek crossing, an open-bottom concrete box or culvert rather than a bridge will satisfy fish passage needs.

This alignment will have a higher potential than other alternate alignments to affect wildlife through direct mortality caused by vehicle collisions. This alignment will traverse riparian areas interspersed with agricultural land and residential areas, which provide habitat for a variety of birds, small mammals, and deer. Bald eagles wintering along the Jocko River will be displaced from riparian habitat by construction over the Jocko River at an area with little or no existing traffic. This impact will be minor because bald eagles will select suitable habitat at more secure locations along the Jocko River or other ice-free water bodies for perching and foraging.

7.12.4. Ronan Alignments

All alignments will pose similar, negligible impact risks to wildlife. Fish and fish habitat in Ronan Spring Creek will be adversely affected with all alignments as a result of increased sediment levels during construction. These impacts from sediment will be short-term and minor with appropriate mitigation.

Alignment 4 will pose slightly greater impact risks to fish in Ronan Spring Creek. Alignments 1, 2 and 3 will affect habitat that has been degraded by removal of riparian vegetation and urban development. Alignment 4 will affect higher value aquatic and riparian habitat. Sediment levels will be carried downstream to habitat with higher fish populations.

7.12.5. Polson Alignments

A potential impact common to all Polson Alignments is increased animal/vehicle collision. This impact is expected to be low, for the following reasons. ~~Wildlife near Alignment 1 are accustomed to US 93.~~ Widening the highway should not change the species' perceptions of the area. Alignments 2 and 3 are in both agricultural areas and existing rights-of-way. In general, wildlife densities are lower in agricultural areas because of the homogeneous habitat. ~~In addition, wildlife that might occur in these areas are already somewhat accustomed to disturbance.~~ Therefore, Alignments 1, 2, and 3 will not adversely impact wildlife through substantial increases in animal/vehicle collisions.

Although the highway will not impede wildlife movement, extensive development over the long term could present a barrier. Some of the area around Alignment 1 near the city of Polson is presently developed, and development likely will increase with improvement of the highway. Wildlife barriers posed by expected development near Alignment 2, which is mostly undeveloped and Alignment 3, which is presently undeveloped, could have long-term adverse impact on wildlife in the area.

Alignment 1 will have less impact on wildlife than Alignments 2 or 3. The greatest impact to wildlife will be loss of habitat. Lane Configuration A will have the least habitat lost or converted to grass-dominated ROW, and Lane

Configuration D will have the most habitat lost or converted to grass-dominated ROW. The existing habitat generally has low wildlife densities. Approximately two acres of urban habitat will also be impacted. Areas of wetlands will be lost at irrigation canal crossings and the Flathead River. Although some habitat will be lost, no unique or limiting habitats are known in the area, and no substantial adverse impacts to wildlife are expected as a result of the habitat loss along this alignment.

Alignment 2 will have greater impact on wildlife than Alignment 1. Most habitat lost will be agricultural. Lane Configuration A will have the least habitat lost or converted to grass-dominated ROW, and Lane Configuration D will have the most habitat lost or converted to grass-dominated ROW. Some habitat loss will also occur in wetlands at crossings of irrigation canals and the Flathead River. In addition, there will be some loss of urban habitat.

Habitats crossed by this alignment are neither unique or limiting in the area. Bridge placement could displace waterfowl and shorebirds. However, no substantial adverse impacts to wildlife are expected as a result of the habitat loss along this alignment. Mitigation measures necessary will be done through implementing those proposed for the bald eagle.

Alignment 3 impacts are expected to be similar to those for Alignment 2. Lane Configuration A will have the least habitat lost or converted to grass-dominated ROW, and Lane Configuration D will have the most habitat lost or converted to grass-dominated ROW. No urban habitat will be impacted. Areas of wetlands will be impacted at irrigation canal crossings, depressions, and the Flathead River. Mitigation measures are those proposed for the bald eagle.

7.12.6. Cumulative Impacts

Improvement and reconstruction of highways in northwestern Montana will act cumulatively with the proposed action to adversely affect wildlife through vehicle-animal collisions, direct loss of habitat, and displacement from habitat near highways. Highway improvement generally will increase traffic speed, which will increase probability of vehicle-animal collisions; however, mortality risk from increased speed and traffic volume may be offset by increasing motorists' visibility of animals on or near the highway, increasing motorists' opportunity to avoid animals by changing lanes, and through construction of fences or other mitigation measures to reduce impacts to wildlife.

7.13. THREATENED AND ENDANGERED SPECIES

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.13.1. No Action

No Action will have little or no impact on wildlife habitat that is not currently disturbed or reduced in value as a result of displacement of animals from habitat near the highway. Direct mortality from vehicle collisions will increase as a result of increased traffic levels that will occur with or without the proposed action.

7.13.2. Existing Alignment (Except Arlee, Ronan and Polson)

7.13.2.1. Peregrine Falcon

The proposed action will not affect peregrine falcon nesting sites. The highway, however, passes through the Ninepipe area where peregrine falcons are occasionally present as seasonal migrants. CSKT has initiated a reintroduction program in this area. There is a slight risk to peregrine falcons from vehicle collision, particularly when they are pursuing prey and may not be aware of approaching traffic. In general, peregrine falcons are able to avoid vehicle collisions because of their high mobility and speed.

No mitigation is needed or proposed for peregrine falcon. Raptor-proofing of powerlines, mentioned in Section 7.13.2.2 for the protection of bald eagles, also may benefit the peregrine falcon and other raptors.

7.13.2.2. Bald Eagle

No nesting bald eagles will be affected by the proposed action. The nearest nests are more than a mile from US 93. This will be sufficiently far from construction activity and traffic to have negligible impact on nest and brood rearing. Eagles nesting within one to two miles of US 93 probably have become accustomed to traffic and noise levels which will change little following construction.

Wintering bald eagles will have a low probability of being affected by improvement of the highway; however, potential impacts to bald eagles could result if wintering eagles were attracted to road-killed animals. Eagles feeding on road-killed animals will be vulnerable to collisions with vehicles.

Mitigation

Removal of road-killed animals, as part of normal MDT maintenance operations, from ROW will reduce the potential for bald eagle impacts to negligible levels. ~~MDT will fund CSKT to remove and dispose of road-killed animals.~~

Off-highway perches are not recommended, because adequate raptor perches exist away from the highway.

Raptor-proofing of powerlines is needed.

7.13.2.3. Grizzly Bear

Impacts of highways on grizzly bears include lethal bear-vehicle collisions, habitat modifications, and stress-related behavioral adaptations (such as displacement and habituation to humans). Avoidance and displacement of grizzly

bears from roads have been reported by various researchers.[90] Most studies have been conducted concerning the impacts of secondary roads and trails rather than major highways on grizzly bear displacement. In 1977, Lloyd and Fleck[91] reported that grizzly bears avoided habitat within 0.5 mile of roads in southeastern British Columbia. Similarly, grizzly bears along the Rocky Mountain Front Range in Montana avoided habitat within two miles of automobile roads and four miles of four-wheel drive roads.[92] In 1988, Zager and Jonkel et al.[93] observed that grizzlies in northwestern Montana were more likely to use logged areas if the areas were adjacent to secondary and closed roads rather than near primary roads.

In 1985, McLellan and Mace[94] studied grizzly bears in British Columbia, adjacent to Montana, and found that grizzlies used habitat less if they were 300 feet or less from roads, with bears in remote areas being more sensitive to disturbance than bears habituated to humans. Data from their studies show that a disproportionately high number of bear mortalities occur near roads due to shooting.

In 1983, Aune and Stivers[95] found that increased traffic may substantially reduce available habitat. Data show that habitat as much as 0.6 mile from roads may be used less by grizzlies.

Grizzly bears generally avoid roads regardless of the productivity of adjacent habitats, but may reduce the degree of avoidance of high quality habitats during certain seasons and in years when food supply is limited.[96] In 1989, Aune and Kasworm[97] reported that bears avoided habitats within 1,500 feet of roads during all seasons; however, berry patches were not strongly avoided in fall. Berries are of critical nutritional importance in fall. In 1980, Schallenberger and Jonkel[98] found mean distances of bears from roads decreased in poor food supply years, suggesting that bears compromised security factors when stressed by food shortages.

Security cover adjacent to roads may influence how grizzly bears respond to human activities. In 1989, McLellan and Schackleton[99] never recorded a bear in cover fleeing from an approaching vehicle. Bears exhibited the strongest aversion when they were in direct view of vehicles and away from protective cover.

Responses of grizzly bears to roads may differ with the size of the road and traffic levels. In 1985, Aune and Stivers[100] reported that grizzlies often used jeep trails, occasionally used secondary roads at night, and rarely used heavily traveled primary roads. Seasonal increases in traffic volume in Yellowstone National Park during spring and early-summer resulted in increased avoidance of habitat near roads. In 1984, Brannon[101] reported that bears

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[90]Frederick, G. 1991. Effects of forest roads on grizzly bears, elk, and gray wolves: A literature review. U.S. Department of Agriculture, Forest Service, Kootenai National Forest, Libby, Montana.

[91]Lloyd, K. and S. Fleck. 1977. Some aspects of the ecology of black and grizzly bears in southeastern British Columbia. British Columbia Fish and Wildlife Branch, Victoria.

[92]Schallenberger, A. and C. Jonkel. 1980. Rocky Mountain East Front grizzly studies, 1979. Annual report. University of Montana, Border Grizzly Project, School of Forestry, Missoula, Montana.

[93]Zager, P. and C. Jonkel. 1983. Managing grizzly bear habitat in the northern Rocky Mountains. Journal of Forestry 81(8):524-526.

[94]McLellan, B. and R. Mace. 1985. Behavior of grizzly bears in response to roads, seismic activity and people. Preliminary report. Canadian Grizzly Project, Cranbrook, British Columbia.

[95]Aune, K. and W. Stivers. 1983. Rocky Mountain Front, grizzly bear monitoring and investigation. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

[96]Frederick, G. 1991. Effects of forest roads on grizzly bears, elk, and gray wolves: A literature review. U.S. Department of Agriculture, Forest Service, Kootenai National Forest, Libby, Montana.

[97]Aune, K. and W. Kasworm. 1989. Final report East Front grizzly bear study. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

[98]Schallenberger, A. and C. Jonkel. 1980. Rocky Mountain East Front grizzly studies, 1979. Annual report. University of Montana, Border Grizzly Project, School of Forestry, Missoula, Montana.

[99]McLellan, B. and D. Schackleton. 1989. Immediate reactions of grizzly bears to human activities. Wildlife Society Bulletin 17:269-274.

[100]Aune, K. and T. Stivers. 1983. Rocky Mountain Front, grizzly bear monitoring and investigation. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

[101]Brannon, B. 1984. Influence of roads and developments on grizzly bears in Yellowstone National Park. Interagency Grizzly Bear Study Team, Bozeman, Montana.

were located at the greatest average distance from roads in summer when traffic exceeded 6,000 vehicles per day. Grizzly bears increased their degree of response to vehicles in Alaska when traffic volume and noise increased.[102]

The highway expansion will not affect grizzly bear use of habitat in the wetlands and riparian areas east of Ninepipe National Wildlife Refuge. Important grizzly bear feeding areas are sufficiently distant from the highway to prevent displacement from these lowland habitats.

Grizzly bear habitat in the area may be indirectly affected by development associated with improvement of the highway. However, it is not possible to quantify such impacts without knowledge of where such associated development may or may not occur. With or without highway improvement, the recent pattern of growth and development is expected to continue in the area from Evaro through Polson. Consequently, an improved highway would be a factor that combines with other factors to provide transportation services that support any increase in the rate of human population growth (Section 7.4). Land use planning should greatly reduce potential impacts to grizzly bear habitat potentially resulting from growth.

Both the existing highway with its high traffic volume and an expanded highway will inhibit grizzly bear movement to areas of the Mission Valley west of US 93. Grizzlies will be reluctant to approach and cross a busy highway, particularly since there is little cover to protect bears from direct view as they approach the highway. Displacement of grizzlies from habitat west of US 93 within the Mission Valley may indirectly benefit some ~~the~~ bears by ~~preventing~~reducing human-bear lethal encounters. ~~High levels of human activity and settlement in Mission Valley west of the highway may not be compatible with long-term grizzly bear survival.~~

If grizzly bears were present in the Evaro area, it is likely the expanded highway will displace them from habitats within 0.5 to one mile from the highway. Although the expanded highway will inhibit grizzly bear use of habitat in the vicinity of the highway, it is likely that this displacement will be similar to that caused by the existing highway with its high traffic volume. If grizzly bears were present in the Evaro area and attempted to cross the highway over the traffic lanes, the potential for collision with vehicles will be relatively high because of high levels of traffic.

Mitigation

Mitigating potential impacts to grizzly bears will require that safe passage of bears across the highway be encouraged, particularly in the Evaro area. Underpasses may be useful in allowing bears to safely cross the highway; however, there are little data concerning whether grizzly bears will use an underpass rather than moving over the traffic lanes. It is likely that bears will be encouraged to cross over the highway at points where dense vegetation abuts the highway ROW. Encouraging bears to cross over rather than under the highway will increase the mortality risk to bears. It is questionable whether promoting movement across the highway as a result of maintaining dense stands of vegetation along the roadway will offset the mortality risk of vehicle collision associated with crossing busy traffic lanes. In 1982, Leedy and Adams[103] expressed concern that when a highway bisects habitat occupied by threatened and endangered species, it may be better to maintain wide, closely clipped rights-of-way to discourage animals from getting on the road rather than encourage crossing and increasing mortality.

~~Suggested m~~Mitigation for grizzly bears will be construction of an extended bridge over Post Creek and construction of ~~underpasses and~~ an overpass, along with fencing and related measures, at the Evaro area (Section 7.12.2.6).

[102]Interagency Grizzly Bear Committee. 1987. Grizzly bear compendium. U.S. Fish and Wildlife Service, Missoula, Montana.

[103]Leedy, D. and L. Adams. 1982. Wildlife considerations in planning and managing highway corridors. Federal Highway Administration FHWA-TS-82-212.

7.13.2.4. Gray Wolf

Information on the response of wolves to roads is mostly limited to radio telemetry studies and wolf track surveys.[104] Wolves often travel in winter on plowed roads with low traffic volumes, but avoid roads in summer. In 1991, Frederick[105] cited data that dispersing and lone wolves (wolves not affiliated closely with a pack) typically travel over larger areas than members of a stable pack and, therefore, are more likely to encounter roads.

Wolves tend to avoid areas with high levels of human activity even though the areas may have high quality habitat and food resources.[106] Although wolves travel through the Evaro area, high levels of human activity undoubtedly discourage wolves from moving through the area and prevent wolves from expanding their home ranges to include the densely settled habitat adjacent to US 93 as permanent habitat.

Mitigation

Mitigation of impacts to gray wolves poses the same conflicts as mitigation of grizzly bear impacts. Although it is desirable to encourage highway crossing to reduce impacts of habitat fragmentation, it is undesirable to increase the risk of mortality by promoting passage over traffic lanes. The same mitigation as proposed for mammals (Section 7.12.2.4) is proposed for wolves.

7.13.3. Arlee and Ronan Alignments

Impacts to threatened and endangered species will be the same as on the existing alignment. No mitigation specific to these alignments is suggested.

7.13.4. Polson Alignments

Along all alignments, potential impacts to bald eagles are associated with construction of a new bridge over the Flathead River. Construction during the winter may displace eagles from their traditional foraging areas along the river.

Limiting the construction of the bridge and related activities to the summer will minimize impacts to bald eagles and other birds that forage along the river during the winter, which is the heaviest period of use.

Alignment 1 is expected to have the lowest impacts to bald eagles. Eagles are presently accustomed to disturbances related to the existing bridge. A slight relocation of the bridge should not disrupt current foraging patterns. Also, preferred foraging areas or perch sites are not crossed by this alignment. All known sites are downstream of Alignment 1.

No mitigation measures will be necessary for this alignment.

Alignment 2 has the highest potential for adverse impacts to bald eagles. The bridge will cross over feeding areas and shallow water perches at gravel bars (Figure 6.13-1) commonly used by four to 12 eagles during the winter for perching, hunting, feeding, and loafing.[107] Placement of a bridge in this area probably will displace these eagles.

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[104]Frederick, G. 1991. Effects of forest roads on grizzly bears, elk, and gray wolves: A literature review. U.S. Department of Agriculture, Forest Service, Kootenai National Forest, Libby, Montana.

[105]Ibid.

[106]Singer, F. 1979. Status and history of timber wolves in Glacier National Park, Montana. In: Klinghammer, E. (ed.), The behavior and ecology of wolves. Garland STPM Press, New York.

[107]Morrison-Maierle; personal communication with Becker. 1993.

Bridge design could include avoidance of gravel bars in pier placement. Bridge design could include avoidance of changes in flow patterns that impact the gravel bars downstream of the bridge. Together, these measures will maximize the potential for retention of the gravel bars.

Development of riparian habitat downstream of the new bridge could also mitigate impacts to bald eagles. The loss of raised perching sites could be replaced by cottonwood plantings or placement of artificial perching structures. Plantings and structures could be located where existing raised perching sites are limited.

In addition to raised perch sites, development of low perching sites ~~will~~could provide additional feeding perches for foraging eagles. This will be done at shallow water sites downstream of the new bridge. Large boulders, snags, or artificial materials could be placed in these areas as low perches. In consideration of safety of boat traffic in the area during the summer, these low perches ~~will~~could be designed to be exposed only during moderate to low flows.

To mitigate cumulative impacts, the acquisition of narrow buffer zones along the river banks is recommended. The buffer zones will offset impacts from potential business and residential development and restricting public access during critical time periods.[108] The size of these zones will depend on topography, and will be determined by local wildlife biologists.

Alignment 3 A new bridge on this alignment is expected to have a moderate impact to eagles. The proposed bridge is not near known shallow water or tree perch sites (Figure 6.13-1). It does, however, cross known foraging areas. A tree used by eagles for perching is about 0.25 mile upstream of the proposed crossing, but is in a developed area and will not be impacted by the bridge.

~~Because the bridge will be in a previously undeveloped and undisturbed section of the river, the extent of impacts to eagles is not known. Buffer zones to protect foraging areas, development of raised perches and shallow water sites, as described in Alignment 2 mitigation measures, will address some potential impacts to eagles at the new bridge site. However, implementation of all or some of these mitigation measures will not ensure that wintering bald eagles will not be displaced.~~

A large wetland/vegetated shallows mosaic occurs immediately upstream of the bridge site for Alignment 3. This site attracts waterfowl and is used occasionally by foraging bald eagles, primarily during winter.[109] Depending on its exact placement, the bridge may traverse the extreme downstream tip of the mosaic. However, existing human use of the site is high, including a private boat dock within the southern tip of the site and a community boat dock immediately downstream of the site. Due to the minimal direct impact to the site that would be caused by the bridge, the relatively high existing levels of human use and the relatively low existing levels of bald eagle use, impacts to bald eagles resulting from encroachment on the wetland by a new bridge would not be severe, although some displacement would occur.

Construction of the new bridge for Alignment 3 would likely displace eagles which forage in the immediate area. Because eagles often frequent areas close to human activities and habitations, it is likely that some eagles would become habituated to the new bridge and routine associated traffic, and would continue to forage in the area. In a study conducted to assess behavioral responses of wintering bald eagles to human activity, Stalmaster and Newman (1978) found that wintering eagles can become habituated to routine human activities. They concluded that human activities directly on river channels, such as boating and fishing, were most disturbing to eagles if these activities did not regularly occur there.

[108]Steenhoff, K. 1993. Raptor Biologist. Personal Communication. BIM Raptor Research and Technical Assistance Center, Boise, Idaho.
[109]Becker pers. comm., 1995

If construction of the new bridge for Alignment 3 were limited to the traditional construction, impacts to birds foraging along the river during winter (the heaviest period of use) would be further reduced; however, some displacement would likely still occur.

7.13.5. Cumulative Impacts

Reconstruction and improvement of highways that traverse grizzly bear and wolf habitat, in the Northern Continental Divide Ecosystem, will act cumulatively with the proposed action to increase mortality risk to grizzly bears and wolves; inhibit movement between adjacent parcels of habitat divided by highways; and displace bears and wolves from habitat near highways.

Improvement of MT 83 through the Swan Valley, US 2 between East and West Glacier, and MT 200 in the vicinity of Rogers Pass, will affect wolf and grizzly bear movement between habitat bisected by the highways. Widening traffic lanes and removal of vegetation from ROW likely will inhibit movement of some grizzly bears and wolves across the highway. Increased traffic volume and vehicle speed, resulting from highway improvements, will increase the risk of mortality due to vehicle-animal collisions; however, highway improvements would also increase motorists visibility of animals on or near the highway and allow avoidance of collisions. Widening highways would also provide a greater opportunity for drivers to change lanes and avoid animals.

In the Swan Valley, upgrading of MT 83 has been designed to minimize impacts to grizzly bears through habitat fragmentation by identifying and maintaining zones where grizzly bears (and other wildlife species) can approach and cross the traffic lanes with relatively high security. These zones are known as habitat "linkage zones" and have been established in areas where vegetation and topography are conducive to grizzly bear use of habitat near the highway.[110]

7.13.6. Determination of Effect

It has been determined the proposed action is not likely to adversely affect the threatened grizzly bear, the endangered gray wolf, the endangered peregrine falcon or the threatened bald eagle.[111] The US Fish and Wildlife Service has concurred with this determination.[112]

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[110]Montana Department of Transportation. 1993

[111]Morrison-Maierle Environmental Corporation, Biological Assessment, F 5-1(9)6, U.S. Highway 93, Evaro - Polson, 11 October 1995.

[112]McMaster, Kemper M., Field Supervisor, Montana Field Office, Ecological Services, Fish and Wildlife Service, United States Department of the Interior, letter dated 07 December 1995. A copy of this letter is included in Section 2.2, comment A-199 of Volume II of the final EIS.

7.14. CULTURAL RESOURCES

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.14.1. Impacts Common to All Alternatives

Potential adverse effects associated with the proposed action to eligible, formally recorded cultural resource properties could include physical, visual and auditory effects. Whether or not an effect is considered to be an "adverse effect" will depend upon the character of significance of specific eligible resources. General guidelines for determining adverse effect are provided in the ACHP criteria of Adverse Effect as defined in 36 Code of Federal Regulations (CFR) 800.3:

Adverse effects on formally recorded National Register of Historic Places (NRHP) or eligible properties may occur under conditions which include but are not limited to:

1. Destruction or alteration of all or part of a property;
2. Isolation from or alteration of the property's ~~surrounding environment~~setting;
3. Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
4. Neglect of a property resulting in its deterioration or destruction;
5. Transfer or sale of a property without adequate conditions or restrictions regarding preservation, maintenance, or use.

Of the five listed conditions, the first three are most applicable to the proposed action. Physical effects may include ground disturbing construction activities that result in the alteration of resources that contribute to the eligibility of a property. With regard to historical properties with standing buildings, this could include the destruction and/or removal of resources associated with the property, including buildings, structures and landscaping elements. Traditional cultural properties are also susceptible to physical effect, since the character of the setting may be primary to the eligibility of the property. Archaeological properties (both historic and prehistoric) may be adversely affected by ground disturbing activities, if the depositional integrity of artifacts is disturbed.

Visual effects associated with the proposed action may be considered "adverse" if they alter the setting of an eligible property by the introduction of incompatible elements of the relationship of one eligible property to another. For example, the construction of a roadway that is of a much larger scale or at a different grade than the existing roadway could alter the setting of a property in a manner that impacts the qualities that contribute to its significance. In general, the impact of visual effect is considered only in relation to cultural resource properties for which integrity of setting is an important integral component of eligibility. These types of properties are usually those eligible under NRHP criteria A or B. Cultural resource properties eligible only for their architectural value (criterion C) or their information potential (Criterion D) tend not to be susceptible to, or adversely affected by, visual effects. With regard to the proposed action, rural homesteads and traditional cultural properties are the property types that may be susceptible to visual effects.

Like visual effect, audible effect associated with the proposed action may be considered adverse if it impacts the qualities of significance of an eligible property. With regard to the proposed action, auditory effects may include an increase in the overall traffic noise level. Traditional cultural properties are particularly susceptible to auditory effects, since the addition of traffic noise, or an increase in traffic noise, may impact the sense of isolation and permanency of the site. In some instances, the continued use of a site will depend upon the retention of a private natural setting.

With regard to formally recorded cultural resource properties, the long-term effects may be difficult to assess and document. Generally speaking, an improved highway has the potential to contribute to changes in land use, which in turn likely will affect previously unrecorded cultural resource properties. Development such as subdivision of lands, and the improvement or construction of additional secondary road systems, have the potential to create additional physical, visual and auditory effects that could impact significant cultural resources. However, it is likely the case that many cultural resources will go unrecorded since this type of development may fall outside the auspices of federal cultural resource compliance legislation. For these reasons, it will be difficult to predict and document cumulative long-term effect, and to determine its impact to important cultural resources.

A more clearly discernable long-term effect will be the effect on the traditional cultural values of the Salish and Kootenai people. Although the construction of the proposed action in and of itself may not substantially alter the existing road corridor, the long-term effects of improving the transportation system could generate indirect effects that threaten the "cultural environment"--those qualities that are essential to the preservation of Native American culture and spiritual values.

One of the primary concerns is that an improved highway between the Mission Valley and the city of Missoula will result in the former becoming an "overwhelmingly non-Indian suburbia."[113] Improved access will make commuting between the Mission Valley and Missoula more attractive to current "city-dwellers," who want to move to a more rural setting. This in turn may affect the sense of Native American "community" which currently exists in some areas of the reservation. (Sections 6.4 and 7.4)

The pattern of subdividing agricultural lands (which already is underway), has the potential not only to "fill up" currently open lands, but to destroy or to make inaccessible, areas that contain natural resources of cultural significance to the Salish and Kootenai people. The elimination of plant gathering areas, the disruption of animal migration routes, and the reduction or elimination of some species of reptiles, birds, mammals, fish and plants from the reservation--all have the potential to adversely affect the natural and thus the cultural environment. The Flathead and Kootenai cultural committees fear that construction of an improved transportation corridor within the reservation has the potential to bring yet another segment of reservation land under national and regional scrutiny and regulatory control.

As discussed in Section 7.12, impacts to fish and wildlife will occur through either loss of habitat, or by direct mortality resulting from vehicle collisions. The current highway alignment bisects several wildlife corridors and results in relatively high mortality rates among some species of animals (notably turtles in the vicinity of the Ninepipe Wildlife Refuge). The extent of this impact is not limited to the direct effect to fish and wildlife populations; it also impacts traditional Salish and Kootenai cultural values, which, as stated previously, are predicated upon the primary relationship between people and natural ecosystems. When fish and wildlife populations are reduced or displaced, the well-being of the tribal culture also is affected. The alternative that requires the least disturbance to fish and wildlife habitat would be preferred.

The effects of increased noise levels on cultural values may be felt at a variety of levels. There is the cumulative effect that is felt by the general population, as they go about their daily life and find that the quality of their environment has been degraded by new or amplified noise. This degradation may be realized in a number of ways: By noticing a change in environmental systems due to noise-related impacts (e.g., the abandonment of nesting sites, etc.); or by the realization that the level of traffic noise has increased so that it is heard from a greater distance, at different times of the day, or at different seasons of the year.

Specific cultural practices may be directly affected if Salish or Kootenai people are forced to abandon the sites where these activities occur. As discussed in Section 6.14.3, the use of an area for these types of purposes may be

[113]Letter from Flathead Culture Committee to Mr. Michael T. Pablo, Chairman of the Confederated Salish and Kootenai Tribes. June 4, 1992, p.5.

dependent upon the conditions of purity, privacy, isolation and permanency of the site. Pollution of any kind, including intrusive noise, may render a site unusable.

As with impact resulting from an increase in noise level, lowering of water and air quality standards could affect the cultural environment of the reservation (as well as the health of its residents), by further degrading the natural environment.

Mitigation

When adverse impacts to NRHP eligible cultural resource properties cannot be avoided, property specific mitigation plans have been developed which address the qualities of significance inherent in the eligible property. Mitigation plans have been developed and approved within the context of an MOA for each site between the sponsoring federal agency (in this case FHWA and its representative MDT) and MSHPO. ACHP is also party to each of the MOAs. These mitigation plans and MOAs are discussed, for each site where direct use cannot be avoided, in the Section 4(f) Evaluation in Chapter 12.

Mitigation of adverse effects to traditional cultural sites may be more difficult. In order to avoid as many cultural sites as possible, MDT and CSKT will consider methods to use the Tribes' cultural clearance permit to enhance consultation during the design and construction process.

With regard to specific culturally significant areas, avoidance of impact may be achieved through a coordinated consultation process between design engineers and representatives of the Flathead and Kootenai culture committees. Coordination with representatives of the culture committees will occur prior to the beginning of each design project and continue through the construction phase of the project.

Coordination will include a preliminary field visit during which the design engineering team will identify design options (general routing, lane widths, etc.) to representatives of the Flathead and Kootenai culture committees. The culture committees will present the results of this preliminary on-site meeting to their tribal elders.

A second on-site meeting will be held, during which representatives of the culture committees will provide information from the elders to the engineering design team. The process of consultation will continue through the construction period and may include additional on-site visits. Culture committee members may wish to monitor the project area during the construction phase -- this will be coordinated directly with the construction contractor.

~~Thus far the Flathead and Kootenai cultural committees have not identified any mitigation methods specific to traditional cultural properties other than avoidance. The Flathead Cultural Committee has worked directly with transportation engineers to avoid culturally sensitive properties.~~

Mitigation of long-term effects to traditional values of the Salish and Kootenai Tribes will be addressed with two types of action:

1. Using traditional Native American and English languages for highway signs:
   - Major highway signs entering and leaving the Flathead Indian Reservation
   - Community signs located on highway right-of-way for all major communities located on the Flathead Indian Reservation
2. Establishment of two visitor information centers to be located and designed in cooperation with tribal architects and the Flathead and Kootenai culture committees.

7.14.2. No Action

No action will have no effect on NRHP eligible cultural resource properties or the traditional (confidential) cultural properties located within or near the proposed action.

7.14.3. Impacts at Eligible Sites

Table 7.14-1 indicates the effects of the proposed action, at each of the NRHP eligible sites (Table 6.14-1), as determined by MDT with the concurrence of MSHPO.

Lane Configuration D has not received substantial public or agency support and, in many cases, will cause substantially greater environmental impacts and will require substantially more use of Section 4(f) lands than Lane Configurations A, B or C. It has not been evaluated for impacts to NRHP eligible sites.

Lane Configurations B, C and D on Alignment 1 in the city of Polson have not been evaluated for impacts to NRHP eligible sites because they are not part of the MDT Preferred Alternative in this area (Section 5.3).

As indicated on Table 7.14-1, the following sites will be adversely impacted by the proposed action.

Ravalli School (24LA131)

Because concrete curb and gutter is planned through Ravalli, ROW requirements can be reduced and the ROW boundary will move only five or 10 feet closer to the site with Lane Configurations B or C, which will result in the direct use of 0.02 and 0.03 acres -- no new ROW or direct use of the site will be required with Lane Configuration A. Lane Configuration A will not move highway traffic closer to the site while Lane Configurations B or C will place highway traffic approximately 43 or 48 feet closer to the site.

Although the Ravalli School building will not be directly affected by the construction of a new roadway, MDT, with the concurrence of MSHPO, has determined the site will be adversely affected by impacts to its setting. Impacts, avoidance alternatives and measures to minimize harm to this site are discussed in the Section 4(f) Evaluation in Chapter 12.

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

It has been determined by MDT and MSHPO that this property will be adversely affected by the proposed action. Approximately 1,800 linear feet of railline will be obliterated. About 1,750 feet of new railline will be reconstructed about 100 to 150 feet from the existing line. If Alignment 2 or 3 is constructed, a new crossing of the railroad will be required. Construction of Alignment 2 or 3 will remove highway traffic from the existing alignment (and away from the railroad), but a substantial amount will remain.

Impacts, avoidance alternatives and measures to minimize harm to this site are discussed in the Section 4(f) Evaluation in Chapter 12.

Table 7.14-1 Effect on NRHP Eligible Properties

Number	Description	Milepost Location	Determination of Effect
24MO316	Evaro School	6.8	No Effect
24MO319 24LA199	Northern Pacific Railroad Grade	Crossing at 9.7, parallel from 6.5 to 7.3, 13.4 to 15.4, and 19.1 to 27.1	No Effect on 24MO319; No Adverse Effect on 24LA199
24LA131	Ravalli School	27.0	Adverse Effect
24LA133	Salzman Residence	27.2	No Adverse Effect
24LA158	Woods Agricultural Complex	38.5	No Adverse Effect
24LA159	Jenkins/Rungborg Farmstead	39.2	No Effect
24LA161	Anderson Farmstead - Barn	45.2	No Effect
24LA211	Lake Flour Mill and Granary	47.1, Alignment 4	No Effect
24LA89	Northern Pacific Railroad, Dixon-Polson Branchline	56.6 to 59.5	Adverse Effect
24LA167	Casey Dentist Office	61.0	No Effect
24LA177	Faunce House	60.6	No Effect
24LA197	Paul House	59.8	No Effect
24LA188	Tiddy House	60.3	No Effect
24LA175	Anderson Cottage	60.8	No Effect
24LA181	Poage House	60.5	No Effect
24LA204	Caffrey Place - Barn, Feature 8	59.1, Alignments 2 and 3 (2.6 Miles west of US 93)	No Effect

Morrison-Maierle and Carter Burgess, 1994.

7.15. PARKS AND RECREATION

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.15.1. Impacts Common To All Alternatives

Population growth and growth of tourism in the area of the proposed action and throughout western Montana will continue to increase public use of parks and recreation areas with all alignments and lane configurations, including No Action. Increasing traffic, with more noise and visual distraction, will encroach on areas used for recreation along the highway. Impacts to parks, recreation areas and wildlife refuges are discussed in further detail in the final~~draft~~ Section 4(f) evaluation in Chapter 12.

7.15.2. Existing Alignment (Except Arlee, Ronan and Polson)

Highway improvement will provide an opportunity to improve access to parks, recreation areas and wildlife and waterfowl refuges. Most of the nine scenic/historic turnouts adjacent to the highway will be perpetuated and will not be reduced in size by any of the lane configurations.

Improved access may cause an increase in public use of parks and recreation areas. In some cases, increased use may reduce the quality of the recreation experience.

Lane Configurations A, B and C will require land from the National Bison Range visitor center, which is operated by CSKT and is located on the south side of US 93 on Ravalli Hill. The Fort Connah Historic turnout near Milepost 38.8 north of Post Creek is on a steeper grade which adversely affects safety and traffic flow as recreational vehicles or trucks enter or leave it. It may be desirable to relocate this turnout. A new location should also be considered for the turnout and picnic area south of Ronan near Milepost 44; much of its area will be converted to highway ROW with Lane Configuration B, C or D, and the area also has a high water table that prohibits operation of sewage disposal facilities. Other turnouts may be constructed, as part of highway improvement projects, where desirable and appropriate and where they can be constructed without adversely affecting safety, traffic flow and the environment.

Lane Configurations B and C will require land from the National Bison Range, which is operated by the U.S. Fish and Wildlife Service (USFWS). Lane Configurations A, B and C will require land from the Ninepipe National Wildlife Refuge, which is owned by CSKT and managed by USFWS and from the Ninepipe Wildlife Management Area, which is operated by the Montana Department of Fish, Wildlife and Parks (MDFWP). None of the lane configurations, including No Action, will have direct impact on either the fishing access site or the wildlife management viewing area, which are located near Ninepipe Reservoir. Public use will not be disrupted for any of the parks, recreation areas and wildlife and waterfowl refuges.

Lane Configurations A, B and C will require land from the Kicking Horse Waterfowl Production Area (WPA), and the Duck Haven WPA. Public use will not be disrupted for the WPAs, which are operated by USFWS.

There will be no direct impact to the ballfield at St. Ignatius with any of the lane configurations, including No Action. All lane configurations may reduce the size of existing informal recreation sites by encroaching in areas with natural settings adjacent to the highway. Lane Configurations B, C and D will place traffic, with more noise and visual distraction, closer to areas used for recreation along the highway, but public use will not be disrupted if access is perpetuated to these sites. (Appendix A, aerial photographs and maps)

7.15.3. Arlee Alignments

Highway improvement will provide an opportunity to improve access to parks and recreation sites.

Alignment 1, with Lane Configurations B and C, will place traffic, with more noise and visual distraction, closer to the community park, but public use will not be disrupted for the park. Lane Configuration C will require a small part of current park land.

Alignment 2, with all lane configurations, will divert through traffic away from the existing alignment and reduce traffic near the community park. Alignment 2 will require local residents to cross the highway for fishing and swimming at Finley Creek.

Alignment 3, with all lane configurations, will place traffic, with more noise and visual distraction, closer to the powwow and rodeo grounds, elementary and junior high school playgrounds, the high school athletic field and ballfield, a community ballfield and the Jocko River Trout Hatchery.

Alignment 3 will separate the schools from the hatchery and will eliminate the use of hatchery land, for athletic activities and science education studies and observation, by the schools. The schools and MDFWP consider this a substantial adverse impact and are opposed to Alignment 3 for that reason and others.[114]

Alignment 4, with all lane configurations, will require a new crossing of the Jocko River and disrupt the natural setting used for recreation.

7.15.4. Ronan Alignments

Highway improvement will provide an opportunity to improve access to parks and recreation sites.

Alignment 1, with Lane Configurations B and C, will place traffic, with more noise and visual distraction, closer to the ballfield on the northern edge of Ronan. Public use will not be disrupted for the ballfield.

With Lane Configuration A, Alignment 2, the one-way couplet, will require land from the high school athletic field and the city park on First Avenue Southwest. It will place traffic closer to the high school athletic field, and it will introduce highway traffic, with noise and visual distraction, into a residential area. Public use will be disrupted for the athletic field and city park.

Alignments 3 and 4, with all lane configurations, will place traffic, with more noise and visual distraction, closer to the ballfield on the western edge of Ronan. With Alignment 4, Lane Configurations A, B and C will require land from the ballfield on the west edge of Ronan. Alignment 4 will disrupt public use of the ballfield.

7.15.5. Polson Alignments

Highway improvement will provide an opportunity to improve access to parks and recreation sites.

With Alignment 1, and Lane Configuration B and C, land, including some mature trees, will be converted to ROW along the edge of Ducharme Park, while the highway will encroach slightly, with more noise and visual distraction, on land along the edge of the golf course and Lions Park.

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[114]Crane, Gayle, Superintendent, Joint School District No. 8, letter dated 28 March 1994 and Ron Snyder, Montana Department of Fish, Wildlife and Parks, letter dated 24 March 1994.

A portion of the Seventh Avenue ballfield, including part of one ball diamond, will be converted to ROW if Alignment 2 is constructed.

Alignment 3 will not affect parks and recreation land.

Mitigation

ROW will be acquired only as required to construct the highway improvements in areas with land used for parks, recreation areas and wildlife and waterfowl refuges. Where direct impact occurs, alignments may be shifted away from the site. Where severe restrictions exist, where substantial environmental impacts may occur, and where safety standards are not compromised, the width of total ROW may be reduced in some areas.

7.15.6. Section 4(f) and Section 6(f) Properties

Chapter 12 discusses impacts for parks, recreation areas and wildlife and waterfowl refuges that are subject to Section 4(f) of the 1966 U.S. Department of Transportation Act, 49 U.S.C. 303 and Section 6(f) of the Land and Water Conservation Fund Act.

7.16. HAZARDOUS MATERIALS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.16.1. No Action

Existing Hazardous Material Sites

As indicated on Table 6.16-1, various potential hazardous material sites exist within or adjacent to the ROW of the existing highway. With No Action, these sites will remain as they are. No substantial highway construction will occur that will alter the sites. No contaminated soil will be disturbed or removed. A Phase II hazardous materials assessment will not be conducted so sites of concern will not be further defined or evaluated and removal or mitigation plans will not be completed and implemented.

Potential for Highway Related Contamination

With No Action, safety on the existing highway will not be substantially improved so the potential for additional highway and transportation related accidents or spills will continue to exist. As traffic volumes increase, the number of hazardous material transport trips also will increase; safety will further deteriorate; and the potential for hazardous material related accidents and spills will increase.

7.16.2. Existing Alignment (Outside Arlee, Ronan and Polson)

Existing Hazardous Material Sites

~~After the preferred alternative has been selected, a~~A Phase II investigation will be conducted in the areas described in Table 6.16-1 that are ranked as high and moderate and that may be affected by the proposed action. A Phase II hazardous materials assessment targets specific sources and usually involves field sampling and laboratory analysis of the soil and/or water to determine the nature and extent of any contamination encountered. Any further investigation or cleanup often involves identification of a potentially responsible party and any additional work becomes the responsibility of that party.

Most of the highway construction in potentially contaminated areas will occur on flatter land in and around communities. Excavation will be shallow, will not be extensive and should not affect or require the removal of contaminated soils.

Because construction and ROW widths increase with Lane Configurations A, B, C and D, respectively, impacts on existing hazardous waste sites also will increase.

Some beneficial impacts may occur when removal or remediation is completed on new highway ROW for existing contaminated sites that otherwise may not have been corrected.

Potential for Highway Related Contamination

The potential for highway related accidents involving the transport of hazardous materials will decrease with the construction of any of the lane configurations because, as indicated in Section 6.1, alignments, grades, shoulder widths and other geometric design features will be improved to meet current standards. The improvements will improve safety for all vehicles, including vehicles transporting hazardous materials, and decrease the likelihood of accidents or spills.

Lane Configurations B, C or D will further improve safety and decrease the potential for hazardous materials incidents because they will be wider highways with more space for larger vehicles to maneuver.

Lane Configuration D will have added safety features related to the wider, unpaved center median which will effectively separate opposing traffic lanes and virtually eliminate head-on collisions.

Mitigation

In areas where new ROW must be acquired, negotiations and agreements between the owner and MDT will ensure that necessary removal or other required remediation work will be completed, by the parties determined responsible, before construction occurs.

Where removal of contaminated soil is required, it will be disposed of in an approved manner and location.

7.16.3. Arlee, Ronan and Polson Alignments

Existing Hazardous Material Sites

As indicated on Table 6.16-1 and as summarized in Table 7.16-1, most potential hazardous material sites ranked moderate to high are located on Alignment 1 in the Arlee, Ronan and Polson areas.

Potential for Highway Related Contamination

Because of the proximity of residences, schools and businesses, the potential for human injury related to hazardous materials spills or accidents is greater as the highway passes through the communities of Arlee, Ronan and Polson.

Table 7.16-1 Summary of Potential Hazardous Material Sites

Number of Sites Ranked Moderate to High				
Location	Alignment 1 (Existing Alignment)	Alignment 2	Alignment 3	Alignment 4
Arlee	9	None	None	None
Ronan	9	15	3	3
Polson	22	3	1	--

Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Right-of-Way Corridor, Evaro to Polson, February 1993 and Chen-Northern, Inc., Phase I Hazardous Material Assessment, U.S. Highway 93 Polson Bypass Study, June 1993.

If Lane Configuration B or C is constructed through these communities, the hazard will increase because traffic lanes will be placed closer to homes and businesses. This may be offset by the wider roadway provided by a four-lane highway and resulting fewer head-on and rear-end collisions and greater maneuverability to avoid accidents.

Alignments 2, 3 and 4 through Arlee will move highway traffic out of the most populated area of the town and therefore away from areas of concentrated human activity. Alignment 3, however, will place the highway closer to the Arlee schools on the east edge of the town.

Alignment 2 in Ronan will place traffic in a residential area that is currently not exposed to highway traffic with related potential for hazardous materials spills and resulting potential contamination and human injury.

Alignments 3 and 4 through Ronan and Alignments 2 and 3 through Polson will move highway traffic out of the most populated area of the town and therefore away from areas of concentrated human activity.

Mitigation

Mitigation will be as described in Section 7.16.2 for Alignment 1, the existing alignment outside Arlee, Ronan and Polson.

7.17. VISUAL

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

A visual impact assessment has been completed for the proposed action.[115] The following is a summary of impacts and mitigation measures identified.

7.17.1. Visual Impacts Common to All Alternatives

The growth of traffic on US 93 in the Evaro Canyon, the Jocko Valley, Ravalli Canyon and the Mission Valley landscape units with all alignment and lane configuration alternatives, including No Action, will increase demand for highway related services. General visual quality will deteriorate if there is a proliferation of outdoor advertising or more strip development and sprawl along the highway. Foreground vegetation and landforms will be destroyed in the development process.

Mitigation

Visual quality will be highest if alignment and lane configuration alternatives vary the roadway to accommodate unique characteristics of existing land cover and landforms. Access should be limited to locations now in use to insure that higher future traffic volume will not result in development sprawl. This will cause visual fragmentation, which will confuse situations for travelers. Visual quality will be lost in the foreground view.

The following mitigation or visual quality management measures should be considered for each section of the highway. The relative importance of each measure in managing (protecting, conserving, enhancing or mitigating) visual quality in specific landscape units depends on the unique resources, patterns and character of each landscape unit.

View Sequences

Visual quality relates to specific views, as well as the order or sequence as they are experienced. The view sequence of each landscape unit has been assessed and recommendations developed. It is important to frame or preserve desirable views, buffer visual encroachments, and redirect, focus or enhance views to provide diversity and add interest to the view sequence.

Vegetation

Normal MDT practice for all highway construction includes placing topsoil on newly constructed slopes and planting, fertilizing and maintaining newly seeded areas until vegetation is established. MDT uses grasses and shrubs that are native to the area and will establish themselves and survive without long-term irrigation. Preservation and enhancement of vegetation includes reclamation seeding to provide landcover, reduce unsightly erosion and visually integrate the highway into the visual environment. Other potential landscaping items that can be completed, if funding and maintenance commitments are available, may include:

- Revegetation with woody plants is appropriate where existing buffers between conflicting land uses are destroyed or important vegetation patterns are disturbed, such as along drainages and forested corridors. Preservation of existing vegetation will retain the character and composition of the

[115]Fischer & Associates, Visual Impact Assessment, U.S. Highway 93, Evaro to Polson, March 1993.

landscape and minimize the perception of encroachment by providing visual separation of the highway and development.

- Retaining existing vegetation will provide foreground and middle ground interest, and may provide drivers with alignment clues, particularly when located along curves. Selective clearing will occasionally increase opportunity for visual access to unique visual resources. Care must be taken to avoid adversely altering views of the road.

- Vegetative screens may be introduced to mitigate the impact of man-made encroachments, particularly unsightly development located on curves and the numerous substations, gravel pits and highway maintenance facilities located along this route.

- Urban planting may contribute to overall image enhancement of communities and help delineate special districts. To be effective, plantings must be maintained and appropriate sized species and forms must be selected to be compatible with the community streetscape. Maintenance of ROW vegetation to control noxious weeds and maintain appropriate cover will be important to visual quality throughout the area.

Landforms

Generally, curvilinear alignments will visually integrate best into areas of steep topography and provide more visual interest and diversity to the route. When feasible, the road should wrap around landforms rather than cut through them. Because of the restricted ROW and, in many cases, substantial environmental impacts that may occur, substantial adjustments to provide curvilinear alignments strictly for visual quality is often not practical or desirable.

Modifications to standard sections, for the purpose of narrowing the width of the standard cross section solely to improve visual quality, is generally not appropriate because highway safety and operation will be adversely affected~~, may be appropriate in areas where important resources will be disturbed.~~ While generally not recommended from a visual standpoint, the use of structures such as bridges, barriers, retaining walls and guardrail may be desirable if use substantially reduces the amount of disturbance to landforms.

Where disturbance of landforms is unavoidable, the feasibility and effectiveness of slope flattening, rounding, rock fracturing, picking of disturbed faces and reclamation should be assessed. When practical, the road should be designed to minimize disturbance to west and south facing slopes because they are more difficult to reclaim.

Variable slope configurations and landform modifications may occasionally be undertaken to enhance view sequences or eliminate unnatural looking remnants of landforms. Indirect benefits will be the creation of moisture pockets facilitating the establishment of native vegetation.

Water

Designing roads should respond and relate to the visual aspects of surface water features. Where practical, vegetated drainages should be bridged rather than filled to minimize disruption to important lines and avoid creating unnatural looking fills. Where bridges are impractical and preservation of existing vegetation will not be an issue, culverts should be lengthened to avoid the need for guardrail and leave more natural looking landforms.

Floodplains should be crossed at locations as narrow as possible, and they should be bridged rather than filled to preserve the natural appearance of the riparian habitat. Visual access to water amenities should be enhanced through sensitive alignments and design details which permit visual access to the resource.

Alignment

The horizontal and vertical alignments of highways affect the quality of views from and of the road. Assuming safety design criteria can be met, roads conforming to natural grades and forms will be more visually appealing than roads which interface, or connect, abruptly with landforms and landcover.

Roadside Development

Generally the existing facilities along US 93 are too close to the road and sited in less than optimum locations. To the extent practical, new sites should be selected and existing facilities upgraded to provide multiple benefits including, but not limited to, resource identification and orientation, recreation, landscape reclamation, community identification, habitat preservation and resource enhancement.

Visual quality, particularly in the valleys, is negatively impacted by signage, billboards, fencing, overhead utilities and power poles. To the extent practical, the roadway corridor should be protected from these encroachments.

Highway Structures and Appurtenances

Highway construction involves use of structures that often are visual encroachments requiring some degree of mitigation. Structures include bridges, guardrails, culverts, concrete median barriers, wildlife and livestock crossings, retaining structures, traffic signals, curb and gutter, curbed median, wildlife fencing and fencing.

Visual quality will benefit from sensitive detailing and siting. Occasionally structures may be introduced to protect visual resources. Refer to the discussion of visual impacts with design options in Section 7.17.7 for more information about the visual impacts of structures.

Land Use and Development

Land use contributes to the overall character and visual quality of views from and of the road. The visual impacts of land use will be greater in valleys than canyons because of the openness and length of views.

To protect scenic resources, MDT will coordinate access management with local governing agencies~~, in association with MDT, should undertake comprehensive land use planning studies to address visual quality of future development along highway corridors.~~ Planning should address conservation and preservation of scenic qualities using land use planning and regulation~~zoning~~, access control, development guidelines, signage ordinances (including removal of billboards and signs) and scenic and conservation easements.

Access Management

Access points should be controlled and consolidated, and where space permits, frontage roads should be developed. Additional ROW should be acquired and access control~~development standards~~ should be adopted by MDT~~ and local governing agencies~~ to provide generous setbacks and insure visual compatibility between the highway and developed areas.[116]

Design details used to manage access include access control easements, curbs, consolidated access and frontage roads.

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[116]Condemnation of land under eminent domain will not be a method used to preserve an undeveloped corridor for an alternative alignment of the highway.

Community Interface

The visual connection, or interface, between the highway and communities may be enhanced to improve the image and provide opportunities for travelers to enjoy and be oriented to natural and cultural resources. Image enhancement and gateway concepts for individual communities require coordination of highway design with existing patterns and character.

7.17.2. No Action

With No Action, existing problems in visual quality will worsen with higher traffic volume that interrupts views and reduces visual connectedness. Visual quality in the foreground will deteriorate and enjoyment of scenic background views will be diminished. Without control of access, approaches to the highway will increase, creating more hazardous driving conditions that demand constant driver attention. Drivers will have less time to notice distant scenic views.

Continued population growth will result in residential, commercial and industrial development that diminishes visual quality along the highway. Views of and from US 93 will continue to deteriorate.

Increased traffic congestion will result in greater visual separation (the degree to which two sides of the road are perceived to be related) through communities.

7.17.3. Existing Alignment (Except Arlee, Ronan, and Polson)

Visual quality impacts related to lane configurations (Figure 5.1-4) will be associated with road section width, design flexibility and visual load/capacity as it affects driver attention requirements and consequent ability to enjoy the scenic setting.

Lane Configuration A (two-lane highway) will have a pavement width of 40 feet compared with the existing pavement widths of 32 to 40 feet. This will result in only minor changes to the visual environment. The roadway will be narrower and most easily designed to match existing conditions, resulting in less change. Where passing and designated left-turn bays are added, and road width increases, the result will be greater negative impacts on landforms and landcover.

Lane Configuration B (four-lane highway: 64-feet wide~~, or 68-feet wide if the four-foot painted center median is used~~) will be wider than Lane Configuration A and further reduce visual quality for all viewers. Its greater width will be more difficult to match existing conditions. Lack of left-turn bays will maintain an existing hazard, diverting travelers' attention from scenic views. Two lanes of traffic in each direction will provide more visual openings, increasing visual access to surroundings, particularly along curvilinear alignments. Lane Configuration B will be more comfortable to drive than a two-lane highway, and drivers will be more able to view the scenery. ROW purchase will result in relocation of fences and utilities to be relocated which will improve the visual appearance of the highway.

The width of Lane Configuration C (four-lane highway: 78 feet) will result in slightly lower visual quality than Lane Configuration B. The continuous two-way left-turn center median will, however, create a generally safer left-turn movement, resulting in greater driver comfort and opportunity to enjoy views. Other beneficial impacts described above for Lane Configuration B will also occur with Lane Configuration C.

The width of Lane Configuration D, from outside edge of pavement to outside edge of pavement, including the median, will be at least 104 feet. The greater width will result in lower visual quality than Lane Configurations B and C. The unpaved center median, however, offers a greater measure of visual comfort to drivers by separating opposing traffic lanes and by inserting special lanes in the median space to eliminate hazardous turning movements,

thus assuring greater enjoyment of scenic views. Use of a median wider than 40 feet may improve visual quality by enhancing the visually accommodating independent vertical alignments which will better fit with the existing terrain.

Mitigation

Where practical and feasible, without decreasing safety and creating other environmental impacts that might be more severe, variation of the horizontal and vertical alignments may provide a curvilinear alignment to conform to vegetation and landforms with the least reduction of visual quality.

Where existing overhead utilities require relocation, consideration should be given to placing them underground or locating them away from the highway. Consideration should also be given to incorporating vegetative screens at noncommercial buildings and facilities such as power substations and highway maintenance shops.

With any of the lane configurations, the number of driveways and other accesses to the highway will be reduced, partial access control will be implemented, and future accesses will be effectively limited.

Other mitigation measures will include the following:

- Retention of trees and natural vegetation except where removal is required for construction, for sight distance improvement or for other safety requirements.
- Construction of the roadway with smooth, rounded excavation and embankment slopes to match and blend in with the adjacent natural terrain as much as possible.
- Excavation and embankment slopes will generally be constructed flat enough to allow re-establishment of natural vegetation.
- Where steeper slopes are required, the newly seeded topsoil will be protected with mulch or protective mats.
- Topsoil will be placed on all new excavation and embankment slopes to facilitate re-establishment of natural vegetation. Slopes will be seeded with plant varieties native to the area. Wherever practical, and where noxious weeds do not occur, existing topsoil will be salvaged in areas of road construction and reused -- this topsoil will contain natural seeds and organic matter.
- Erosion control measures will be constructed and maintained, as described in Section 7.9, to prevent related negative visual impacts.
- Noxious weeds will be controlled as discussed in Section 7.12.

7.17.3.1. Evaro Canyon Landscape Unit

The proximity of the Evaro Canyon landscape unit to Missoula makes it more susceptible to population growth due to reduced travel time and improved convenience for workers who commute outside the area. Additional development of land in the rural, mountainous area will diminish visual quality. (Sections 6.4 and 7.4)

Mitigation

Protect the visual character and resources of Evaro Canyon by minimizing disturbance to existing mature vegetation and preserving the existing view sequence. Generally follow the existing alignment. The existing curvilinear road alignment, considered important for the scenic quality of the highway, will be maintained.

Preserve and protect existing mature conifers as much as possible since they are considered an important part of the landscape and scenery. Trees should be removed only where required for construction, for sight distance improvement or for other safety requirements.

A mitigation measure, sometimes employed to~~To~~ enhance the view sequence in areas where the road grade is unnaturally high, ~~consideration should be given~~is to lower~~ing~~ the road to reduce the need for guard rail and improve the visual relationship between the road and adjacent land and development. However, a review of the proposed action indicates that there are no areas where the roadway is unnaturally high.

The concrete glare screen located near Schley Homesites should be replaced with a vegetation screen.

7.17.3.2. Jocko Valley Landscape Unit

All lane configurations through the Jocko Valley generally will retain the sequence of long tangents and short curves that result in static views and visual discomfort for travelers. The visual disruption will continue to be reinforced by the railroad and by overhead powerlines that distract from scenic mountain views.

Other man-made developments, such as scattered businesses, billboards and residences, will remain with any of the lane configurations and will continue to influence the visual environment.

Widening of the Jocko River bridge will diminish the view from the road by removing mature trees from the vegetation line along the river and by moving travelers into the visual space of developed areas adjacent to the highway.

Views from the road will be impacted by the road alignment and associated view sequences, handling of the Jocko River crossing, changes in land use and encroachment of commercial development. Views of the road will be impacted by increasing the scale and visibility of the highway, and the conversion of new lands to highway usage likely will contribute to commercial expansion.

Mitigation

Vegetated drainages, agricultural lands and the rural landscape will protect visual quality. Visual impacts for the Jocko River crossing will be less with narrower lane configurations.

Ideally, for visual quality, overhead utilities that require relocation should be placed underground. However, utilities have indicated that placement underground is generally much more expensive. Where overhead utility lines are required, they should be placed near vertical elements that will conceal them; not where they silhouette against the sky or near heavy concentrations of viewers. ~~In Jocko Valley, this will be away from the highway and, perhaps against the toe of the mountain ranges where they will be concealed by trees, if practical and feasible.~~

~~Dirty Corner, near Milepost 15.2, is an area where consideration should be given to lowering the grades to remove the awkward appearance and enhance the view sequence.~~

Priority mitigation measures in order of importance are land use preservation, development controls, conservation of the Jocko River environment and alignment enhancements.

7.17.3.3. Ravalli Canyon Landscape Unit

All lane configurations through Ravalli Canyon will retain the awkward relationships between the Jocko River, the MRL railroad, MT 200 and the community of Ravalli. Because of limited physical space, the narrowness of the canyon and the small scale of the development, any increase in width of the highway or roadside development will diminish visual quality. The attention of travelers will be diverted from the scenery by a visually confusing landscape.

All lane configurations through Ravalli Canyon will diminish views of the major visual resources: Ravalli Canyon enclosure; National Bison Range; and the Jocko River environment. Additional pavement width will intensify the visual encroachment of the railroad and commercial development.

In the Ravalli Canyon area, south of the community of Ravalli, the existing large highway excavations in the toes of the hills east of the highway will be increased in some areas with any of the lane configurations to provide for a wider highway, to increase safety recovery areas adjacent to the highway, to improve slopes and to improve existing substandard horizontal curves. The largest excavation area is located near Milepost 25.4 (Figure 7.17-1).[117]

Approximate excavation heights in this area for each of the alternatives are summarized below:

No Action	50 Feet
Lane Configuration A	140 Feet
Lane Configuration B	160 Feet
Lane Configuration C	170 Feet
Lane Configuration D	185 Feet

Geological conditions are such that these slopes can be constructed nearly vertically, which will allow the least possible excavation into the hill sides. Thus possible adverse impacts to land use, cultural resources and wildlife habitat will be reduced. Construction of flatter slopes will require substantially greater areas of disturbance because the flatter slopes must be extended further before they intersect the slope of the hillsides. The near-vertical slopes will not necessarily provide the least visual impacts. They may be out of place because there is no vertical element in this unit except power poles.

Views of the road will be impacted by the perceived and actual encroachment of the highway into private space and the increase in scale and visibility of the highway from roadside facilities and adjacent development.

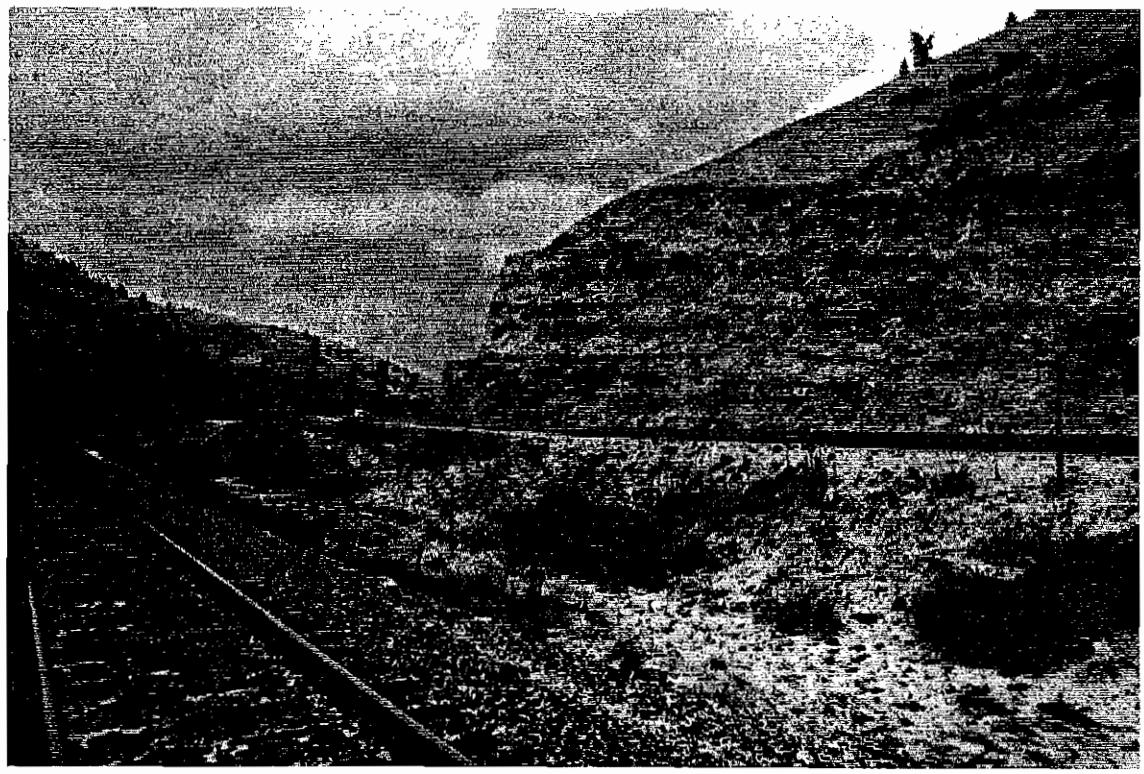
Mitigation

The narrowest roadway width that will provide safety and accommodate traffic demand should be considered to minimize disturbance. Consideration should be given to narrowing borrow ditches through some of the large cut sections to minimize disturbance to important roadside landforms.

[117]This photographic representation is intended only to show the general appearance of the roadway after construction. It is not intended to show all design details, and some details may change when final design is completed.



EXISTING 2 – LANE HIGHWAY



LANE CONFIGURATION B

EXCAVATION IN RAVALLI CANYON - MP 25.4 FIGURE 7.17-1

Where landforms are disturbed, slope rounding, revegetation and fracturing of exposed rock faces is encouraged to leave natural looking forms. All disturbed areas should be revegetated with special attention given to matching existing species, particularly near the Bison Range.

Mitigation measures in order of importance are landform conservation and mitigation of disturbance, land use preservation, access and development control, vegetation protection/reclamation. The cut slopes should be graded and revegetated to restore natural looking contours, landcover, color and texture.

7.17.3.4. Mission Valley Landscape Unit

All lane configurations will retain existing long straight view sequences that some viewers may consider to be static, uninteresting and limiting for travelers' exposure to unique resources of the area.

Views of the road from St. Ignatius will be impacted by disturbance to creekside vegetation, commercial sprawl or deterioration of panoramic views.

Views of the road from roadside parks, wildlife viewing areas and commercial establishments will be impacted by an increase in road width. Views from the road will be most impacted by the width of pavement, quality of roadside development and proliferation of highway appurtenances.

Views of the road in Pablo from scattered commercial and roadside facilities will be impacted by commercial sprawl, proximity and scale of the highway to existing development and extent of disruption of existing vegetation, which will have the greatest negative visual impact near Pablo. Views from the road will be most impacted by commercial sprawl, and destruction of roadside vegetation.

Mitigation

Roadway width and fill slopes no wider than necessary to provide for safety and to accommodated traffic demand will be particularly desirable to preserve visual quality in places where the roadway passes through potholes and major wetlands in the Ninepipe area~~, especially at vegetated creek crossings, such as the Mission Outwash adjacent to St. Ignatius; throughout the Mission Moraine at places crossing wetlands; and at places with wildlife views; and the community of Pablo where a narrow roadway will preserve mature vegetation.~~ Constructing narrower and consequently steeper fill slopes will, in many areas, require installation of guardrail which may be considered an adverse visual impact.

Some diversity in lane configuration will add visual interest to the long, straight parts of the highway.

To the extent possible, the foreground visual exposure for travelers will be enhanced by reducing excessive length of guardrails and developing and linking roadside parks in the area of Ninepipe National Wildlife Refuge.

~~To the extent possible, reduce excessive length of guardrails, and develop and link roadside parks in the area of Ninepipe National Wildlife Refuge to enhance the foreground visual exposure for travelers.~~

With protection~~Protection~~ of land use~~,~~ and mitigation of highway structures and man-made encroachments~~.~~ ~~S~~Specific enhancements to be considered include enlarging, enhancing and linking the existing roadside parks to provide an enhanced interpretation of the resource. Other measures include ~~p~~Pedestrian enhancements for wildlife viewing and reduction of guardrails to the extent feasible. Introduction of additional, naturalized vegetation will~~to~~ provide foreground interest and improved wildlife habitat.

~~Include c~~Conservation of vegetation near Post Creek and smaller drainages, conservation of the rural character of the agricultural valley, and enhancement and preservation of distant views of the Mission Mountains~~. Specific~~ will

be enhanced by. ~~Specific mitigation opportunities include~~ vegetative screening of the electric power substation and commercial development, particularly on curves.

7.17.4. Arlee Alignments

Existing conditions and Lane Configurations A and C on the existing alignment in Arlee are illustrated on Figure 7.17-2.[118] With Alignment 1 (existing alignment) in the community of Arlee, visual quality in the foreground will deteriorate and enjoyment of scenic background views will be diminished similar to No Action. More traffic and congestion will worsen the existing visual and functional division for views of the road. Widening of the existing alignment to four lanes through Arlee will fragment an already discontinuous streetscape, removing "edge" buildings and vegetation, diminishing views from adjacent properties and encroaching on adjacent businesses and pedestrians. The scale of the road will visually and functionally divide the community, being incompatible with the scale of the community and roadside development, for views from the road.

Alignment 2 (west alignment) and Alignment 3 (east alignment) will divert traffic around the developed area of Arlee, but they will not be outside all of the area visually contained in the Arlee community. Each creates visual divisions that weaken existing forms and negate the opportunity to give Arlee added visual cohesiveness.

Alignments 2 and 3 will cross the Jocko River at the existing bridge location, visually separating all the development north of Saddle Mountain Road and in Jocko Hollow from Arlee. Any widening of the existing Jocko River crossing will disrupt a visually important vegetation line along the river, and move travelers into the visual space of adjacent users.

Alignment 3 will pass east of town, opening a major new highway view to a large concentration of viewers, many of whom will be occupied with outdoor community, private residential or school and church related activities which are sensitive to views of the highway. Although this location will provide a pleasant view for highway users with its east edge along the high wooded bank of the Jocko River, the view into private and institutional spaces on the west side of the road will conflict with and be out of scale with the highway. Alignment 3 also will eliminate future linkage of the Jocko River frontage to the town of Arlee, creating a visual unit without riverside amenities.

Where Alignment 2 passes west of Arlee it negatively exposes new residential viewers to highway views without reinforcing the logical visual boundary of the community.

Alignment 4 (Jocko Valley Alignment) will be east of Arlee and farther from the town than Alignments 2 and 3. It will connect with the existing alignment south of Arlee at a visually logical location, straight off the tangent at Dirty Corner. It will expose cropland and scattered homes to the highway, and it will cross the Jocko River at a new location presenting the opportunity to enhance the scenic visual quality with an advancing mountain view framed by river vegetation. After crossing the Jocko River, Alignment 4 curves to the northwest revealing a stunning, revolving view of the Mission Mountains.

Alignment 4 will be located on low ground, exposing some new viewers to the highway. It intersects existing field and road patterns at odd angles, without offering the compensatory value of long, scenic views.

Mitigation

If Alignment 2, 3 or 4 is constructed, the existing alignment should be retained and signed as a "business route" providing access for travelers to services in Arlee. Community gateways on the north and south ends of town should identify routes and provide the opportunity to develop community identity, combining image enhancements,

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[118]This photographic representation is intended only to show the general appearance of the roadway after construction. It is not intended to show all design details, and some details may change when final design is completed.

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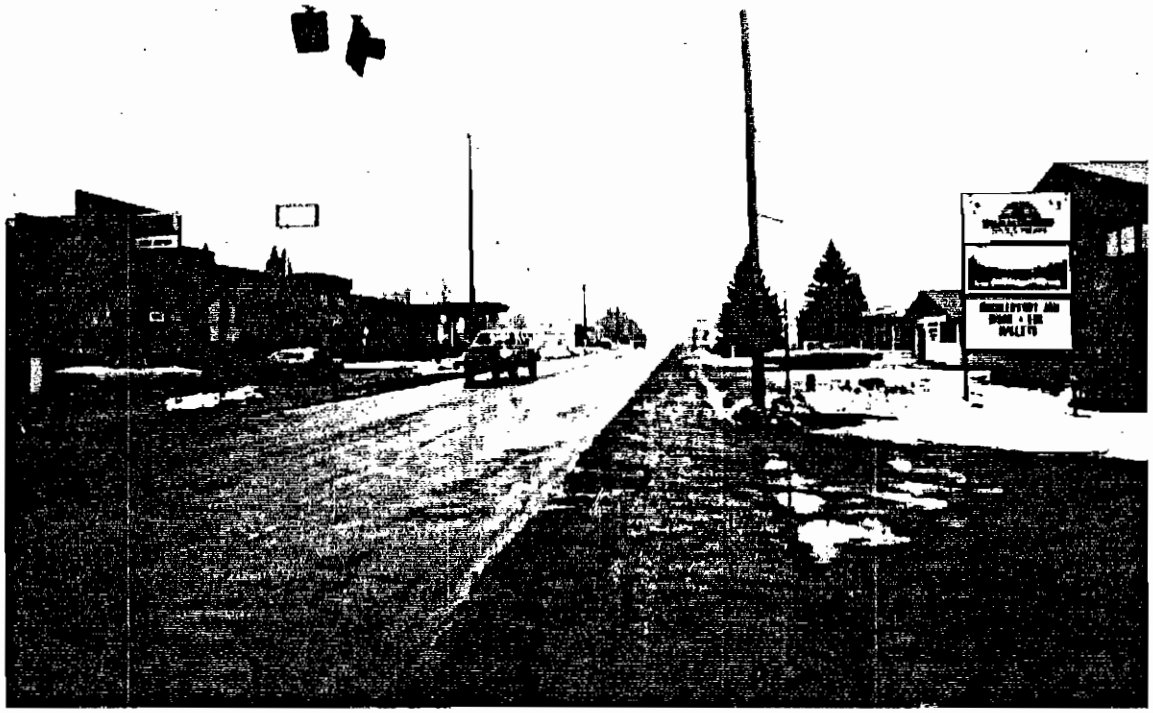
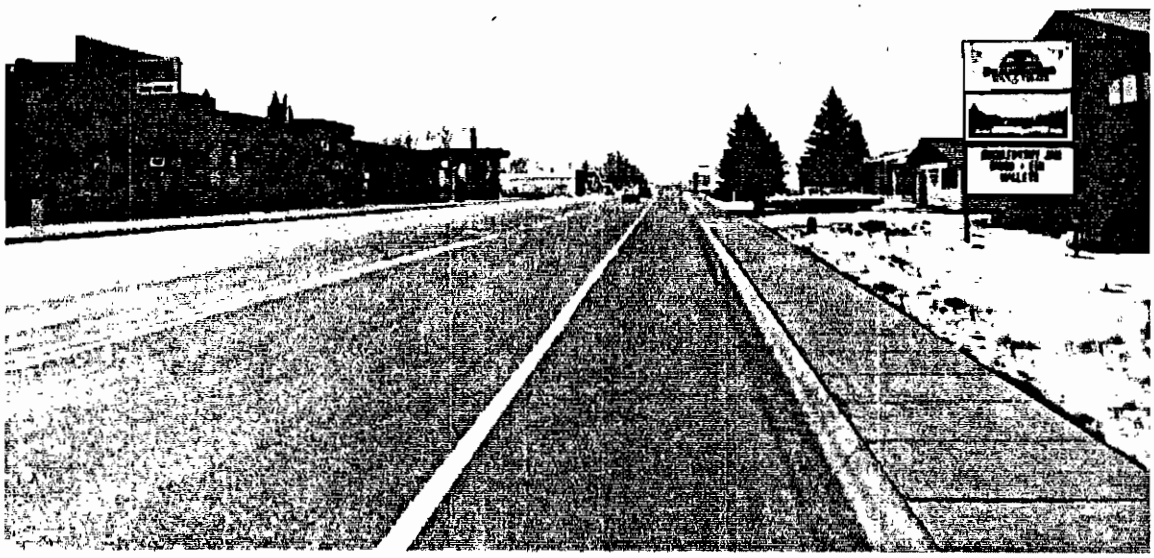


EXISTING 2 – LANE HIGHWAY

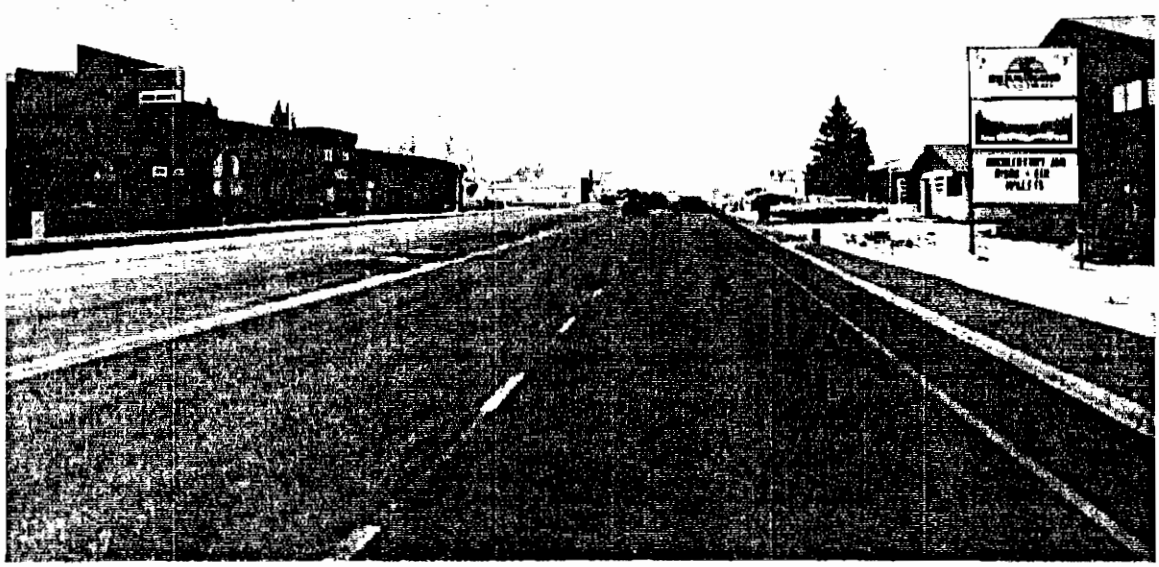


LANE CONFIGURATION A
WITH CONTINUOUS 2–WAY LEFT TURN MEDIAN

ARLEE LANE CONFIGURATIONS FIGURE 7.17-2



EXISTING 2 – LANE HIGHWAY



LANE CONFIGURATION C

ARLEE LANE CONFIGURATIONS (CONT.) FIGURE 7.17-2

directional signage, roadside interpretive and park facilities. With Alignments 2, 3 or 4, the creation of gateways with park and scenic/historic information at the north and south ends of Arlee will provide an opportunity to orient travelers to alternative scenic routes that expose travelers to areas of cultural and historic interest in the Jocko Valley.

If Alignment 2 is constructed, consideration should be given to locating it closer to the railroad tracks to improve the visual quality by conforming to the existing logical edge of the tracks.

Consider reclamation of the gravel pit at the south end of town for use as a roadside park and interpretive site to create a gateway and enhance the community image.

If Alignment 4 is constructed, it will visually conflict less with local field patterns if it more closely follows Pellew Creek.

7.17.5. Ronan Alignments

Existing conditions and Lane Configuration C on the existing alignment in Ronan are illustrated on Figure 7.17-3.[119] With Alignment 1 (existing alignment) and Alignment 2 (one-way couplet), visual quality in the foreground will deteriorate and enjoyment of scenic background views will be diminished similar to No Action. More traffic and congestion will worsen the existing visual and functional division for views of the road. Widening of the existing alignment to four lanes through Ronan will fragment an already discontinuous streetscape, removing "edge" buildings and vegetation, diminishing views from adjacent properties and encroaching on adjacent businesses and pedestrians. The scale of the road will visually and functionally divide the community, being incompatible with the scale of the community and roadside development, for views from the road.

In addition, Alignment 2 will introduce highway traffic into an existing residential setting which will change the visual environment.

Alignments 3 and 4 will divert traffic around the developed area of Ronan, and they will be outside all of the developed area visually contained in the Ronan community. However, future development is expected to extend west, beyond the routes of Alignments 3 and 4. Generally, they will be located between developed land and natural visual boundaries, and they will provide visual and physical access to the business district. Near its northern end, Alignment 3 will pass through and diminish the views of and from an established residential area. Alignments 3 and 4 will diminish views of and from agricultural land and scattered homes on their southern ends.

Alignment 4 (west of Ronan) will cross agricultural land diagonally and expose views of powerlines, sewage treatment facilities, a power substation and other industrial areas. These views will not provide a positive image of the community.

Alignment 4 will provide more area for the town to expand without having to cross the physical boundary of a highway. Alignment 3 will provide an interesting, somewhat distant view of an old granary.

Alignments 3 and 4 will provide opportunity to enhance the view for northbound travelers west to the Salish mountains.

Alignments 3 and 4 will be located on low ground, intersecting existing field and road patterns at odd angles.

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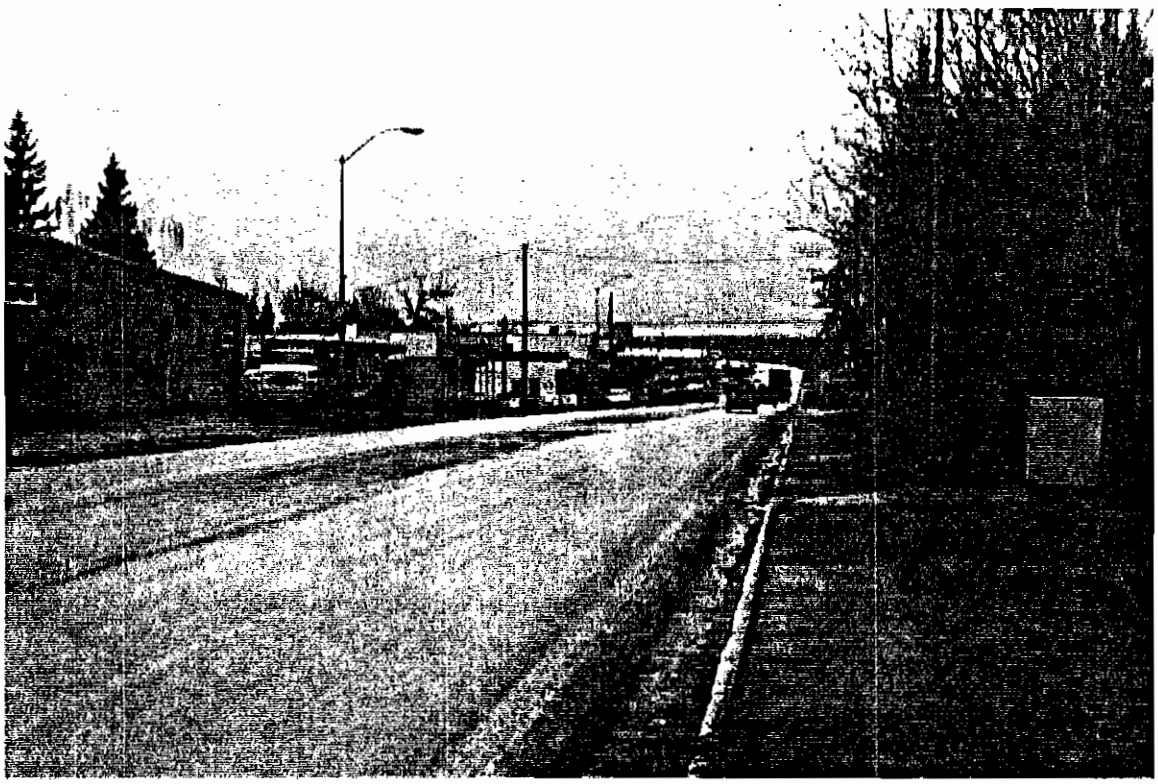
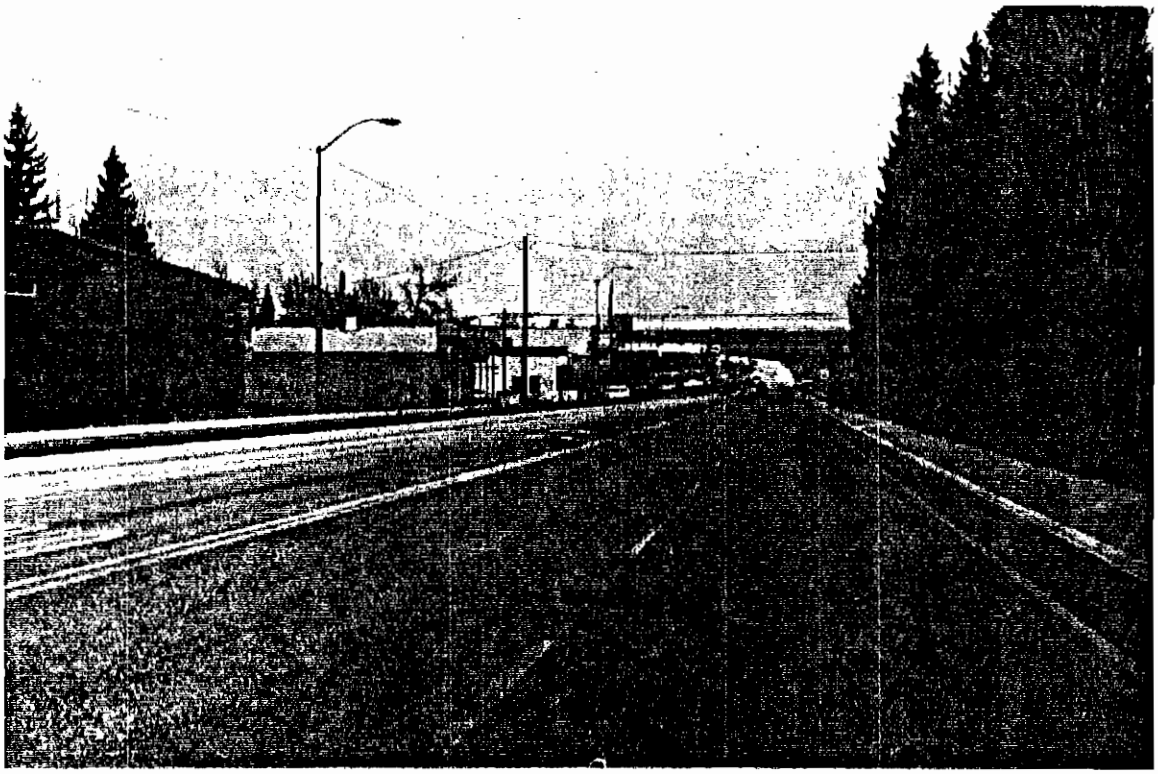
[119]This photographic representation is intended only to show the general appearance of the roadway after construction. It is not intended to show all design details, and some details may change when final design is completed.



EXISTING HIGHWAY WITH CONTINUOUS 2-WAY LEFT TURN MEDIAN



LANE CONFIGURATION C

RONAN LANE CONFIGURATIONS FIGURE 7.17-3

Mitigation

If Alignment 3 or 4 is constructed, the existing alignment should be retained and signed as a "business route" providing access for travelers to services. Community gateways on the north and south ends of town should identify routes and provide the opportunity to develop community identity, combining image enhancements, directional signage, roadside interpretive and park facilities. With Alignments 3 or 4, the creation of gateways with park and scenic/historic information at the north and south ends of Ronan will provide an opportunity to orient travelers to alternative scenic routes that expose travelers to areas of cultural and historic interest in the Mission Valley. A secondary gateway should be considered at the intersection of Main Street and Alignments 3 and 4 to invite travelers to visit downtown and take advantage of services.

To be visually compatible, Alignment 3 should be located west of 9th Avenue Northwest to avoid diminishing views of and from the developed residential area. The opportunity exists to follow Alignment 3 south to Little Martin Road, then cross diagonally to intersect the existing highway in the same location as Alignment 4. This will be less disruptive of visual quality for field patterns, and it will increase the area south of town for development expansion within a logical visual boundary.

7.17.6. Polson Landscape Unit

Alignment 1, if Lane Configuration B or C is constructed, will increase the highway width and create larger cut and fill slopes. The visual scale of the highway will increase, particularly through town. A single row of mature deciduous trees in Ducharme Park will have to be removed. The increased highway width will increase views of the lake and of town. (Figure 7.17-4)

Alignment 2 will increase views of Polson and Flathead Lake. However, new road segments plus a wider road along existing segments will be a visual impact to rural residential areas. Grade changes along Kerr Dam Road will require cut and fill to maintain an acceptable road grade; this will be a visual impact to nearby residential areas as well as to highway users.

Alignment 2 crosses the Flathead River at a new location. This new bridge crossing will be a visual impact to the existing river view from many areas of town. The users of the new bridge will experience a new view of the lake, river, and of Polson.

Alignment 3 will decrease views of Polson and Flathead Lake. Hilly terrain will not permit a view of the river until the road turns west to cross the river, and there will not be a view available of Polson. The new road segments and increased roadway width along existing segments of this alignment will have a visual impact to rural residential areas east of the Flathead River. Due to the hilly terrain that this alignment encounters as it travels parallel to the Flathead River, large cut and fill slopes will occur.

Alignment 3 crosses the Flathead River in a new location south of the airport and will be a visual impact to the existing river from rural residential areas. It will not be a visual impact from town. The users of the new bridge will experience a new view of the lake and the river.

Mitigation

Slope Cuts

Slope molding techniques will be used to enhance the diversity of the landform and provide visual variety. These include:

- Accentuating ridges and laying the slope back at draws.

VISUAL CHARACTERISTICS OF VIEWS & GRADE CHANGES FIGURE 7.17-4

- Modifying slope ratios to reflect existing terrain characteristics to minimize visual impacts.

All cut and fill slopes will be rounded at the top and bottom to present a softer transition between constructed and existing slopes. This may require greater disturbance of existing vegetation; however, scars due to clearing of vegetation heal faster. Cross-slope drainage should be treated with random placement of rock of various sizes to reduce their visual dominance. These drainages will be further softened by adding topsoil and seeding.

Revegetation

Vegetation will be re-established in patterns similar to adjacent undisturbed slopes. Grasses and wildflowers are valuable for soil stabilization and erosion control. Native grasses should be used on all disturbed areas, and wildflowers should be used in more highly visible areas. Soil mulches and netting, if needed, can be used to stabilize slopes until vegetation is established.

7.17.7. Visual Impacts of Highway Design Options

Several design options have been proposed as mitigation, safety or transportation needs. The impact of each option on visual quality is discussed generally in the following paragraphs. The manner in which relevant options, alignments and road details are combined and adapted to site-specific conditions will determine their impact on visual quality and effectiveness as mitigation measures. Appropriate applications of these options in specific locations are addressed in the discussion of mitigation of impacts in specific landscape units.

Access Control positively impacts visual quality by limiting strip development and influencing land development patterns adjacent to highway corridors. Access control reduces visual distraction associated with too many approaches and unclear definition of traffic patterns and the road edge.

Pedestrian Facilities. Pedestrian overpasses will reduce visual quality, interrupting views in all situations causing considerable encroachment in open, horizontal valley landscapes.

Painted Median. Visual acuity, particularly during periods of snow cover, may be a problem on roads frequented by a mix of travelers. Some are familiar with the route and "in a hurry", like commuters and logging trucks, while others are unfamiliar tourists driving at a leisurely pace.

Wildlife Fence. In general, fencing reduces visual quality by interrupting views. Lower, open fences in styles and materials characteristic of the landscape setting will be less distracting than fences placed in response to property lines. To reduce the visual impact, align fences to follow natural topographic, vegetation or water lines and avoid silhouetting against the sky.

Curb and Gutter. To the extent curb and gutter is used to define the road edge, control perimeter access and manage storm water, the visual impact will be positive. Potential negative impacts will result where this urban element is introduced into a rural setting. Use of gutter sections to reduce the need for ditches and hence minimizing the disturbance to landforms and landcover will have positive visual impacts.

Frontage Roads. Introduction of frontage roads to limit the number of turning points off and access points onto the highway will be visually desirable, providing opportunity for a visual buffer and further delineation of the road edge. Potential negative impacts may include excessive disruption of vegetation and further increasing the road width with all the associated disadvantages of wide roads discussed previously.

Bicycle Facilities may negatively impact the visual quality. When included as part of the roadway shoulder they will have little or no negative impacts. Construction of separate paths will disrupt additional landforms and vegetation and will have corresponding additional negative impacts.

Wildlife and Livestock Crossings require culverts or bridges to maintain livestock or wildlife routes. Bridges have the advantage of avoiding unnatural embankments commonly associated with installation of culverts. Where culverts are used the lengths should be increased and extended to eliminate unnatural slopes and embankments and avoid requirements for guardrail.

Traffic Signals. Visual impacts are negligible, and to the extent traffic signals improve safety, they increase travelers opportunity to enjoy scenery.

Directed Routes provide the opportunity to direct travelers to alternate routes designed to meet differing needs. Discussions have focused on alternate routes and truck routes near existing communities. Additionally, opportunities exist to develop commercial service, scenic or heritage routes. Visual impacts of directed routes may be positive or negative depending on the designation, location and land use controls associated with each. Truck routes should follow corridors where highway commercial services are already available. New corridors should be selected to expose travelers to cultural and scenic resources. Land use controls should be implemented to eliminate strip commercial sprawl.

Turnouts. The provision of turnouts increase the travelers opportunity to appreciate the scenic, historic and cultural aspects of the landscape. Visual quality for all viewers may be positively or negatively impacted depending on the siting, layout and design details.

Concrete Median Barriers in nearly all cases are a visual distraction, collecting dirt and introducing an urban element into a predominantly rural setting. Positive visual impacts include reduction of headlight glare for night time travelers, particularly along long straight road tangents.

Sidewalks may positively or negatively impact visual quality depending on location and resulting disturbance to existing roadside features.

One-way Couplet. Visual issues are site specific relating primarily to road width. Specific applications and related impacts are discussed in other sections.

7.18. RELOCATIONS

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.18.1. No Action

No removal of structures or relocations of households in residences ~~or commercial buildings businesses or other buildings~~ will be required with No Action. With No Action, structures near the existing highway will continue to be affected by highway traffic operation and resulting safety, air quality, noise, visual and other highway related impacts as described in related sections of this document. As traffic volume increases, these adverse impacts will become more severe. (Table 6.18-1)

7.18.2. Existing Alignment (Except Arlee, Ronan and Polson)

Table 7.18-1 summarizes removal of~~relocations of homes, businesses and other~~ structures that will or may be required for each of the lane configurations. Where it is indicated on the table that a structure will require removal~~relocation~~, it is because preliminary design and surveys have indicated that it will not be practical and feasible to construct the lane configuration while avoiding the structure with required excavation and embankment slopes. Also, it is not possible to adjust the alignment away from the structure without creating more severe ~~relocation or other~~ impacts in another area. Where it is indicated on the table that a structure may require removal~~relocation~~, it is because, though the structure is near the existing highway, it may be practical and feasible to avoid it by revising the highway design and ROW width or by adjusting the alignment away from the structure without creating more severe impacts in another area.

No structures will require removal~~relocation~~ if Lane Configuration A is constructed on the existing alignment, whereas Lane Configurations B, C or D, because of the wider width, will require removal~~relocation~~ of two, 16 and 35 structures, respectively.

Table 7.18-2 summarizes the types of buildings that may or will require removal.

The median value of owner occupied housing for Lake County in 1990 was $61,300. In 1990 median rent paid was approximately $260.[120]

Commercial buildings removed by the proposed action are occupied by small businesses that operate with single occupancy and employ 10 or fewer workers. They are primarily older buildings that are moderate and low cost commercial buildings.

Population growth has increased demand for housing, market value of housing units and cost for rental housing. Moderate and low cost housing is not readily available throughout the area.

Section 7.4.1.3 presents information about Environmental Justice Executive Order 12898 and Title VI of the Civil Rights Act of 1964.

[120]U.S. Department of Commerce, Bureau of the Census. 1990 Census of Population and Housing. Summary Population and Housing Characteristics and Summary Social, Economic and Housing Characteristics, Montana. 1990.

Table 7.18-1 ~~Removal of Structures~~Relocations - Continued

Milepost	Side	Description	Lane Configuration			
			A	B	C	D
Arlee Alignment 2						
17.2	East	Building	N	N	N	M
Arlee Alignment 3						
18.2	East	Building (Fish Hatchery/Out Building)	N	M	M	W
Arlee Alignment 4						
15.6	East	Residence	N	M	M	W
17.0	East	Building	W	W	W	W
Ronan Alignment 2						
46.3	East	Business (Warehouse)	M	NA	NA	NA
47.1	On CL	Business Office (CSKT)	W	NA	NA	NA
47.1	On CL	Business Office (CSKT)	W	NA	NA	NA
47.1	On CL	Business Office (CSKT)	W	NA	NA	NA
47.1	On CL	Business Office (CSKT)	W	NA	NA	NA
47.2	On CL	Business	W	NA	NA	NA
Ronan Alignment 3						
47.1	East	Building	W	W	W	W
47.1	East	Building	W	W	W	W
47.2	East	Residence	M	W	W	W
47.3	East	Residence	M	W	W	W
Ronan Alignment 4						
46.7	East	Building (Ball Park)	M	M	W	W
46.9	West	Buildings (4) (Mink Farm)	M	W	W	W

W - Will require ~~removal~~relocation. **M** - May require ~~removal~~relocation. **N** - Will not require ~~removal~~relocation. **NA** - Not applicable because this lane configuration is not under consideration in this area. **CL** - Center Line.

(Continued)

Table 7.18-1 Removal of Structures~~Relocations~~ - Continued

Milepost	Side	Description	Lane Configuration				
			A	B	C	D	**MDT Preferred Alternative**
Ronan Alignment 4 - Continued							
47.3	East	Power Substation	W	W	W	W	--
47.3	East	Building (Lumber)	W	W	W	W	--
47.3	East	Building (Lumber)	M	W	W	W	--
47.4	East	Building	M	W	W	W	--
47.8	East	Building	W	W	W	W	--
Polson Alignment 2							
59.7	North	Building (3), Residence (3)	N	M	N	M	--
58.1	South	Residence (2)	N	W	N	W	--
60.4	East	Residence, Building	N	W	N	W	--
60.9	West	Residence (3), Building (5)	N	W	N	W	--
Polson Alignment 3*							
56.7	North	Building (3), Residence (3)	N	M	N	M	M
58.1	South	Residence (2)	N	W	N	W	W
60.9	West	Residence	N	W	N	W	W
63.1	East	Building	N	M	N	M	M

Morrison-Maierle. 1993.
W - Will require removal~~relocation~~. **M** - May require removal~~relocation~~. **N** - Will not require removal~~relocation~~.
NA - Not applicable because this lane configuration is not under consideration in this area.
*Polson Alignment 3 is MDT preferred alternative.

Mitigation

Wherever practical and feasible, and where it can be done without causing more severe impacts elsewhere, adjust the highway alignment away from the structure to avoid the structure.

Wherever practical and feasible, and where it can be done without compromising highway safety, revise fill slopes and ROW width to avoid the structure.

In areas where removals~~relocations~~ may be required, construct the narrowest highway section that will still accommodate existing and projected traffic volumes.

MDT has a relocation assistance program whereby supplemental housing payments, moving costs, advisory assistance and other services are offered to individuals and households displaced by a highway construction project. The payments for relocation are offered in addition to the amount of just compensation for ROW requirements. The disposition of the buildings to be relocated will be negotiated with the owners -- they may be moved and reused, demolished and disposed of, sold to other parties or remain the property of the owners to do with as they see fit.

Federal highways are subject to provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended).[121]

The Intermodal Surface Transportation Efficiency Act (ISTEA), H.R. 2950, includes all references to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. They require compliance with Title VI of the Civil Rights Act of 1960. H. R. 2950-34, Section 1017 Acquisition of Rights-of-Way. Relocation resources are available for all displaced residential and commercial buildings without discrimination.

MDT policy is no person will move from their dwelling unit until there is available a comparable replacement dwelling unit. The replacement dwelling unit must be safe, decent, sanitary and open to persons regardless of race, religion or national origin.

Generally, persons residing in either conventional dwellings or mobile homes will be eligible for relocation payments. They will be eligible to receive referrals of available replacement properties, assistance in filing claims and other reasonable assistance necessary to assure successful relocation. Comparability primarily will be based on functional rather than physical similarity. Occupants of residential and commercial buildings are entitled to receive reasonable and necessary moving costs and related expenses in relocating their personal property, in accordance with established procedural requirements of MDT.

7.18.3. Arlee, Ronan and Polson Alignments

Table 6.18-1 shows existing buildings located within 200 feet of alignments in Arlee, Ronan and Polson. These structures may be affected by highway traffic operation and resulting safety, air quality, noise, visual and other highway related impacts as described in related sections of this document. Table 7.18-1 lists structures that will or may require removal~~ relocation~~.

[121]The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 is Public Law (P. L.) 91-646. P. L. 100-17, the Surface Transportation Act of 1987, amended certain provisions of P.L. 91-646.

Table 7.18-1 ~~Removal of Structures~~~~Relocations~~ ~~(This table has been changed in the final EIS)~~

Milepost	Side	Description	Lane Configuration				
			A*	B	C	D	MDT Preferred Alternative
Existing Alignment							
6.8	West	Community Center	N	N	N	W	N
6.9	West	Residence	N	N	M	W	M
7.0	West	MDT Maintenance Building	N	N	M	W	M
7.8	East	Residence	N	M	W	W	M
9.6	East	Garage	N	M	M	W	M
13.3	West	Residence	N	M	M	W	M
13.3	West	Building	N	N	N	W	N
14.0	East	Residence	N	N	N	W	N
15.0	East	Abandoned Residence	N	N	N	W	N
15.4	East	Motel/Residence	N	M	W	W	M
16.1	East	Residence	N	N	M	M	N
16.5	East	Residence	N	N	N	M	N
16.7	East	Power Substation	N	N	N	M	N
16.9	East	Residence	N	N	N	M	N
16.9	East	Residence	N	N	N	M	N
17.0	East	Residence	N	N	M	W	M
17.5	East	Residence	N	M	W	W	W
17.6	West	Vacant Building	N	M	W	NA	W
17.6	West	Retail Business	N	M	W	NA	W
17.6	West	Retail Business	N	M	W	NA	W
17.6	East	Canopy, Retail Business	N	M	W	NA	W

W - Will require ~~removal~~~~relocation~~. **M** - May require ~~removal~~~~relocation~~. **N** - Will not require ~~removal~~~~relocation~~.
NA - Not applicable because this lane configuration is not under consideration in this area.
*Lane Configuration A is the CSKT preferred alternative.

(Continued)

Table 7.18-1 ~~Removal of Structures~~**Relocations** - Continued

Milepost	Side	Description	Lane Configuration				
			A*	B	C	D	**MDT Preferred Alternative**
17.7	East	Retail Business	N	N	M	NA	M
17.8	West	Gas Pump Canopy	N	N	M	NA	M
17.8	East	Residence	N	M	M	NA	M
17.9	East	Residence	N	M	M	NA	M
18.0	East	Residence	N	M	M	W	M
19.0	East	Residence	N	N	M	W	M
19.1	East	Residence & Garage	N	N	W	W	W
20.0	East	Business	N	N	N	W	N
23.8	East	Business	N	N	N	W	N
30.4	West	Residence	M	W	W	W	W
31.7	East	Building	N	N	N	W	N
32.6	West	Business	N	N	M	W	N
32.6	East	Business	N	N	N	W	N
33.0	East	Business	N	N	N	W	N
35.0	East	Residence	N	N	M	W	M
35.0	West	Residence	M	M	W	W	W
36.5	West	Residence	N	N	M	W	N
37.0	East	Building	M	W	W	W	W
37.0	East	Building	N	M	M	W	M
37.1	East	Business	N	N	M	W	M
37.1	East	Building	N	N	M	W	M
37.5	East	Business (Lumber)	N	M	M	M	M

W - Will require ~~removal~~**relocation**. **M** - May require ~~removal~~**relocation**. **N** - Will not require ~~removal~~**relocation**.
NA - Not applicable because this lane configuration is not under consideration in this area.
*Lane Configuration A is the CSKT preferred alternative.

(Continued)

Table 7.18-1 ~~Removal~~**Relocations** - Continued

Milepost	Side	Description	Lane Configuration				
			A*	B	C	D	MDT Preferred Alternative
37.5	East	Business (Lumber)	N	M	M	M	M
46.8	West	Business	N	N	M	NA	M
46.9	West	Business	N	M	M	NA	M
46.9	West	Business	N	N	M	NA	M
46.9	East	Business	N	N	M	NA	M
51.8	East	Gas Pump Canopy (by Frontage Road)	N	M	M	W	M
52.5	West	Residence	N	M	W	W	W
54.9	East	Building	N	N	M	M	M
55.5	West	Building	N	N	N	W	N
55.5	East	Phone Substation	N	M	W	W	W
59.3	South	Residence	N	N	M	M	N
59.3	South	Residence	N	N	M	M	N
59.3	South	Building	N	N	M	M	N
59.3	North	Building	N	N	M	M	N
59.4	South	Building	N	N	M	M	N
60.4	South	Building	N	N	W	W	N
60.4	South	Building	N	N	W	W	N
60.6	South	Building	N	N	W	W	N
61.5	North	Building	N	M	M	M	N
62.1	North	Residence	N	M	M	M	N
Total buildings that will require ~~removal~~relocation along existing alignment			0	2	16	35	11
Total buildings that may require ~~removal~~relocation along existing alignment			3	22	33	11	25

W - Will require ~~removal~~**relocation**. **M** - May require ~~removal~~**relocation**. **N** - Will not require ~~removal~~**relocation**.
NA - Not applicable because this lane configuration is not under consideration in this area.
*Lane Configuration A is the CSKT preferred alternative.

Table 7.18-2 Summary of Removal of Structures: Existing Alignment and Polson Alignment 3
This is a new table in the final EIS.

Existing Alignment										
Type of Property	Alternatives									
	Lane Configurations								Preferred Alternative	
	A*		B		C		D			
	M	W	M	W	M	W	M	W	M	W
Residential	2	--	9	1	13	6	7	15	9	5
Conventional	2	--	8	1	13	5	7	14	8	5
Mobile Homes	--	--	1	--	--	1	--	1	1	--
Commerical	--	--	8	--	11	4	2	8	11	3
Public	--	--	--	--	1	--	--	1	1	--
Other	1	--	5	1	8	6	6	11	4	3
Total of buildings that will require removal		--		2		16		35		11
Total of buildings that may require removal	3		22		33		15		25	
Polson Alignment 3										
	Lane Configurations									
	A		B		C		D		MDT Preferred Alternative	
	M	W	M	W	M	W	M	W	M	W
Total of buildings that will require removal		--		3		NA		3		3
Total of buildings that may require removal	--		7		NA		7		7	

Morrison-Maierle and Carter Burgess, 1992.
*Lane Configuration A is the CSKT preferred alternative for the existing alignment. Polson Alignment 3 is the MDT preferred alternative. Polson Alignment 3 is not the CSKT preferred alternative.
W - Will require removal. M - May require removal. N - Will not require removal. NA - Not applicable because this lane configuration is not under consideration in this area.

7.19. ENERGY AND COMMITMENT OF RESOURCES

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.19.1. No Action

No Action will not improve highway operation and efficiency, but it will require no commitment of resources. As traffic volume increases, LOS will deteriorate and, as a result, efficiency of vehicles operating on the facility will decrease and energy use will increase.

7.19.2. Existing Alignment (Except Arlee, Ronan and Polson)

Construction of Lane Configurations B, C and D on the existing alignment will substantially improve traffic operations and efficiency by providing better alignments, more traffic lanes, better LOS and more roadway capacity. This improvement in efficiency and traffic operations will result in fuel savings and a decrease in vehicle wear. The long-term effect will, therefore, be a decrease in energy use.

Construction of Lane Configuration A on the existing alignment will provide better alignments, but will not provide additional traffic lanes (except in a few areas where additional passing lanes will be added) and will not substantially improve LOS or capacity. There will be only minor improvement in traffic operations and efficiency with corresponding minor improvement in fuel savings, decrease in vehicle wear and decrease in energy use.

Implementation of the proposed action involves a commitment of a range of natural, physical, human and fiscal resources. The approximate area of land to be converted to highway ROW with each of the alignment and lane configuration alternatives is described in Section 7.2 and summarized on Tables 7.2-1 through 7.2-45. Lane Configuration A will convert the smallest area of land to highway ROW, while Lane Configuration D will require the largest area. Land used in the construction of the facility is considered an irreversible commitment during the time period the land is used for a highway. However, if a greater need arises for use of the land or if the highway is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material will be expended. Approximate quantities of major construction materials required for each segment and lane configuration are summarized on Table 7.20-2 -- Lane Configuration A will require the smallest quantities, while Lane Configuration D will require the largest. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources.

The commitment of these resources is based on the concept that residents in the immediate area, state and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time and greater availability of services which are anticipated to outweigh the commitment of these resources.

7.19.3. Arlee, Ronan and Polson Alignments

As compared with Alignment 1 (existing alignment), construction of any of the lane configurations on Alignments 2, 3 or 4 in Arlee, Alignments 3 or 4 in Ronan or Alignments 2 or 3 in Polson will provide a substantial improvement in operation and efficiency because vehicles will generally be able to maintain uniform highway speeds

through the area and will be far less likely to be required to decelerate, stop or accelerate. Vehicles on these alignments will be affected by fewer driveways and intersections and related crossings of vehicles and pedestrians. This further improvement in efficiency and traffic operations will result in additional fuel savings and a further decrease in vehicle wear. Alignment 2, the one-way couplet, in Ronan will provide only minor improvement in traffic operation and efficiency over the existing alignment.

As indicated on Tables 7.2-1 through 7.2-45 and 7.20-2, construction of any of the lane configurations on Alignments 2, 3 or 4 in Arlee; 2, 3 or 4 in Ronan or 2 or 3 in Polson will require conversion of larger areas of land to highway ROW. It also will require larger quantities of construction materials than on Alignment 1 in these areas.

7.19.4. Transportation Demand Management

TDM measures such as transferring truck traffic to rail, increasing the use of public transit, promoting increased use of non-motorized travel such as bicycling and increasing the use of carpooling will serve to reduce energy consumption. As indicated in Section 5.3.3 of this document, any highway improvements should be designed to: 1) not reduce or adversely affect TDM activities already occurring and 2) accommodate and promote increased use of TDM.

Encouraging traffic to travel alternate routes such as MT 83 through the Seeley-Swan area will serve to increase energy consumption because vehicles will travel longer distances.

7.20. CONSTRUCTION

Alternatives for alignments, lane configurations and design options are described in detail in Section 5.1. The MDT Preferred Alternative and the CSKT Preferred Alternative, which consist of combinations of alignments, lane configurations and design options, are described in detail in Sections 5.3 and 5.4.

7.20.1. No Action

There will be no construction related impacts or costs with No Action.

7.20.2. Existing Alignment (Except Arlee, Ronan and Polson)

Construction related activities, with any of the lane configurations, will result in some short-term adverse impacts which cannot be avoided. These impacts will be temporary and should last only for the duration of construction activities:

- Emissions from asphalt plants and crushers (Section 7.7)
- Dust from construction equipment activities (Section 7.7)
- Increased noise levels from construction equipment (Section 7.8)
- Potential for erosion from fresh cut and fill slopes (Section 7.9)
- Increase in water turbidity in streams from construction activities (Section 7.9)
- Inconvenience to highway users resulting from delay, detours and temporary surfacing as described in the following sections
- Reduced access to businesses resulting from delay and detours of traffic

It is anticipated that construction will be completed under six or more separate construction contracts. The first contract (or contracts) is expected to begin no earlier than 1999~~1996~~ with the remainder of the contracts beginning over the next five- to-six years. No priority or schedule has been established indicating which portions will be constructed first or in what order succeeding contracts will begin. All construction schedules are highly dependent on availability of future funding.

It is estimated that each construction contract will require two construction seasons to complete.

If any of the lane configurations are implemented on the existing alignment, construction will be one the following two types:

- Widen and Overlay. With this type of construction, the existing highway roadbed will be retained and will be widened, generally on both sides but sometimes only on one side. Roadway slopes will be flattened on both sides of the highway to meet current safety standards, even when the highway is widened on only one side. The entire roadway will then receive an asphalt pavement overlay. This type of construction is planned in areas where the existing horizontal and vertical alignments adequately meet design standards; where the existing roadbed is in satisfactory condition; and where widening the highway in its current location will not severely impact environmental resources.

- Complete Reconstruction. With this type of construction, the existing highway roadbed will be removed and a new highway will be constructed. This type of construction will be required in areas where the existing horizontal and vertical alignments must be improved; where the existing roadbed is in unsatisfactory condition; in areas where the alignment of the highway must be adjusted to avoid severe environmental impacts; or if alternate alignments are selected at Arlee, Ronan or Polson.

Approximate lengths of each type of construction, along the existing alignment, are summarized on Table 7.20-1. Construction on all alternate alignments will include complete reconstruction.

Traffic will be maintained on the existing alignment with any of the lane configurations during construction. Few, if any detours will be required. Most of the construction will, of necessity, occur during summer months which coincide with periods of highest traffic volume. Substantial inconvenience and some delay will occur. A traffic control plan will be completed to maximize safety and minimize inconvenience to motorists. The plan will designate how traffic will be maintained through construction areas. (Section 6.1.4)

In most areas to be widened and overlaid, traffic will be maintained on the existing two-lane highway, while excavation, construction of gravel base courses and construction of the first layer of asphalt pavement are constructed on the outside edges. Traffic will then be maintained on one side of the widened highway, while the opposite side receives the final asphalt overlay.

The most serious periods of inconvenience and delay will occur with Lane Configuration A during the time the final asphalt overlay is constructed because only one-way traffic can be maintained, while still allowing room for construction equipment and crews to work on the remainder of the 40-foot total width. As a result, flagging and pilot cars will be used to allow one direction of travel to go through the area while the other waits. Lane Configurations B, C and D will result in less inconvenience and delay because they are wide enough (at least 28 feet are required outside construction work areas) to allow two-way traffic on one side of the highway, while the asphalt overlay is constructed on the other.

In areas to be completely reconstructed, inconvenience and delay will be greater. It is planned that, as much as possible, excavation, embankment, gravel base course and asphalt pavement will be constructed outside the existing roadway without disturbing it while traffic is maintained on it. As the existing roadway is removed and the new subgrade and gravel base courses are constructed, it is planned that traffic will generally be maintained on one side of the construction area while work continues on the opposite side. During most of this time, traffic will be on unsurfaced or gravel surfaced areas and watering or other methods of dust control will be required. Traffic speeds in these areas will need to be reduced, possibly by using pilot cars, to ensure that safety will not be reduced and to avoid damage to vehicles by flying gravel particles. Maintenance of traffic in this method will be more difficult with Lane Configuration A because of its narrower width -- one-way traffic with resulting increased delay will often be required. With the wider roadways of Lane Configurations B, C and D, it is expected that two-way traffic can be maintained most of the time and delay will be substantially less.

Because of inadequate width, poor condition or unsatisfactory vertical/horizontal alignments, it is planned that all existing bridges will be reconstructed with any of the lane configurations. At the railroad crossing at Finley Creek and at the Jocko River bridge, it is anticipated that traffic will be maintained on the existing bridge while the new bridge (with Lane Configuration A) or one-half of the new bridge (with Lane Configurations B, C and D) is constructed. Traffic will then be shifted to the new structure while remaining bridge work is completed. Traffic will be slowed during the construction period but little additional delay or inconvenience are expected.

Because of age, poor condition, inadequate capacity and poor location, it is expected that most existing culverts will be replaced. They will also be extended to accommodate the width of the new roadway. In these areas, part of the culverts will be constructed while maintaining traffic on the existing roadway then, traffic will be shifted to the new roadway over the new culvert while the remainder of the culvert is constructed. In some locations, alignment

Table 7.20-1 Summary of Construction Types

Segment	Description	Miles	
		Widen and Overlay	Complete Reconstruction
A	Evaro to Arlee	7.1	1.4
B1	Arlee - Existing Alignment	2.2	4.8
C	Arlee to Ravalli Canyon	2.5	0.0
D	Ravalli Canyon to Ravalli	0.0	2.0
E	Ravalli	0.0	0.9
F	Ravalli Hill	2.0	1.7
G	St. Ignatius	1.8	0.6
H	St. Ignatius to Highway 212	6.6	2.0
I	Highway 212 to Ronan	3.1	0.0
J1	Ronan - Existing Alignment	3.5	0.0
K	Ronan to Pablo	2.1	0.0
L	Pablo	3.9	0.0
M	Pablo to Caffrey Road	1.8	0.0
N	Caffrey Road to MT 35 - Existing Alignment	1.0	1.5
O	Polson - Existing Alignment	2.0	0.0
P	Polson North - Existing Alignment	1.2	0.6
Totals		40.8	15.5

Morrison-Maierle. 1993.

and space available may require the construction of temporary culverts and short detour roads around the construction area.

It is anticipated that most delay and inconvenience will occur during one construction season. Most excavation, embankment, pipe culvert installation, and possibly asphalt surfacing will be constructed during the first construction season. These are the major items that affect highway traffic and will cause the most delay.

Delays of up to 15 minutes will occur frequently, particularly with Lane Configuration A, during this first year to allow one-way traffic through narrow construction areas and to allow clearance and passage of trucks and other construction equipment. Few longer delays are anticipated and will not be allowed except where necessary and only

when requested several days in advance by the construction contractor. When these extended delays are anticipated, they will be advertised in advance using the local news media. They will be scheduled to avoid high traffic use periods such as weekends; morning and evening periods when people are traveling to and from work and school; or holidays such as Independence Day or Labor Day.

During the second season, it is anticipated that asphalt pavement (if not completed during the first season), seal coats, signing, striping, re-topsoiling and permanent seeding will be completed. These items will cause only brief, if any, interruptions in the flow of traffic.

No specific borrow sites have been identified for fill materials, gravel base courses and asphalt concrete aggregate. As final design is completed for each of the construction projects, these borrow sites will be identified and evaluated. Borrow material removal will be subject to applicable rules and regulations of the Montana Open Cut Mining Act -- a mine reclamation plan will be required. An erosion control plan, as described in Section 7.9 will also be required and will be developed by MDT. Table 7.20-2 summarizes gravel, plant mix and borrow quantities required for each section of the roadway.

Estimated construction costs for each segment for each of the alignments and lane configurations are summarized on Table 7.20-3.

Mitigation

Mitigation of adverse impacts that may result from air quality emissions related to asphalt plants and crushers and dust and other emissions from construction equipment on the roadway are discussed in Section 7.7.

Construction activities near communities or other noise sensitive areas will be allowed only during daylight hours to avoid disturbance at night.

An erosion control plan will be developed to avoid impacts to streams and other features during and after construction as outlined and described in Section 7.9. The erosion control plan will be prepared, not only for construction areas, but also for any borrow sources and gravel pits.

Inconvenience and delay to travelers on the highway will be minimized, to the extent practical, by developing and following a carefully planned traffic plan using methods describe above.

7.20.3. Arlee, Ronan and Polson Alignments

Construction related impacts are expected to be severe if Alignment 1 (the existing alignment) is followed through Arlee, Ronan and Polson. Air and noise pollution may occur in areas with a concentration of homes, businesses and other sensitive receptors. Maintenance of traffic and traffic control are expected to be much more difficult, particularly with Lane Configurations B and C (Lane Configuration D is not considered in these areas) because of the limited space available and the many intersecting streets and driveways and related crossing vehicles and pedestrians. Impacts on existing businesses will be substantial because, during particularly the first construction season, when excavation to subgrade occurs (to a depth of two feet or more beneath the existing roadway) and when gravel base courses are constructed, access to businesses located along the highway will be difficult, inconvenient and uncomfortable. It is expected that many potential customers will go elsewhere. Detours to parallel streets or roads may be considered through these communities, but is likely that even greater impacts may occur due to heavy volume of detoured highway traffic being diverted through residential, and normally quiet areas.

Table 7.20-2 Summary of Major Construction Quantities

Segment	Description	Lane Configuration A1			Lane Configuration B			Lane Configuration C			Lane Configuration D			MDT Preferred Alternative		
		Cubic Yards			Cubic Yards			Cubic Yards			Cubic Yards			Cubic Yards		
		Excav.	Asphalt Pav.	Gravel Base Courses	Excav.	Asphalt Pav.	Gravel Base Courses	Excav.	Asphalt Pav.	Gravel Base Courses	Excav.	Asphalt Pav.	Gravel Base Courses	Excav.	Asphalt Pav.	Gravel Base Course
A	Evaro to Arlee	350,000	10,850	98,020	496,400	31,990	236,900	584,000	38,000	281,290	817,600	32,820	317,840	567,940	36,050	269,879
B1*	Arlee - Existing Align.	157,000	15,590	144,250	222,400	29,430	255,050	261,600	35,050	303,230	366,200	32,180	305,330	261,600	55,050	303,230
B2*	Arlee - West Align.	147,600	15,860	153,820	209,200	29,960	270,860	246,000	35,590	321,620	344,400	32,650	322,780	--	--	--
B3*	Arlee East Align.	150,000	16,140	156,600	212,500	30,410	275,320	250,000	36,130	326,910	350,000	33,160	327,840	--	--	--
B4*	Arlee - Jocko Valley Align.	504,300	20,880	206,310	714,500	33,450	329,740	840,500	39,740	391,530	1,176,700	37,520	374,290	--	--	--
C	Arlee to Ravalli Canyon	34,500	2,450	21,020	48,900	9,080	61,870	57,500	10,790	73,460	80,500	9,110	87,540	50,362	9,370	63,840
D	Ravalli Canyon to Ravalli	159,400	5,730	56,600	215,400	9,180	90,460	290,800	10,900	107,410	409,300	10,290	102,680	215,400	9,180	90,460
E	Ravalli	24,800	2,400	14,860	37,200	3,720	23,090	41,300	4,530	27,910	61,900	4,320	26,840	41,300	4,530	27,910
F	Ravalli Hill	95,000	6,520	61,850	134,600	14,530	121,290	158,300	17,260	144,010	221,600	15,440	151,420	135,311	14,612	121,871
G	St. Ignatius	73,100	3,420	31,490	103,600	9,090	70,190	121,800	10,800	83,340	170,600	9,440	91,840	103,600	9,090	70,190
H	St. Ignatius to MTS 212	208,700	12,310	112,890	295,600	33,730	257,290	347,700	40,070	305,500	486,800	34,900	339,130	302,894	34,618	264,040
I	MTS 212 to Ronan	87,900	3,020	25,850	124,600	11,180	76,100	146,500	13,270	90,360	205,100	11,210	107,690	130,075	11,703	79,665
J1*	Ronan - Existing Align.	48,600	6,060	16,680	130,000	13,500	56,620	151,100	16,290	76,750	211,500	14,630	96,210	151,100	16,290	76,750
J2*	Ronan - One-Way Couplet	72,600	8,040	56,680	102,900	14,620	100,200	121,000	17,630	120,190	169,400	16,330	122,150	--	--	--
J3*	Ronan - West Align.	99,200	7,880	75,030	140,500	14,650	131,030	152,500	18,260	155,670	231,400	16,020	155,710	--	--	--
J4*	Ronan - West Align.	108,600	10,800	105,750	153,800	17,290	168,950	180,900	20,550	200,660	253,300	18,400	190,350	--	--	--
K	Ronan to Pablo	11,200	2,120	18,180	15,800	7,860	53,520	18,600	9,330	63,550	26,000	7,880	75,730	19,500	8,227	56,028
L	Pablo	87,600	4,960	35,970	124,100	14,580	93,850	146,000	17,430	111,940	204,200	15,090	129,850	140,306	16,689	107,236
M	Pablo to Caffrey Road	28,800	1,750	15,010	40,800	6,490	44,190	48,000	7,710	52,470	67,200	6,510	62,530	44,400	7,100	48,330
N-O-P1	Polson Alignment 1	190,000	13,500	117,000	278,000	25,800	209,000	317,000	31,000	285,000	472,000	28,400	242,000	236,900	19,980	176,600
N-O-P2	Polson Alignment 2	355,000	13,500	130,000	456,000	24,600	226,000	501,000	29,200	268,000	757,000	27,000	286,000	--	--	--
N-O-P3	Polson Alignment 3	342,000	17,200	169,000	473,000	29,700	281,000	508,000	35,200	334,000	767,000	32,800	352,000	1,207,000	80,100	716,000
TOTAL'		1,556,600	90,680	769,670	2,267,400	220,160	1,649,420	2,690,200	262,430	2,006,220	3,800,500	232,220	2,136,630	3,607,688	332,589	2,472,029

Morrison-Maierle, 1995. * On Existing Alignment throughout (Alignment 1 in Arlee, Ronan and Polson). ** In Arlee and Ronan, in order to compare construction quantities, portions of adjacent segments are included.
'Lane Configuration A is the CSKT preferred alternative for the existing alignment. Polson Alignment 3 is the MDT preferred alternative. Polson Alignment 3 is not the CSKT preferred alternative.

Table 7.20-3 Summary of Construction Costs

Segment	Description	Lane Configuration ($1,000)				MDT Preferred Alternative
		A[1]	B	C	D	
A	Evaro to Arlee	5,234	9,204	10,591	11,530	9,394
B1*	Arlee - Existing Align.	5,540	8,391	9,696	9,811	9,696
B2*	Arlee - West Align.	5,042	7,999	9,337	9,418	—
B3*	Arlee - East Align.	5,148	8,128	9,479	9,558	—
B4*	Arlee - Jocko Valley Align.	8,279	12,466	14,718	15,060	—
C	Arlee to Ravalli Canyon	1,274	2,219	2,567	2,727	2,278
D	Ravalli Canyon to Ravalli	1,827	2,635	3,161	3,381	2,635
E	Ravalli	1,084	1,348	1,505	1,535	1,505
F	Ravalli Hill	2,364	3,418	3,950	4,178	3,434
G	St. Ignatius	1,231	2,220	2,557	2,810	2,220
H	St. Ignatius to Highway 212	5,199	9,014	10,476	10,940	9,219
I	Highway 212 to Ronan	1,259	2,532	2,915	3,251	2,628
J1*	Ronan - Existing Align.	2,130	4,481	5,298	5,179	5,298
J2*	Ronan - One-Way Couplet	3,527	4,378	4,657	4,662	—
J3*	Ronan - West Align.	2,907	4,214	4,853	4,981	—
J4*	Ronan - West Align.	3,346	4,831	5,600	5,658	—
K	Ronan to Pablo	700	1,502	1,726	1,858	1,558
L	Pablo	2,322	3,792	4,294	4,633	4,163
M	Pablo to Caffrey Road	649	1,357	1,561	1,706	1,459
N-O-P1	Polson Align. 1	7,040	19,600	23,700	15,500	13,294
N-O-P2	Polson Align. 2	9,700	15,500	18,800	18,400	—
N-O-P3	Polson Align. 3	9,900	15,100	18,500	17,600	15,100
TOTAL**		37,853	71,713	83,997	79,039	83,881

Morrison-Maierle, 1993.
*On Existing Alignment throughout (Alignment 1 in Arlee and Ronan).
**In Arlee and Ronan, in order to compare construction costs of alignment alternatives, portions of adjacent segments are included.
[1]Lane Configuration A is the CSKT preferred alternative for the existing alignment. Polson Alignment 3 is the MDT preferred alternative. Polson Alignment 3 is not the CSKT preferred alternative.

With Alignment 2, the one-way couplet in Ronan, the new southbound roadway one block west of the existing alignment will be constructed first, while highway traffic remains on the existing highway. Businesses and residences located along the southbound route will receive impacts similar to those described above for Alignment 1 and Lane Configuration A except that fewer businesses will be affected and alternative access to most residences could be provided. When the southbound roadway is completed, US 93 traffic will be placed on it while the existing alignment is reconstructed. The construction for the two-lane roadway required for the northbound lanes will be minor and will involve only the construction of concrete curb and gutter and sidewalk, minor improvement to the existing pavement and an asphalt overlay.

If Alignment 2, 3 or 4 is constructed in Arlee, if Alignment 3 or 4 is constructed in Ronan, or if Alignment 2 or 3 is constructed in Polson, noise and air quality impacts may still occur but will be less severe because there are fewer homes and businesses located close to them. Maintenance of traffic will be much easier because traffic will be maintained on the existing roadway throughout construction and will not be substantially affected by highway construction.

Major construction material quantities and construction costs are summarized on Tables 7.20-2 and 7.20-3.

7.20.3.1. Economic Impacts of Project Construction

Project construction will have positive impacts on the Lake County economy by directly creating employment and earnings for area residents. The current MOA between MDT and CSKT provides that 80% of laborer jobs and 50% of truck driver and operator jobs be awarded to tribal members for highway construction projects on the Flathead Indian Reservation. The agreement insures that a high percentage of construction workers will be hired from the Lake County labor pool. Some Lake County residents who are not tribal members also will be hired by contractors. Most out-of-county workers are expected to commute from Missoula or Flathead County.[122]

To provide a representative estimate of economic impact associated with construction, employment and earnings are based on the construction requirements of Lane Configuration B, a four-lane highway. Comparisons are then provided for Lane Configurations A, C and D.[123]

Over the period of construction, Alignment 1 (existing alignment), with Lane Configuration B (four-lane highway) will result in total direct employment of 520 construction workers, measured in person years. Of the total construction workers, 302 (58%) will be from Lake County; there will be 269 tribal construction workers, which will be 52% of the total and 89% of Lake County construction workers. Annual average employment will be 65 total construction workers, of which 38 will be from Lake County and 34 will be tribal members. In addition to direct employment, construction will generate 241 indirect jobs in Lake County, for total direct and indirect employment of 543 jobs over the period of construction.[124]

Total direct earnings for construction workers will be $15 million, of which $8.4 million (56%) will be for Lake County workers. Workers who are tribal members will have earnings of $7.6 million, which is 51% of total construction worker earnings. In addition to direct earnings, construction will generate $4 million in indirect earnings in Lake County, for total direct and indirect earnings of $12.4 million over the period of construction. Annual average direct and indirect earnings for Lake County will be $1.6 million.[125]

Compared with the existing alignments at Arlee, Ronan and Polson, the alternate highway alignments that will have the longest distance of new highway construction around the communities will result in higher levels of employment

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[122]Jim Boyer. U.S. Highway 93 Economic Impact Analysis Technical Report. 1993.
[123]Ibid.
[124]Ibid.
[125]Jim Boyer. U.S. Highway 93 Economic Impact Analysis Technical Report. 1993.

and earnings ranging from 12 to 31%. Compared with Lane Configuration B, Configuration A will result in 40% less employment and earnings. Configurations C and D will increase employment and earnings by 17 and 22%, respectively, compared with Configuration B.[126]

Contractor and construction worker expenditures in Lake County will further benefit the local economy. Contractor purchases are expected to include concrete, gravel, fuel, and miscellaneous tools and supplies. Expenditures by Lake County construction workers will be similar to expenditures by other county residents. Purchases by non-local workers will be mainly for food and beverages and gasoline and convenience store goods. Local purchases will increase sales by Lake County businesses and create additional jobs and earnings for county residents.

Assuming Lake County residents are hired to fill secondary jobs induced by local contractor and construction worker purchases, the county unemployment will be reduced by about 0.6% for the full period of construction.

Mitigation

Potential air quality, noise, erosion and water quality impacts will be mitigated as described in Section 7.20.2.

If roadway construction occurs through Arlee, Ronan or Polson on the existing alignment, a detailed and well organized traffic control plan will be particularly important. The plan must be developed and coordinated with local business, CSKT and local governments to ensure that, to the extent possible, needs of the community are met and that delay and inconvenience are no more than necessary and that safety is not compromised. Advance notice of construction activities and weekly updates of construction activities, using local news media, will be useful.

[126]Ibid.

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8. LIST OF PREPARERS

The Federal Highway Administration (FHWA) in cooperation with the Montana Department of Transportation (MDT) is responsible for the preparation of this ~~draft~~final environmental impact statement (EIS). Table 8-1 lists representatives of these two agencies, and their education and experience. Morrison-Maierle, a Helena, Montana based engineering firm, under contract to MDT, prepared this document. Carter Burgess, a Denver, Colorado based engineering firm and a subcontractor to Morrison-Maierle, completed studies and evaluations related to the Polson, Montana area. Tables 8-2, 8-3 and 8-4 list representatives of Morrison-Maierle, Carter Burgess, and the Confederated Salish and Kootenai Tribes, their project responsibility, education and experience.

Table 8-1 List of Preparers, Agencies

Name, Title and Project Responsibility	Education	Experience
MONTANA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS:		
Joel Marshik, Manager Environmental Services, Environmental and Hazardous Waste Bureau, MDT	B.S., Civil Engineering B.S., Biology M.F., Forestry	~~Twenty four~~Twenty-eight years experience in U.S. Forest Service engineering, road design and water quality
Gordon Stockstad, Supervisor, Resources Section, Environmental and Hazardous Waste Bureau, MDT EIS Reviewer	B.S., Industrial Arts Education	~~Twenty four~~Twenty-eight years experience in Traffic Engineering, Highway Design and Environmental Analysis and Coordination
Thomas J. Barnard, Administrator, Highway Division, Montana Department of Transportation	B.S., Civil Engineering, Professional Engineer	~~Twenty seven~~Thirty-one years experience in highway design, construction and administration
Edrie L. Vinson, Past Chief, Environmental and Hazardous Waste Bureau, MDT Project Coordinator	B.A. and M.A., History and Archaeology	~~Eighteen~~Twenty-two years of experience in Environmental Management and Cultural Resource Preservation.
U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION		
Dale W. Paulson, Environmental and Project Development Engineer, FHWA Project Coordinator	B.S., Civil Engineering, Professional Engineer	~~Nine~~Thirteen years of experience in environmental coordination.

Table 8-2 List of Preparers, Morrison-Maierle

Name and Project Responsibility	Education	Experience
Brad Peterson, Project Manager	B.S. Civil Engineering Professional Engineer	~~Eighteen~~Twenty-two years of experience in highway planning, engineering, design and environmental evaluation.
John Hodnik, Assistant Project Manager	B.A. Political Science/Economics	~~Fifteen~~Nineteen years of experience in social, economic and land use planning.
Ginger Thomas, Consultant-Tribal Liaison	M.S., Wildlife Biology; B.A. Geography	~~Ten~~Fourteen years of experience in fisheries biology.
Gerald Graham, Preliminary Highway Design	Two-Year Degree, Civil Engineering Technology	~~Thirty-five~~Thirty-nine years of experience in planning and design of highways and streets.
Matt Delich, Traffic Operations	B.S. & M.S., Civil Engineering; Professional Engineer	~~Twenty-five~~Twenty-nine years of experience in traffic engineering and transportation planning.
Margaret Hofacker, GeoResearch, Inc., Air Quality	M.S., Environmental Engineering; B.S., Chemical Engineering	~~Three~~Seven years of experience in environmental engineering.
Tim Krause, Shapiro & Associates, Inc., Noise	B.S., Environmental Science; M.S. Environmental Systems Engineering; J.D.	~~Twelve~~Sixteen years of experience in preparing and reviewing environmental assessments and impact statements.
Mark Franchi, Floodplains	B.S., Civil Engineering	~~Four~~Eight years of experience in water resources.
Ray Breuninger, Wildlife and Wetland Coordination	Ph.D., Geology	~~Sixteen~~Twenty years of experience in environmental evaluation and assessment.
Joe Elliott, Threatened & Endangered Species	B.S., Biology and Chemistry; Ph.D., Botany	~~Twenty-one~~Twenty-five years of experience as an ecological consultant.
Janene Caywood, Historical Research Associates, Inc., Cultural Resources	B.S. & M.A., Anthropology	~~Thirteen~~Seventeen years of experience on cultural resource projects.
Daphne Digrindakis, Chen-Northern, Inc., Hazardous Materials	B.A., Geology	~~Ten~~Fourteen years of experience as an environmental scientist and reclamation specialist.

Table 8-2 List of Preparers, Morrison-Maierle (continued)

Name and Project Responsibility	Education	Experience
Sandra Fischer, Fischer & Associates, Visual Quality	B.S., Landscape Architecture; M.A., Art	~~Eighteen~~Twenty-two years of experience in landscape aesthetics.

Table 8-3 List of Preparers, Carter Burgess

Name and Project Responsibility	Education	Experience
Jeanette Lostracco Polson Project Manager	B.A., Geography; Master of Business Administration	~~Thirteen~~Seventeen years of experience in environmental analysis.
Gina McAfee, Assistant Project Manager	B.S., Landscape Architecture	~~Sixteen~~Twenty years of experience in environmental analysis.
Nancy Bauer Polson Transportation Planner	B.A., Social Ecology; M.A., Urban and Regional Planning	~~Fourteen~~Eighteen years of experience in transportation planning.
Joe Hart Transportation Analysis	M.S., University of Colorado; Montana Registered Professional Engineer	~~Sixteen~~Twenty years of experience in conceptual design, traffic engineering, transportation planning and transit analysis.
Nanette Neelan Traffic Operations and Conceptual Highway Design	B.S., Civil Engineering, Registered Professional Engineer	~~Twelve~~Sixteen years of experience in traffic highway planning, engineering and design.
Lee Cryer Noise and Air Quality	B.S., Economics; M.A., Regional Science	~~Six~~Ten years of experience in transportation planning.
Lisa Holewinski Visual Analysis	B.S., Ornamental Horticulture; Masters Landscape Architecture	~~Five~~Nine years of experience in planning and design of streetscape, parks and trails.
Jan McKee Greystone, Wetlands	B.S., Botany; M.S., Plant Ecology	~~Eight~~Twelve years of experience in vegetation and wetland evaluation, and impact analysis.
Mike Bonar Greystone, Wildlife	B.S., Environmental Biology	~~Five~~Nine years of experience in wildlife and threatened/endangered evaluation and impact analysis.
Jim Boyer Social and Economics	B.A., History; B.A.A., Marketing; M.S., Planning and Economics	~~Eighteen~~Twenty-two years of experience in socio-economic analysis in Montana.

Table 8-3 List of Preparers, Carter Burgess (continued)

Name and Project Responsibility	Education	Experience
Nick Kaufman WGM Group, Land Use	B.A., Economics; M.S., Rural, Town and Regional	~~Fifteen~~Nineteen years of experience in planning.
Lynn Fredlund GCM, Cultural	Ph.D., Archaeology; M.A., Anthropology; B.S., Anthropology	~~Twenty~~Twenty-four years of experience in cultural resource inventories and assessments.
Scott Richman	Bachelors, Environmental Design	~~Two~~Six years of experience in planning.

Table 8-4 List of Preparers, Confederated Salish and Kootenai Tribes

Name and Project Responsibility	Education	Experience
Dale Becker	B.S., M.S. Wildlife Biology	~~Four~~Six years of experience as a Wildlife Project Manager/Tribes.
Sue Ball	B.S., M.S. Wildlife Biology	Six years of experience as a Tribal Wildlife Biologist

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9. CIRCULATION OF THE ~~DRAFT~~FINAL ENVIRONMENTAL IMPACT STATEMENT

Copies of this ~~draft~~final environmental impact statement (EIS) are being furnished to federal agencies that have jurisdiction by law or special expertise with respect to any environmental impact involved and any appropriate federal, state, tribal or local agency authorized to develop and enforce environmental standards. This document is also being furnished to any person, organization or agency that has requested a copy of the entire document.

These entities include:

- Members, and the agencies or organizations they represent, of the Project Interdisciplinary Team as described in Chapter 10.

- Members, and the agencies or organizations they represent, of the community teams for Arlee, Ronan, Pablo and Polson as described in Chapter 10.

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x	Jim Beyer	NEPA Coordinator	Bureau of Indian Affairs	Box A	Pablo	MT	59855
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x	Ronan City Library			203 Main SW	Ronan	MT	59864
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x	Honorable Ken W. Hurt	Mayor, Town of St. Ignatius		P.O. Box 103	St. Ignatius	MT	59865
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x	St. Ignatius Public Library				St. Ignatius	MT	59865
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x	Roy Duff	Highway Commissioner		P.O. Box 185	Whitefish	MT	59937
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x	*Coalition for Canyon Preserv.	Sharlon Willows		Box 422	Hungry Horse	MT	59919
x	Ken Howlett			Box 392	Polson	MT	59860

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10. COMMENTS, COORDINATION AND ISSUES

10.1. COORDINATION

10.1.1. Prior Environmental Assessments (EAs)

The proposed action was originally planned for development in several sections, as summarized on Table 10.1-1.

Four sections were planned for development in 1989-90 by the Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA) including:

Evaro-Dirty Corner, 8.7 miles;
Dirty Corner-Ravalli, 12.4 miles;
Ravalli-North, 8.1 miles; and
Ronan-Polson, 11.2 miles.

Public coordination efforts were initiated and documented for each of these four projects -- a Notice of Intent was issued on 15 February 1989 for the Dirty Corner-Ravalli Project, 06 July 1989 for the Evaro-Dirty Corner and Ravalli-North projects and 16 January 1990 for the Ronan-Polson project. The notice was sent to tribal, federal, state and local agencies and affected private individuals and organizations. Several public scoping meetings were held and location and design public hearings were conducted for the Evaro-Dirty Corner, Dirty Corner-Ravalli and Ravalli-North projects. During this process and at the request of the Confederated Salish and Kootenai Tribes (CSKT), it was determined by FHWA in cooperation with MDT that a single environmental impact statement (EIS) should be prepared.

At the time of the decision to prepare an EIS, it was also decided by MDT and FHWA that the entire length of US 93, from Evaro to Polson should be included in the EIS analysis and documentation. For that reason the 12.3 mile-long Ronan-South section was added. In 1992, based on information received from public scoping meetings and preliminary environmental evaluations, it was determined by FHWA and MDT at the request of CSKT that the 3.8 mile-long section of US 93 through the city of Polson should also be included with the EIS.

10.1.2. U.S. Highway 93 Environmental Impact Statement (EIS)

On 08 August 1991, a Notice of Intent was prepared and mailed to federal, state and local agencies, and interested private organizations and citizens. The notice explained the scope and purpose of the proposed action, indicated that an EIS was being prepared and requested written comments.

On 04 September 1991, a meeting was held at the tribal complex in Pablo with representatives of MDT and CSKT to discuss upcoming public scoping meetings and how to best involve and solicit comments from the public.

An Interdisciplinary Team (ID Team) including representatives from tribal, federal, state and local agencies, and private organizations was established to provide a forum for members to discuss key issues and comments relating to their respective agency. The representative of each agency is listed on Table 10.1-2.

The purpose of the ID Team has been to discuss and provide recommendations on key issues, attend public scoping meetings and record comments, to present and review various studies, to review sections of the draft EIS and final EIS to ensure that each agency's concerns and recommendations are identified and addressed, and to develop recommendations for a preferred alternative ~~an "ID Team preferred alternative"~~ for the proposed action.

ID Team meetings ~~have been~~were held approximately every two to three months ~~during~~since the development of the draft EIS ~~began~~.

For Arlee, Ronan, Pablo and Polson, individual community teams were established to provide a forum for representatives of the community at large, including local government, businesses, and schools, to review alternatives for highway improvement and make recommendations specific to each community. A list of each community team is included in Tables 10.1-3 and 10.1-4. Each community team held meetings as shown in Table 10.1-5.

Table 10-1-1 Prior Projects

Project Number	Project Name	From Milepost	To Milepost
F5-2(8)6	Evaro-Dirty Corner	6.3	15.0
F5-2(34)15	Dirty Corner-Ravalli	15.0	27.4
F5-2(38)27	Ravalli-North	27.4	35.5
F5-2( )36	Ronan-South	35.5	47.8
F5-2(33)48	Ronan-Polson	47.8	59.0
NH 5-2(46)59	Polson	59.0	62.8

Table 10.1-2 Interdisciplinary Team

Interdisciplinary Team Members		
Joel Marshik, Manager Environmental Services Environmental and Hazardous Waste Bureau Montana Department of Transportation 2701 Prospect Avenue Helena, MT 59620	Derwyn Halvorson, Branch Chief Agency Roads Department Flathead Agency Bureau of Indian Affairs P.O. Box A Pablo, MT 59855	Kim Aipperspach Ronan City Council 440 7th Avenue NW Ronan, MT 59864
Dale W. Paulson Environmental and Project Development Engineer Federal Highway Administration 301 S. Park Street, Drawer 10056 Helena, MT 59626-0056	Chane Salois Irrigation Manager Flathead Irrigation Project Bureau of Reclamation P.O. Box G St. Ignatius, MT 59865	Dave Stipe Lake County Commissioner 106 4th Avenue E. Polson, MT 59860
Indian Programs Coordinator Region VIII, Montana Office Environmental Protection Agency Federal Building, 301 S. Park, Drawer 10096 Helena, MT 59626-0096	Department of Health and Human Services Public Health Service P.O. Box 280 St. Ignatius, MT 59865	Horace Brown Missoula County Surveyor Missoula County Courthouse Missoula, MT 59802
Howard Kutzer Rocky Mountain, Denver U.S. Department of Housing and Urban Development First Interstate Tower 633 17th Street Denver, CO 80888	Carol Gleichman Advisory Council on Historic Preservation 730 Sims Street #401 Golden, CO 80401	Kyle Karstens Polson City Council 1312 9th Street East Polson, MT 59860
Kevin Shelley Fish and Wildlife Enhancement Kalispell Suboffice U.S. Fish and Wildlife Service 780 Creston Hatchery Road Kalispell, MT 59901	Ginger Thomas Tribal Consultant Liaison Confederated Salish and Kootenai Tribes 502 Livingston Avenue Missoula, MT 59801	Tony Hoyt, Representative Flathead Resource Organization c/o Hummingbird Toys and Treats Box 281 Arlee, MT 59821
U.S. Army Corps of Engineers, Omaha District 215 N. 17th Street Omaha, NB 68102-4978	John Lindahl Soil Scientist U.S. Natural Resources Conservation Service 514 S. 23rd Avenue Bozeman, MT 59715	

Table 10.1-3 Community Teams

Arlee Community Team	Ronan Community Team	Pablo Community Team
Charlene Petet P.O. Box 354 Arlee, MT 59821	Kim Aipperspach Ronan City Council 440 7th Avenue NW Ronan, MT 59864	Jerry Slater Salish Kootenai College P.O. Box 117 Pablo, MT 59855
Tony Hoyt P.O. Box 281 Arlee, MT 59821	Jay Preston 717 2nd Place SW Ronan, MT 59864	Bryan Hall P.O. Box 277 Pablo, MT 59855
Gayle Crane, Superintendent School Dist No. 8 Box 37 Arlee, MT 59821	Gordon Granley 2200 Terrace Lake Road Ronan, MT 59864	Chane Salois, Irrigation Mgr. Flathead Irrigation Project, Bureau of Reclamation, P.O. Box G Pablo, MT 59855
Louie Adams CSKT Council Member P.O. Box 278 Pablo, MT 59855	Robert Halgren Superintendent: School District No. 30 532 4th Avenue SW Ronan, MT 59864	Larry Anderson, Principal Two Eagle River School P.O. Box 362 Pablo, MT 59855
Hank Baylor CSKT Council Member P.O. Box 278 Pablo, MT 59855	John Lozeau P.O. Box 278 Pablo, MT 59855	Lloyd Irvine CSKT Council Member P.O. Box 278 Pablo, MT 59855
Dave Stipe Lake County Commissioner 106 4th Avenue East Polson, MT 59860	Dave Stipe Lake County Commissioner 106 4th Avenue East Polson, MT 59860	Gerald Newgard Lake County Commissioner 106 4th Avenue East Polson, MT 59860
Aileen Meyer P.O. Box 283 Arlee, MT 59821		

Table 10.1-4 Polson Community Team

Polson Community Team		
Kyle Karstens Polson City Council 1312 9th Street East Polson, MT 59860	George Mahoney P.O. Box 1127 Polson, MT 59860	Jerry Sorenson Land Services 106 4th Avenue East Polson, MT 59860
Bob Fulton City Engineer 217 Main Street Polson,MT 59860	Pat Lefthand CSKT Council Member P.O. Box 278 Pablo, MT 59855	Bill Coffee Community Development P.O. Box 1506 Polson, MT 59860
Rich Forbis Chamber of Commerce 510 20th Avenue West Polson, MT 59860	Michael Lies City Council P.O. Box 1689 Polson, MT 59860	Fred Bente Montana Dept. of Trans. 2701 Prospect Avenue Helena, MT 59601
Jim Weaver Montana Dept. of Trans. P.O. Box 7039 Missoula, MT 59807	Don Smith School Dist. #23 414 6th Avenue West Polson, MT 59860	Ginger Thomas Tribal Consultant Liaison 502 Livingston Avenue Missoula, MT 59801

Table 10.1-5 Community Team Meetings

Town	Place	Date	Time	Purpose
Arlee	CSKT's Alcohol and Substance Abuse Program Office	20 October 1992	3:00 to 5:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Arlee area.
	CSKT's Alcohol and Substance Abuse Program Office	04 November 1992	3:00 to 5:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Arlee area.
	CSKT's Alcohol and Substance Abuse Program Office	13 January 1993	3:00 to 5:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Arlee area.
	CSKT's Alcohol and Substance Abuse Program Office	02 June 1993	3:00 to 5:00pm	Discuss proposal by CSKT concerning special mitigation measures for business impacts.
Ronan	Ronan City Hall	20 October 1992	7:00 to 9:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Ronan area.
	Ronan City Hall	04 November 1992	7:00 to 9:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Ronan area.
	Ronan City Hall	13 January 1993	7:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Ronan area.
Pablo	BIA East/West Conference Rooms	20 October 1992	7:00 to 9:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Pablo area.
	BIA East/West Conference Rooms	04 November 1992	7:00 to 9:00pm	Discuss alternatives, design options and issues related to proposed improvement to U.S. Highway 93 through the Pablo area.
	BIA West Conference Rooms	07 January 1993	6:00 to 8:30pm	Discuss the alternatives and issues related to proposed improvement to U.S. Highway 93 through the Pablo area.
Polson	Polson City Library	10 November 1992	7:00pm	Study background; sub-ID Team roles and responsibilities; EIS process/methodology; Public Involvement Program; selection of initial alternatives; and schedule.
	Polson City Library	02 December 1992	7:00pm	Reviewed Alternatives 1 through 6. Discussed issues map. Refined alternative routes, combining several.
	Lake County Courthouse	19 January 1993	7:00pm	Present and discuss alternatives A through H; review community planning issues; determine alternatives that will be advanced in the study.
	Lake County Courthouse	03 February 1993	7:00pm	Present and discuss alternatives; reduce number to a more manageable set to present at Scoping Meeting.
	Lake County Courthouse	05 August 1993	7:00pm	Community team recommended Alternative 3 as the preferred alternative.

An organized public scoping process has been conducted to encourage and provide an opportunity for public comment on the proposed action. Meetings have been held as shown on Table 10.1-6. A notice for each meeting was generally advertised one to two weeks prior to each meeting in newspapers in or near the area of the proposed action, including the Missoulian, Lake County Leader, Char-Koosta News and the Daily Interlake. Written notice of each meeting was also sent to all individuals and agencies who requested to be on the mailing list.

Each meeting has included a brief presentation explaining the history of the proposed action to-date, the environmental review process, the purpose of each meeting and planned future activities. Public comment has been requested and recorded by members of the ID Team and community teams on special forms. Displays have been available at each meeting and have consisted of maps showing alignments under consideration, drawings showing lane configurations under consideration and large scale aerial photographs. At some of the meetings, informational handouts have been provided. At all meetings, individuals have been encouraged to write their name and address on forms provided and they have been added to the mailing list. At all meetings, forms have been provided for submitting written comments.

The focus of the first three series of meetings was on the area in general, while meeting series four and five, and the three Polson meetings were on the specific community.

Other meetings have been held with public and private organizations interested in the proposed action including:

03 February 1992, meeting with the Kootenai and Salish culture committees at 11:00 am at the Longhouse in St. Ignatius

04 February 1992, meeting with the CSKT Tribal Council at 1:00 pm, tribal council chamber, in Pablo

04 May 1992, meeting of the members of the CSKT tribal staff at 10:00 am, in Pablo

26 August 1992, meeting of the members of the CSKT tribal staff (three meeting segments) held at the Lands Department, in Pablo

29 October 1992, ID Team meeting

13 November 1992, CSKT Tribal Council

21 January 1993, Polson Kiwanis Club meeting held at the Diamond Horseshoe Restaurant, in Polson

12 January 1993, Polson Rotary Club meeting held at the Pondera Restaurant, in Polson

02 February 1993, Polson/U.S. Highway 93 presentation to the CSKT Tribal Council, in Pablo

02 February 1993, St. Ignatius City Council meeting at 7:00 pm in city hall

03 February 1993, Polson Chamber of Commerce meeting at noon

22 February 1993, Polson City Council in Polson

02 March 1993, St. Ignatius City Council meeting at 7:00 pm in city hall

August 1993, CSKT Tribal Council, in Pablo

01 November 1993, Polson City Council in Polson

02 November 1993, Lake County Commissioners in Polson

14 November 1993, Polson/US 93 presentation to the CSKT Tribal Council in Pablo

11 January 1994, CSKT Tribal Council, in Pablo

28 January 1994, Salish-Kootenai College, television show, in Pablo

Table 10.1-6 Scoping Meetings

Meeting Series	Town	Place	Date	Time	Purpose
1	Arlee	Arlee Elementary School Cafeteria	03 October 1991	2:00 to 4:30 pm	To receive information from the public on issues that should be addressed in the EIS.
	Ronan	Ronan High School Gym	03 October 1991	7:00 to 9:30 pm	To receive information from the public on issues that should be addressed in the EIS.
	Pablo	CSKT Tribal Council chamber	21 November 1991	7:00 to 9:30 pm	To receive information from the public on issues that should be addressed in the EIS.
2	St. Ignatius	St. Ignatius Community Center	03 February 1992	2:00 pm	To receive information from the public on alternatives that should be addressed in the EIS.
	Polson[1]	Polson City Library	03 February 1992	7:00 pm	To receive information from the public on alternatives that should be addressed in the EIS.
3	St. Ignatius	St. Ignatius Community Center	04 June 1992	2:00 to 5:00 pm	Present findings of preliminary environmental studies and to receive additional information.
	Pablo	BIA West Conference Room, in Pablo	04 June 1992	7:00 to 10:00 pm	Present findings of preliminary environmental studies and to receive additional information.
4	Arlee	Tribal Community Center	28 September 1992	1:00 to 3:00 pm	To receive comment related to alternatives under consideration in the Arlee area.
	Ronan	Ronan High School Gym	29 September 1992	7:00 pm	To receive comment related to alternatives under consideration in the Ronan area.
	Pablo	CSKT Tribal Council Chamber	28 September 1992	7:00 pm	To receive comment related to alternatives under consideration in the Pablo area.
5	Arlee	Arlee High School lunchroom	02 December 1992	7:00 pm	To receive comment related to alternatives under consideration in the Arlee area.
	Ronan	Ronan High School Gym	01 December 1992	7:00 pm	To receive comment related to alternatives under consideration in the Ronan area.
	Pablo	BIA Conference Rooms,in Pablo	02 December 1992	1:00 to 3:00 pm	To receive comment related to alternatives under consideration in the Pablo area.
1[2]	Polson	Polson Elks Lodge	19 November 1992	7:00 pm	Introduce study and participants; its primary purpose and to receive public comments about Polson's traffic conditions and potential improvement.
2[2]	Polson	Lake County Courthouse Conference Room	15 December 1992	7:00 pm	Present a summary of concerns and comments raised at the first meeting; review more data and alignment alternatives.
3[2]	Polson	Elk's Lodge	16 February 1993	6:00 to 9:00 pm	Present summary of comments received at previous meetings and alternatives under consideration to be analyzed.

[1]Open forum held in Polson with focus on Project Area. [2]Specific Polson community team meetings.

On 09 December 1992, the ID Team; on 17 December 1992, CSKT staff and council members; and on 11 January 1994, CSKT council members and the ID Team; went on bus tours of the area of the proposed action. The focus of each tour was on wildlife and wetland impacts, and on alternate alignments in Arlee, Ronan, Pablo and Polson. Participants provided comments that combined recommendations, observations, and questions. (Public Comments, Book 2)

On 13 January 1993, the Flathead Resource Organization (FRO) prepared a proposal that offers design alternatives for the proposed action. The FRO Plan is based on improving safety, reducing traffic, and preserving local communities and the environment by improving the existing two-lane highway with specific design options, law enforcement, elimination of multi-trailer semis and development of mass transit, all of which are outlined, in detail, in their proposal. (Public Comments, Book 2)

10.1.3. Coordination of Response to Comments on the Draft EIS

A series of meetings was held between July 1995 and January 1996 to coordinate responses to comments on the draft EIS. The meetings were held at various locations on the Flathead Indian Reservation to discuss analysis of issues that will have changes in the final EIS. Table 10.1-7 presents a list of the meetings that were held to coordinate responses to comments on the draft EIS for the final EIS.

Table 10.1-7 Meetings Held To Coordinate Changes In The Draft EIS For The Final EIS
This table has been added to the final EIS.

Meetings Held To Coordinate Changes In The Draft EIS For The Final EIS			
DATE OF MEETING	LOCATION	PURPOSE OF MEETING	RESULT OF MEETING
27 April, 1995	Polson, MT	Discuss Ninepipe, wetlands and stream crossing issues.	Determined more coordination will be necessary for these items.
28 April, 1995	Pablo, MT	Discuss special management strategy for Evaro wildlife corridor.	Determined cooperating agencies are satisfied with jurisdictional preservation of habitat. Determined there is concern about design of wildlife underpasses.
28 June, 1995	Morrison-Maierle Inc. Helena, MT	Coordinate with Environmental Protection Agency (EPA).	Determined planned responses to comments will satisfy EPA concerns.
12 July, 1995	Arlee, MT	Discuss Evaro wildlife crossing.	Determined a wildlife overpass will be better than a wildlife underpass.
4 August, 1995	Pablo, MT	Discuss wildlife overpass structure and stream crossings.	Determined need for other meetings to respond to tribal comments.
17 August, 1995	Pablo, MT	Discuss comments on traffic analysis.	Decided to update traffic information from 1991 to 1994 and design year from 2015 to 2020.
17 August, 1995	Pablo, MT	Discuss comments of culture committees and tribal education program.	Determined need for additional meetings with culture committees.
29 August, 1995	Pablo, MT	Discuss coordination of responses to tribal comments and coordination with tribal council.	Decided to prepare issues summaries for tribal council as a basis for identification of a preferred alternative.
30 August, 1995	Pablo, MT	Discuss Ninepipe, wetlands and stream crossing issues.	Determined more information is needed for design of highway through Ninepipe area.
31 August, 1995	Pablo, MT	Discuss population growth and review method for estimating commuter-related population growth.	Decided to continue working on an estimate of commuter related population growth.
11 September, 1995	Polson, MT	Discuss school bus routes with superintendents of public schools.	Determined need to coordinate design of highway with school officials.
18 September, 1995	Pablo, MT and Ninepipe National Wildlife Refuge	Discuss design of highway through Ninepipe area.	Continue to develop information for the Ninepipe area.

Meetings Held To Coordinate Changes In The Draft EIS For The Final EIS			
DATE OF MEETING	LOCATION	PURPOSE OF MEETING	RESULT OF MEETING
19 September, 1995	Pablo, MT	Discuss revised traffic analysis.	Determined two-lane highway doesn't have adequate capacity and can't reduce traffic for desirable level-of-service.
20 September, 1995	Pablo, MT	Discuss method to estimate commuter-related population growth.	Continue to work on commuter-related population growth.
25 September, 1995	Pablo, MT	Discuss concerns of highway accelerating change and affecting traditional values.	Determined impacts will occur over next 20 years and safety must be important consideration.
16 October, 1995	Helena, MT	Review draft copies of issues summaries.	Continue to work on issues summaries.
16 November, 1995	Pablo, MT	Discuss mitigation of impacts to wetlands.	Decided to develop a wetlands mitigation plan before completion of final EIS.
17 November, 1995	Pablo, MT	Discuss revised analysis of air quality.	Determined method of analysis is acceptable and need to continue to coordinate information.
11-15 December, 1995	Pablo, MT	Conduct field reconnaissance of properties to be developed as replacement wetlands.	Use information for the wetlands mitigation plan.

10.2. COMMENTS

Comments were received from 455 individuals, businesses and private organizations during the public scoping process. Refer to the list of meetings in Section 10.1. The comments consist of written comments, letters and comments transcribed during scoping meetings. Table 10.2-1 shows the total comments on 18 issues by meeting series. Safety was a major focus of the comments and was associated with each of these issues.

10.3. ISSUES

The following is a list of issues that have been presented by participants in the public scoping process. The issues are generally listed under the headings corresponding to the section in the ~~draft~~final environmental impact statement (EIS) where they are discussed.

ALTERNATIVES UNDER CONSIDERATION (Chapter 5)

Public comments expressed interest in a set of alternatives that would consider whether it will be necessary to widen the highway to four lanes to provide adequate highway capacity and desirable level-of-service (LOS). Comments identified a range of transportation options to consider in the analysis of increasing traffic volume and the effect of highway improvement and transportation demand management (TDM) measures on highway capacity and LOS. It has been noted that traffic volumes and transportation needs during the five-month peak summer season (May through September) are greater than during the seven-month off-peak season.

Comments about highway improvement included consideration of two-lane, four-lane and divided four-lane configurations. Passing lanes, continuous two-way left-turn center medians, left-turn bays, alternate alignments around communities, one-way couplets, truck routes and design options such as access control and frontage roads have been suggested by the public. Other important highway design options mentioned by the public include improved approaches to the highway, improved intersections and turnouts for school buses and mail delivery.

Strong public opposition has been expressed for any alignment alternatives that divert traffic away from or around the community of Arlee and the city of Ronan.

Interest has been expressed in transportation demand management (TDM), which includes alternate highway routes and mass transit, conversion of truck to rail freight and various ridesharing strategies for traffic that regularly uses the highway.

Public comments identified U.S. Highway 93 in the Evaro-Polson area as a part of a regional transportation system centered on the highway and extending from the Idaho stateline northward through the Bitterroot, Missoula, Jocko, Mission and Flathead valleys to the Canadian border.

Table 10.2-1 Total Comments By Scoping Meeting Series

Information From Public Scoping Meetings:	Meeting Series #5 Community Focus			Meeting Series #4 Community Focus			Meeting Series #3 Project Area Focus			Meeting Series #2 Project Area Focus			Meeting Series #1 Project Area Focus			TOTAL OF ALL COMMENTS RECEIVED		
Open-ended discussion, so each comment does not mention every issue.	TOTAL COMMENTS			TOTAL COMMENTS			TOTAL COMMENTS			TOTAL COMMENTS			TOTAL COMMENTS			TOTAL COMMENTS		
	Fa	Op	WC	Fa	Op	WC	Fa	Op	WC	Fa	Op	WC	Fa	Op	WC	Fa	Op	WC
Existing Alignment-PSA	0	0	0	0	0	0	3	0	0	35	0	0	15	0	0	53	0	0
Existing Alignment-Towns	51	0	2	62	0	2	5	4	0	33	6	1	45	16	1	196	26	6
Alternate Alignment-PSA	0	0	0	0	0	0	2	1	0	1	3	1	4	1	0	7	5	1
Alternate Alignment-Town	4	22	6	7	19	2	2	2	0	23	5	2	20	9	0	56	57	10
Truck Route-Towns	1	0	1	4	1	1	1	0	0	4	0	0	3	0	0	13	1	2
One-Way Couplet	2	4	2	0	2	2	0	0	0	1	0	1	0	0	0	3	6	5
Widen Highway to 4-lanes	1	6	0	20	0	0	8	1	0	44	2	0	38	3	0	111	12	0
Improve Existing 2-lanes	12	0	0	3	0	0	1	0	0	11	0	0	14	0	0	41	0	0
More enforcement of speed limit	1	0	0	2	0	0	1	0	0	5	0	0	0	0	0	9	0	0
Lower speed limit	2	0	0	2	0	0	1	0	0	3	0	0	7	0	0	15	0	0
Access control	2	0	1	1	0	2	0	0	0	6	0	0	7	0	0	16	0	3
Continuous Left Turn Lane	2	1	0	2	5	4	1	2	1	9	11	0	5	10	0	19	29	5
More traffic signals/ controls	19	1	0	17	0	1	2	1	0	6	0	0	14	0	0	58	2	1
More pedestrian access	7	0	1	18	0	1	4	0	0	10	0	0	22	0	0	61	0	2
More bicycle access	5	0	0	5	0	0	3	0	0	3	0	0	12	0	0	27	0	0
Develop more rail freight	4	0	0	0	0	0	0	0	0	5	0	0	0	0	0	9	0	0
Develop more mass transit	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	5	0	0
Develop more HOV travel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total # Comments Forms	82			86			33			115			139			455		
Total attendance at mtg.	133			112			59			106			118			528		

Fa = Favor; Op = Oppose; WC = Would Consider --- PSA = Project Service Area --- HOV = High occupancy vehicle. SOURCE: Morrison-Maierle. 1990-1993.

There is interest in transit strategies and programs available with the Intermodal Surface Transportation Efficiency Act (ISTEA).

TRAFFIC OPERATION AND SAFETY (Sections 6.1 and 7.1)

Increased speed with a four-lane highway is a concern for improving safety and reducing accidents in communities and outside communities.

In communities, local residents identify traffic signals as a method to reduce speed, improve safety and increase access. Communities indicate that traffic traveling at highway speed is a barrier that restricts access for vehicles, pedestrians and bicyclists. There also is concern that widening the highway to four lanes will cause delay for traffic crossing the highway in communities. Public comments associated increased speed with the potential for increased accident rates on the highway outside communities.

Communities are concerned about comparing beneficial and adverse effects of diverting through traffic away from the existing alignment to alternate alignments. Alternate alignments will improve safety and access, but traffic is reduced for highway-oriented business. Alternate alignments contrast the safety and convenience of the traveling public outside communities with businesses that currently serve the traveling public in communities.

Throughout all of the public scoping meetings, by almost a three-to-one margin, public comments favored improving the highway with four-lanes rather than two-lanes.

LAND USE (Sections 6.2 and 7.2)

Public comments expressed concern about conversion of productive land to highway right-of-way (ROW). The value of a highway system that efficiently and safely provides transportation needs to be balanced with the value of land needed for the highway. Agricultural concerns identified effects on existing irrigation facilities, water rights and livestock crossings.

Governmental agencies with jurisdictional authority for land use planning and regulation are interested in integrating the land use planning process with access control and highway design and development.

Access control is seen as an aid for protecting existing businesses, controlling commercial strip development and residential sprawl, improving safety at approaches to the highway and for preserving access to county roads and maintaining value of private property. Land use also is an issue for establishing land use planning and regulation and coordinating jurisdictional authority among the tribal, county and municipal governments.

Land use also is of interest for highway signing and billboard controls that would balance rights of private property with the common desire to preserve the area's scenic values and natural setting.

Land concerns have also been expressed related to increased demand for use of recreation sites and wildlife habitat, as well as prime farmland and residential, commercial and industrial development.

SOCIAL (Sections 6.4 and 7.4)

Social concerns involve two types of population growth: 1) Ongoing growth that includes retirees, new residents who live and work in the area and temporary residents who maintain residences for seasonal occupancy; 2) population growth due to commuters who move to the area to live, but travel to work in the Missoula and Kalispell areas. If highway improvement results in more population growth, Native American social organization and the rural lifestyle would be influenced by the larger population. Public comments inquired whether highway improvement will accelerate or shift patterns of population growth, with increased demand on schools and other facilities/services.

ECONOMICS (Sections 6.5 and 7.5)

There is concern about the effects of increasing traffic and congestion on businesses that are located on or near the highway. Existing highway-related businesses will be less visible to through traffic with alternate alignments. If local sales decrease because of a shift in traffic, there will be losses of employment and earnings.

Availability of access to businesses and parking with increasing traffic and congestion also are considerations that are identified for businesses.

The highway will improve access from the area of the proposed action to Missoula and Kalispell, the region's major trade centers. With improved convenience and safety in travel, local businesses will be increasingly vulnerable to the concentration of retail trade and services in the larger communities.

PEDESTRIANS AND BICYCLISTS (Section 6.6 and 7.6)

Outside communities, public comments addressed whether separate bicycle, pedestrian and equestrian paths could be built parallel to the highway, rather than utilizing wider highway shoulders.

Signing, speed control, traffic signals, improving sidewalks and building pedestrian underpasses and overpasses also have been identified as methods to consider to improve access for pedestrians and bicyclists.

AIR QUALITY (Sections 6.7 and 7.7)

Environmental groups and CSKT expressed a need for a study of long-term impacts of air quality due to increased vehicle emissions caused by increasing traffic. It is a concern that an improved highway will increase traffic above recent rates of growth, rather than just providing adequate capacity and desirable LOS. There also is concern about the effects of using sand for maintenance during winter months, which causes airborne particulate matter, especially during the spring.

NOISE (Section 6.8 and 7.8)

Public comments indicated a concern that shifting traffic to rural areas will expose residential areas, cultural resources and recreation sites to increased noise.

WATER QUALITY (Sections 6.9 and 7.9)

There is concern that appropriate pollution control measures be used to assure protection of water quality, aquatic habitat and riparian areas. Increased development resulting from highway improvement is a concern for the capacity of water aquifers, which currently are exposed to high numbers of individual water and sewer systems. A future site for wastewater treatment is located in the area of a possible highway alignment on the northwest edge of Arlee.

Public comments indicated need for flood control and storm drainage, wastewater treatment and individual septic systems near highway development.

Existing and potential future channel changes of Jocko River, other streams (such as Spring and Agency creeks) and irrigation canals are a concern, especially to protect trout spawning from sedimentation and roadside drainage.

Mitigation for natural vegetation should be identified, including revegetation and erosion control.

Bridges over Jocko River and other streams should be constructed in a manner to adequately span the river and minimize channel modifications.

WETLANDS (Sections 6.10 and 7.10)

Highway improvement should replace the loss of wetlands, in accordance with Section 404 of the Clean Water Act.

Complete coordination between CSKT, the U.S. Fish and Wildlife Service (USFWS) and MDT will be important.

FLOODPLAINS AND STREAM CROSSINGS (Sections 6.11 and 7.11)

Bridges over Jocko River and other streams should be constructed in a manner to adequately span the river and minimize channel modifications. Culverts for streams and irrigation channels should be of adequate size to minimize damage from erosion due to floods and storm drainage.

Mitigation for natural vegetation should be identified, including revegetation and erosion control.

FISH AND WILDLIFE (Sections 6.12 and 7.12)

Public comments indicated concern with timing of construction activities to avoid impact on spawning trout, by designing culverts to allow fish passage.

Wildlife (black bear, deer, mountain lion, avocet, arctic swan, whistling swan, other waterfowl and turtles) are concerns for animal migration patterns and wildlife habitat, especially in riparian areas. There is a desire that highway design consider methods of reducing the danger of road kill, both for wildlife and human safety.

An existing problem with duck and turtle mortality is a concern for the highway through the Ninepipe National Wildlife Refuge. Six sensitive species (birds or waterfowl) are a concern, primarily in the vicinity of Kicking Horse and Ninepipe reservoirs.

Areas of special interest include:

- The Evaro area is a migration corridor for large mammals.
- Jocko River, Finley Creek and Spring Creek contain good populations of brown, rainbow and cutthroat trout -- care should be taken to avoid any additional encroachment by the highway.
- Mission and Sabine creeks contain good populations of trout and have high fishery and recreational value -- crossing designs should allow for adequate fish passage.
- "Avocet" pond for bird habitat, including whistling swans, south of the south Valley Creek turnoff
- In relation to wetlands, coverage of state or heritage program listed species is important.

THREATENED OR ENDANGERED SPECIES (Sections 6.13 and 7.13)

Threatened or endangered species are a concern and include grizzly bear, gray wolf, peregrine falcon, and bald eagle.

Preservation of migration routes, particularly for grizzly bear in the Evaro area, and installation of raptor-proof power lines are identified as methods to lessen effects of highway improvement.

CULTURAL RESOURCES (Sections 6.14 and 7.14)

Traditional cultural values and cultural resource sites are identified as concerns for highway improvement. Construction of a new, wider roadway may be a factor in changing the rural character and social organization of the area.

PARKS AND RECREATION (Sections 6.15 and 7.15)

Highway improvement will increase access to recreation in the area and throughout Flathead Valley. There is opportunity to coordinate travel information and manage recreation activities at various sites, including the National Bison Range, Ninepipe National Wildlife Refuge, Flathead Lake and other dispersed sites throughout the area.

HAZARDOUS MATERIALS (Sections 6.16 and 7.16)

Concerns about hazardous materials include:

- Truck traffic and the potential for spills of hazardous materials, especially near schools, in communities and at environmentally sensitive areas.

- Existing underground storage tanks that could be disturbed or concealed by construction.

VISUAL (Sections 6.17 and 7.17)

The development of a wider highway is a concern as a disturbance of the natural setting. Development along the highway, such as billboards and commercial strip development, are included with the highway facility as potential visual impacts.

Scenic/historic turnouts present an opportunity to provide clean, safe areas for viewing scenery. Maintaining existing views and developing new views from the highway is considered to be important for using scenic attractions to support the economy.

RELOCATIONS (Sections 6.18 and 7.18)

There is a concern the wider highway will displace existing businesses and housing and contribute to what is already perceived as a shortage of available residential land.

ENERGY/COMMITMENT OF RESOURCES (Section 7.19)

Public comments expressed interest in developing public transit, rail freight transit, and ridesharing or high occupancy vehicle travel. These items have the potential to limit use of energy and commitment of resources for both the amount of construction required for highway improvement and the amount of travel in individual vehicles. If reasonable and practical, these items will help to preserve adequate highway capacity and desirable LOS.

CONSTRUCTION (Section 7.20)

There is concern that construction along the route be designed and scheduled to minimize disturbance of communities, businesses and other human activities necessary to maintain the rural lifestyle.

Construction should reclaim any borrow areas that are created in the cut and fill operations.

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A. LIST OF ABBREVIATIONS

LIST OF ABBREVIATIONS

30 HV	30th Highest-Hourly Volume
AASHTO	American Association of State and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
ALCO	CSKT Aquatic Lands Conservation Ordinance
ARM	Administrative Rules of Montana
ATR	Automatic Traffic Recorder
bgs	Below Ground Surface
BIA	U.S. Department of the Interior, Bureau of Indian Affairs
BMP	Best Management Practices
CBD	Central Business District
CDP	Census Designated Place
CEIC	Montana Department of Commerce, Census and Economic Information Center
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
CFT	Code of Federal Regulations
CO	Carbon Monoxide
COE	U.S. Army Corps of Engineers
C2WLTL	Continuous two-way left-turn lane
CSKT	Confederated Salish and Kootenai Tribes
CSP	Corrugated Steel Pipe
CSPA	Corrugated Steel Pipe Arch
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibels
DHV	Design-Hourly Volume
EIS	Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
FAP	Federal Aid Primary
FAS	Federal Aid Secondary
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	U.S. Department of Transportation, Federal Highway Administration
final EIS	Final Environmental Impact Statement
FPPA	Farmland Policy Protection Act of 1981
FRO	Flathead Resource Organization
HUD	U.S. Department of Housing and Urban Development
ID Team	Interdisciplinary Team
ISC	Industrial Source Complex
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
Leq	Equivalent sound level, or average noise level
Leq(h)	Design hourly volume equivalent sound level
LOS	Level-of-Service
LWCF	Land and Water Conservation Fund
MAAQS	Montana Ambient Air Quality Standards
MAQB	Montana Air Quality Bureau
MAQS	Montana Air Quality Rules

MCA	Montana Code Annotated
MDFWP	Montana Department of Fish, Wildlife and Parks
MDHES	Montana Department of Health and Environmental Sciences
MDHES-WQB	Montana Department of Health and Environmental Sciences - Water Quality Bureau
MDNRC	Montana Department of Natural Resources and Conservation
MDT	Montana Department of Transportation
MHC	Montana Highway Commission
MM	Morrison-Maierle, Inc.
MME	Morrison-Maierle Environmental
MOA	Memorandum of Agreement
MPDES	Montana Pollutant Discharge Elimination System
MPH	Miles Per Hour
MRL	Montana Rail Link Railroad
MSHPO	Montana State Historic Preservation Office
MTS	Montana Secondary Highway
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as amended
NFIP	National Flood Insurance Program
NHS	National Highway System
NITS	National Intermodal Transportation System
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
Pb	Lead
PM_{10}	Respirable Particulates
PSD	Prevention of Significant Deterioration
ROW	Right-of-Way
RV	Recreational Vehicle
SCS	U.S. Department of Agriculture, Soil Conservation Service
SO_2	Sulfur Dioxide
SPO	CSKT Shoreline Protection Office
SSPPA	Structural Steel Plate Pipe Arch
SWPPP	Storm Water Pollution Prevention Plan
TDM	Transportation Demand Management
TDP	Transit Development Plan
TSD	Technical Support Document
TSM	Transportation System Management
TSP	Total Suspended Particulates
USC	United States Code
USDI	U.S. Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VPH	Vehicles per hour measured as service flows with LOS
WPA	Waterfowl Production Areas
MDEQ	Montana Department of Environmental Quality
TranPlan21	Montana Intermodal Statewide Transportation Plan
NRCS	U.S. Natural Resources Conservation Service

B. GLOSSARY

GLOSSARY

30th highest-hourly volume (30 HV):	The 30th highest-hourly volume of traffic used in the design of highway facilities.
A-weighted decibels (dBA):	A numerical expression of the relative loudness of sound.
Accident rate:	A method of measuring accidents based on the number of accidents per million vehicle miles.
Accident severity:	A method of measuring the effects of accidents based on the incidence of injuries, fatalities and costs.
Acre-foot:	Volume of water to cover one acre of land to a depth of one foot.
Accidents per mile	A method of measuring accidents based on the frequency for each mile of highway.
Ambient air:	That portion of the atmosphere, external to buildings, to which the general public has access.
Ambient air quality:	A physical and chemical measure of the concentration of various chemicals in the ambient atmosphere.
American Association of State Highway and Transportation Officials (AASHTO):	A professional organization that provides guidelines and standards forming policies for individual state design practices.
Average daily traffic:	Typical daily traffic volume on a highway.
Class I Area:	Any area which is designated for the most stringent degree of protection from future degradation of air quality. The Clean Air Act designates as mandatory Class I areas each national park over 6,000 acres and each national wilderness area over 5,000 acres.
Class II Area:	Any area cleaner than federal air quality standards which is designated for a moderate degree of protection from future air quality degradation. Moderate increases in new pollution may be permitted in a Class II area.
Criteria pollutant:	A pollutant for which EPA has established a national ambient air quality standard under Section 109 of the Clean Air Act. Present criteria pollutants are: carbon monoxide, hydrocarbons, lead, nitrogen dioxide, ozone, sulfur dioxide and total suspended particulate.
Design-hour volume:	The traffic volume for the design hour, usually a forecast of the relevant peak-hour volume, in vehicles per hour.

Dispersion:	The action of mixing air containing a high concentration of pollutants arising from a pollutant source with the ambient air thereby reducing the ambient pollutant concentration.
Facilities/services:	Public and private infrastructure that provides for needs such as transportation, communications, utilities, safety, health, education and general government.
Fee land:	Land in private ownership.
Gabion wall:	A construction method using cylinders filled with earth or concrete to fortify steeper highway slopes and limit need for right-of-way.
Instream flows:	A minimum streamflow maintained in a channel to support aquatic habitats.
Level-of-service (LOS):	A method to provide a qualitative description for operation of highway traffic.
Migration:	Change of population associated with movement into or out of an area.
Mitigation measure:	Measures to reduce adverse impacts on resources in the environment.
National Highway System:	Federal system with 160,000 miles of surface transportation facilities.
Non-point source:	Activity that contributes pollutants to water and air over a broad area rather than through a point source.
Nonattainment Area:	A geographic area in which the quality of the air is worse than federal air pollution standards.
Noxious weed:	Plant of a kind that is of foreign origin, is new to or not widely prevalent in the United States.
Passerine:	Small or medium sized songbirds having grasping feet with the first toe directed backward. Includes more than half of all birds.
Particulate Matter:	Finely divided solids or liquids. Respirable Particulates are less than 10 microns in diameter.
Point source:	A distinguishable, confined means of discharging a pollutant
Pothole:	A round depression in the land often filled with water.
Riparian areas:	Green zones which often border wetlands, lakes, streams, irrigation canals, reservoirs, potholes, springs and bogs.
Transportation System Management:	Recommendations for various transportation improvements.
Transportation Demand Management:	Measures that might help to reduce traffic demand to preserve or enhance traffic operations with highway improvement.

Trust land:	Land to which the federal government holds title as a trustee for the landowner.
Visually Sensitive Resource Areas:	Areas with special visual characteristics identified based on FHWA visual impact assessments for highway projects. Visual impact assessment considers qualities of vividness, intactness and unity. FHWA-HI-88-054
Watershed:	The total area of land between hilltops or mountain ridges draining into a water system.

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12. ~~DRAFT~~FINAL SECTION 4(f) EVALUATION

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12. SECTION 4(f) EVALUATION

12.1. GENERAL

Title 49 United States Code (USC) 303 states that "The Secretary may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance only if--

(1) there is no prudent and feasible alternative to using that land; and

(2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

It has been determined that use of land is constituted by the following:

1. When land from a Section 4(f) site is acquired for a transportation project or when there is occupancy of the land by easement, lease or other agreement. This type of use is referred to in this document as a direct use of Section 4(f) land.

2. When the proximity of the transportation project creates impacts that substantially impair the capability to perform any of the site's vital functions. This type of use is referred to in this document as a constructive use of Section 4(f) land.

This Section 4(f) evaluation has been prepared to identify Section 4(f) properties; identify and evaluate uses of Section 4(f) land that may be required; discuss avoidance alternatives that have been considered; identify appropriate measures to minimize harm; ~~and~~ document coordination that has occurred; and list conclusions.

Section 12.2 presents a summary of information about the purpose and need and alternatives under consideration for the proposed action. The following items of the environmental impact statement (EIS) are hereby referenced and made a part of this Section 4(f) evaluation:

- A description of the affected environment and identification and evaluation of potential impacts (Chapters 2, 6 and 7).

- A summary of comments and coordination that have been received and conducted for the proposed action (Chapter 10).

12.2. OVERVIEW OF THE PROPOSED ACTION

12.2.1. Purpose and Need for the Proposed Action

The proposed action is needed to improve transportation on U.S. Highway 93 (US 93), which is important to local, regional and nationwide travel. Transportation demand is high and is expected to continue to increase.

The high rate of population growth in the area served by US 93 from Evaro through Polson and throughout western Montana, combined with the growth in tourism, are sources of growth in traffic on US 93.

US 93 in the area of the proposed action, and for its entire length within Montana, is functionally classified as a principal arterial and is part of the National Highway System (NHS) as established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

The highway is part of an extensive system of arterial routes that include: Interstate Highway 90, Montana Highways (MT) 28, 35, 135, and 200 in Lake and Sanders counties; MT 83, which is east of the proposed action, in the Swan Valley of Lake and Missoula counties; and Montana secondaries (MTS)~~Federal Aid Secondary (FAS) routes~~ 211, 212, 382 and 559 in Lake and Sanders counties. (Figure 5.1-6)

Traffic is expected to continue to increase at the 1970-90 annual average rate of three percent, slightly more than doubling the existing volume by the design year ~~2015~~2020. ~~In the design year average daily traffic (ADT) will range from 10,510 at the permanent counter south of Ravalli to 13,110 in the Arlee area, 16,050 in the Ronan area and 21,700 in the Polson area.~~ Truck traffic is expected to continue to be 13.7% of total traffic south of MTS~~FAS~~ 212 and 10% north of MTS~~FAS~~ 212. (Figure 7.1-1)

The highway is important to safety, social well-being and the economy. US 93 is the major north-south transportation route in western Montana providing interstate, regional and local access to natural resources-based industries such as agriculture, forestry and mining, tourism and recreation.

The existing roadway has various geometric features that do not meet current standards for safety and design. Existing level-of-service (LOS) is poor, generally LOS D and E, compared with the desired standard of LOS B for rural highways. It is projected that by the design year ~~2015~~2020 capacity of the existing facility will be exceeded and the highway will be operating at LOS F in most sections. Accident numbers per mile are substantially higher than statewide averages.

12.2.2. Alternatives Under Consideration

Alternatives under consideration, described in following sections, include No Action, alignment alternatives, lane configuration alternatives, transportation demand management (TDM) measures, alternate highway routes and design options. (Chapter 5)

No Action

No Action will continue the existing transportation system with no substantial improvement.

Alignment Alternatives

The existing alignment, also referred to as Alignment 1, consists of reconstructing the roadway with only minor adjustments to allow for widening, to improve horizontal curves and vertical grades and curves, and to avoid important features adjacent to the roadway. (Appendix A, aerial photographs and maps)

Arlee alignments: (Figure 5.1-1)

Alignment 1, the existing alignment.

Alignment 2, west of Arlee and passing between the town and the existing railroad tracks.

Alignment 3, east of Arlee passing west of the rodeo grounds, east of the schools and southwest of the fish hatchery.

Alignment 4, leaves US 93 at Dirty Corner (near the Missoula/Lake county line near Milepost 15.1), continues north across the Jocko River, then continues northwest to rejoin the existing highway approximately three miles north of Arlee.

Ronan alignments: (Figure 5.1-2)

Alignment 1 is the existing alignment.

Alignment 2 is a one-way couplet that will carry southbound traffic one block west of the existing alignment on First Avenue Southwest. Northbound traffic will remain on the existing alignment.

Alignment 3 passes along the west edge of the community, approximately 0.6 mile west of the existing alignment.

Alignment 4 passes along the west edge of the community, approximately one mile west of the existing alignment, west of the sewage treatment lagoons and, for a short distance, adjacent to the railroad and a community ballfield.

Polson alignments: (Figure 5.1-3)

Alignment 1 is the existing alignment, with a bridge over the Flathead River constructed adjacent to the existing bridge.

Alignment 2 passes along Caffrey Road south of Polson, connects with Kerr Dam Road, crosses the Flathead River with a new bridge and connects with the existing highway east of the fairgrounds.

Alignment 3 is identical to Alignment 2 along Caffrey Road, then veers west by one-third to one-half mile and crosses the Flathead River with a new bridge at a point approximately 3,500 feet downstream from the Alignment 2 bridge crossing. It continues north along an alignment that is west of the airport and connects with the existing highway 1.5 miles north of Polson.

Lane Configuration Alternatives

Lane configuration alternatives: (Figure 2.3-1)

Lane Configuration A is a two-lane, two-way highway with auxiliary lanes (Figure 5.1-5). Where needed, passing lanes will be added for short distances, designated left-turn bays will be constructed at important intersections, and continuous two-way left-turn center medians will be constructed where there are high numbers of intersections and driveways.

Lane Configuration B is a four-lane highway with two traffic lanes in each direction. ~~A four-foot painted center median is a major design option that will be considered with this lane configuration.~~ Designated left-turn bays will be constructed at important intersections.

Lane Configuration C is a four-lane highway with a continuous two-way left-turn center median.

Lane Configuration D is a four-lane highway with a divided, unpaved center median. Designated left-turn bays will be constructed at important intersections.

Design Options

Major design options include partial access control, wildlife crossings, frontage roads, pedestrian and bicycle facilities and traffic signals. Section 5.1.6 presents detailed information about all design options considered with the alignment and lane configuration alternatives.

12.2.3. The Preferred Alternatives

There are two preferred alternatives that have been identified. The alternative preferred by the Montana Department of Transportation (MDT) is referred to in this document as the MDT Preferred Alternative. The alternative preferred by the Confederated Salish and Kootenai Tribes (CSKT) is referred to in this document as the CSKT Preferred Alternative.

Details of the MDT Preferred Alternative are presented in Section 5.3. The following is a summary of major features~~description~~ of the MDT Preferred Alternative:

Alignment 1, the existing alignment, is recommended as the preferred alignment from Evaro to Polson. At Polson, Alignment 1 is recommended as the designated route for US 93, and Alignment 3, which is approximately 5.8 miles long and passes south and west of Polson, is recommended as a truck route and as an alternate route around Polson.

Preservation of a corridor of land for future highway construction is recommended on Alignment 2 through the Arlee area and Alignment 4 through the Ronan area and will be accomplished by measures such as: 1) cooperative access control and land use planning and regulation with tribal and local governments; 2) purchase of easements, options or right-of-way (ROW) by MDT; and other public/private cooperative methods.

Table 2.3-1 and Figure 2.3-2 present information about the MDT Preferred Alternative for locations throughout the proposed action. Specific locations for the recommended applications of each lane configuration and design option are discussed in Section 5.3.

Lane Configuration A (a two-lane highway with passing lanes and other auxiliary lanes in some areas) is recommended for 3.8 miles in the city of Polson, where a substantial portion of highway traffic is shifted to Alignment 3. Lane Configuration A also is recommended initially for Alignment 3 at Polson until further traffic volume requires a four-lane highway.

Lane Configuration B (a four-lane highway), with ~~a four-foot-wide painted center median and~~ designated left-turn bays where appropriate, is recommended for most of the length of the proposed action (approximately 37.6 miles on the existing alignment and, when warranted by traffic volume, 5.8 miles on Alignment 3 at Polson).

Approximately 14.5 miles of the highway is recommended to be constructed as Lane Configuration C (a four-lane highway with a continuous two-way left-turn center median).

Lane Configuration D (a four-lane highway with a divided, unpaved center median approximately 40 feet wide), is recommended for a short distance (0.4 mile) in the area of the Evaro wildlife corridor.

Details of the CSKT Preferred Alternative are presented in Section 5.4. Following is a summary of major features of the CSKT Preferred Alternative:

With this alternative, the existing alignment, Alignment 1, is recommended throughout the length of the proposed action. Preservation of a corridor for future highway construction is recommended in the Ronan area but not in the Arlee area. Neither an alternative route nor preservation of a corridor for future highway construction around Polson is recommended.

Lane Configuration A is recommended throughout the length of this alternative with continuous two-way left-turn lanes, truck climbing lanes, slow moving vehicle lanes, left-turn lanes and right-turn lanes where appropriate.

12.3. SECTION 4(f) PROPERTIES

12.3.1. Parks, Recreation Areas and Wildlife and Waterfowl Refuges

Table 12.3-1 lists Section 4(f) parks, recreation areas and wildlife and waterfowl refuges near one or more of the alternatives under consideration. The table indicates whether or not direct use will be required of land from the site with any of the alternatives under consideration.

Following sections list and describe the parks, recreation areas and wildlife and waterfowl refuges from which direct use of land may be required with any of the alternatives under consideration.

Arlee Community Park

The Arlee community park is located adjacent to the east side of US 93 in Arlee at Milepost 17.7 next to the building that houses the Jocko Valley Library and the community center. (Sheet 4, Appendix A, aerial photographs and maps) The park has an area of less than one-half acre, includes one picnic table and a park bench and is used primarily by visitors to the community center and the library. There is access to the park from US 93 and B Street, and informal parking space is located on US 93 and B Street. The park is enclosed by a wooden fence, and an asphalt pedestrian and bicycle path is located between the west fence and US 93. The park is owned by Lake County.

National Bison Range

A part of the National Bison Range is located adjacent to the north side of US 93 throughout most of the area from Milepost 27.8 to 29.2, north of Ravalli on Ravalli Hill. (Sheet 6, Appendix A, aerial photographs and maps) The bison range is under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) and includes approximately 18,500 acres. It is fenced and is undeveloped with mostly steep terrain. Bison and other wildlife that inhabit the bison range roam and graze in this area. There is no formal public access to the bison range from US 93 but there are several access points located adjacent to other public roadways. An informal viewing and parking area (Figure 12.3-1a) has developed adjacent to US 93 using mostly unmaintained sections of old US 93 that remain from before the existing highway was constructed. As indicated below, CSKT operates a visitor center adjacent to US 93 across the highway from the Bison Range.

National Bison Range Visitor Center

The CSKT visitor center is adjacent to the south side of US 93 at Milepost 29.2 on the crest of Ravalli Hill. The visitor center has historical and travel information, covered picnic tables, and public restrooms. The entire site covers approximately eight acres. (Figure 12.3-1 and Sheet 6, Appendix A, aerial photographs and maps)

Ninepipe National Wildlife Refuge

The existing US 93, from approximately Milepost 40.4 to 40.9, is located within the Ninepipe National Wildlife Refuge, near its eastern edge (Figure 12.3-2). Ninepipe Refuge includes approximately 2,000 acres (approximately 1,300 of which is Ninepipe Reservoir) and is on land owned by CSKT, which grants an easement to USFWS to manage Ninepipe Refuge. It is fenced, undeveloped land and borders and surrounds Ninepipe Reservoir. Wildlife that inhabits Ninepipe Refuge roams and grazes in this area. Within this area, the Montana Department of Fish, Wildlife and Parks (MDFWP) operates a fishing access site. Access to the fishing access site is from US 93, but the site is not adjacent to highway ROW and no direct or constructive use will be required.

~~As indicated in Section 6.10, there are several wetlands on Ninepipe Refuge adjacent to and near existing US 93.~~

Table 12.3-1 Section 4(f) Parks, Recreation Areas and Wildlife Refuges

Section 4(f) Property	Direct Conversion of Use by Any Alternative	Direct Conversion of Use by the MDT Preferred Alternative
Arlee Community Park	Yes	Yes
Arlee Powwow Grounds	No	No
Arlee Rodeo Grounds	No	No
Arlee Elementary School Playground	No	No
Arlee Junior High School Playground	No	No
Arlee High School Athletic Field	No	No
Arlee Ballfield	No	No
National Bison Range	Yes	Yes
National Bison Range Visitor Center	Yes	Yes
St. Ignatius Ballfield	No	No
Ninepipe National Wildlife Refuge	Yes	Yes
Ninepipe Wildlife Management Area	Yes	Yes
Kicking Horse Waterfowl Production Area	Yes	Yes
Duck Haven Waterfowl Production Area	Yes	Yes
Ronan Ballfield near US 93	No	No
Ronan City Park	Yes	No
Ronan Ballfield near 13th Avenue S.W.	No	No
Ronan High School Athletic Field	Yes	No
Riverside Park	No	No
Ducharme Park	Yes	No
Lions Park	Yes	No
Polson Municipal Golf Course	Yes	No
Lake County Fairgrounds	No	No
Seventh Avenue Softball Fields	Yes	No

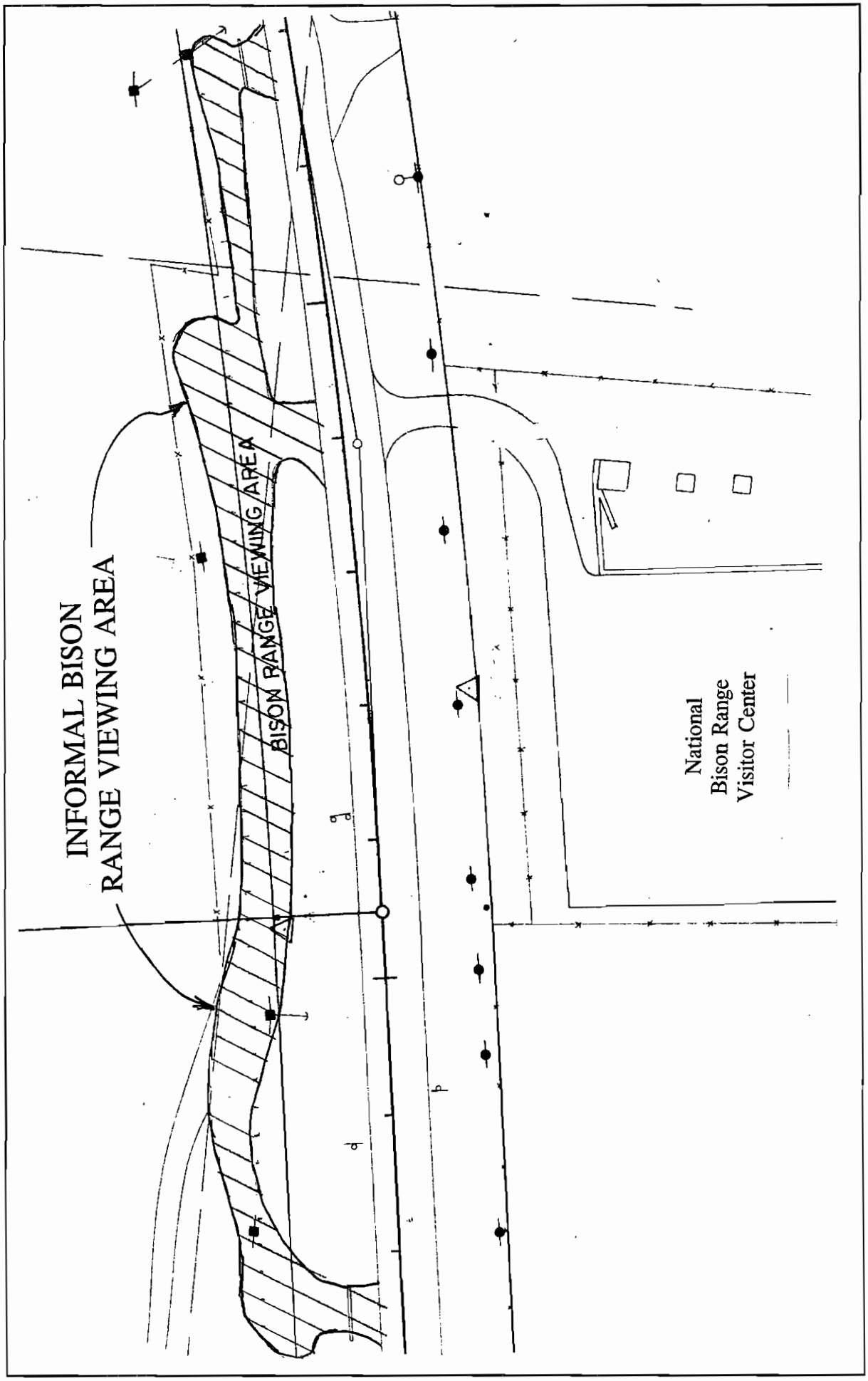

Figure 12.3-1a, Informal Bison Range Viewing Area

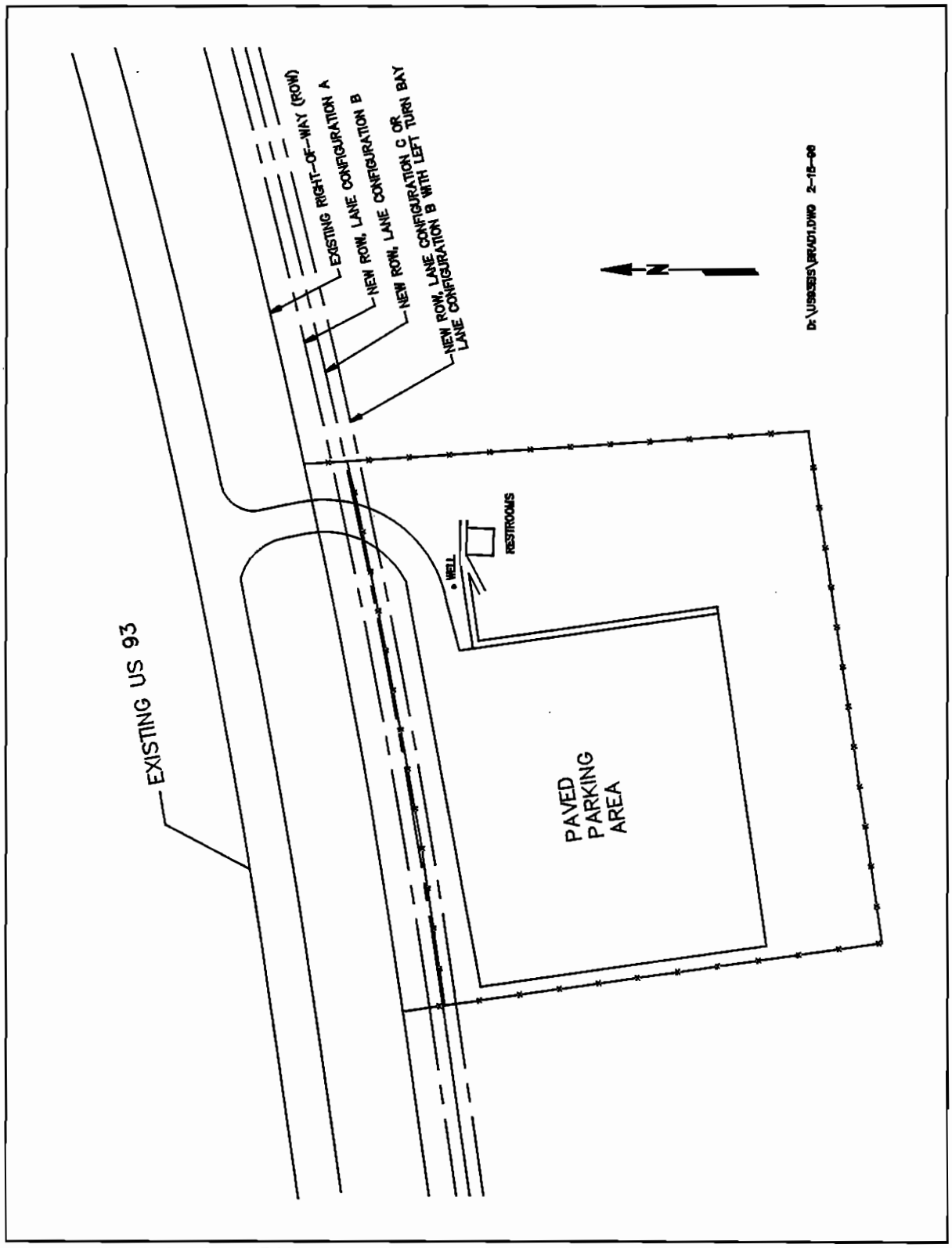

Figure 12.3-1 National Bison Range Visitor Center

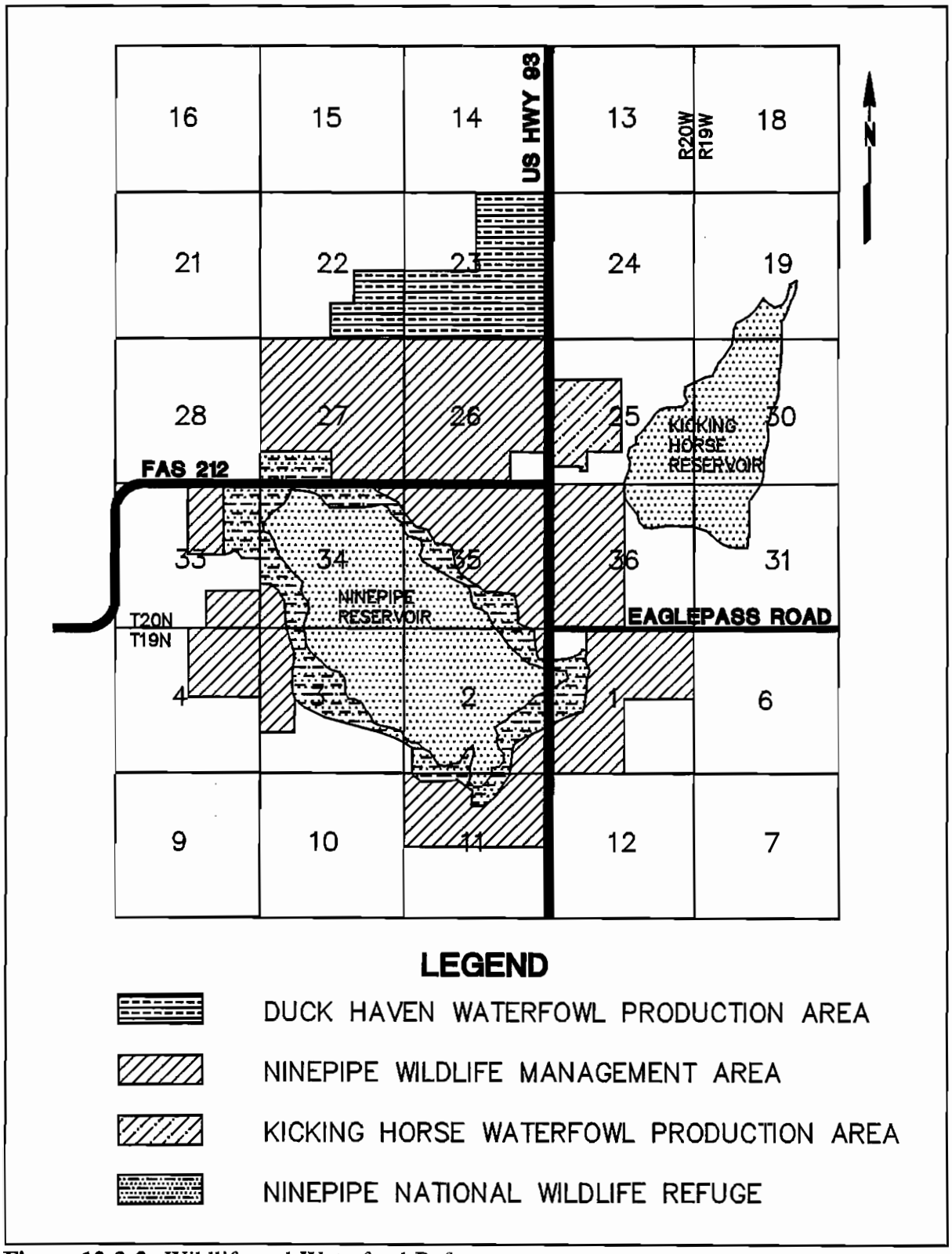

Figure 12.3-2 Wildlife and Waterfowl Refuges

Ninepipe Wildlife Management Area

The Ninepipe Wildlife Management Area (WMA) is adjacent to existing US 93 on the west from Milepost 39.6 to 43.1 and on the east from Milepost 40.1 to 42.1 (excluding Ninepipe Refuge and two small privately owned parcels). (Figure 12.3-2) The WMA land is owned by MDFWP and includes approximately 3,000 acres. This area of the WMA is fenced, undeveloped land and borders and almost surrounds Ninepipe Refuge. Wildlife that inhabits the WMA roams and grazes in this area. Within the WMA, MDFWP operates a wildlife viewing area. Access to the viewing area is from US 93, but the viewing area property is not adjacent to highway ROW.

~~As indicated in Section 6.10, there are several wetlands on the WMA adjacent to and near existing US 93.~~

Kicking Horse Waterfowl Production Area

The existing alignment of US 93, from Milepost 42.2 to 42.8 is located along the western edge of the Kicking Horse Waterfowl Production Area (WPA). (Figure 12.3-2) The Kicking Horse WPA is located just west of Kicking Horse Reservoir, is on land owned by USFWS and includes approximately 180 acres managed to include grassland/wetland complexes to favor nesting waterfowl. This area of the WPA is fenced, undeveloped land. Wildlife that inhabits the WPA roams and grazes in this area. There is no formal public access to the WPA from US 93. Access to the WPA is from an unnamed gravel road that extends eastward from US 93 opposite MTSFAS 212.

~~As indicated in Section 6.10, there are several wetlands on the Kicking Horse WPA adjacent to and near existing US 93.~~

Duck Haven Waterfowl Production Area

The existing alignment of US 93, from Milepost 43.1 to 44.1, is located along the eastern edge of the Duck Haven WPA. (Figure 12.3-2) The Duck Haven WPA is on land owned by USFWS north of Ninepipe Refuge and includes approximately 650 acres managed to include grassland/wetland complexes to favor nesting waterfowl. This area of the Duck Haven WPA is fenced, undeveloped land. Wildlife that inhabits the Duck Haven WPA roams and grazes in this area. There is no formal public access from US 93. Access is from Duck Road and Beaverhead Lane, which are paved county roads that extend westward from US 93.

~~As indicated in Section 6.10, there are several wetlands on the Duck Haven WPA adjacent to and near existing US 93.~~

Ronan City Park

The Ronan city park is located adjacent to First Avenue S.W., one block south of Main Street near Milepost 47.0 of the southbound portion of Alignment 2. The park includes approximately 1.6 acres in a residential area one block west of the existing alignment of US 93. It borders Ronan's central business district on Main Street. Spring Creek meanders through the park, which has walking trails, picnic areas and park benches. There is access from First Avenue S.W. and other city streets in the area. There is both formal and informal parking space on First Avenue S.W. and the other streets that provide access to the park. The park is open, and there are no sidewalks along the perimeter of the park. (Figure 5.1-2)

Ronan High School Athletic Field

The Ronan High School athletic field includes approximately 8.1 acres and is located in the northern end of Ronan, adjacent to buildings and parking lots on the school grounds. (Sheet 11, Appendix A, aerial photographs and maps) The athletic field is near Milepost 47.2 of the southbound portion of Alignment 2. The athletic field is west of US 93 and is separated from the existing highway by dispersed commercial development and open, undeveloped land.

Access to the athletic field is from school grounds. The athletic field is open, and there are no sidewalks along its perimeter. The athletic field, school buildings and school grounds are located in the same general area as several community ballfields.

Ducharme Park

Ducharme Park, located in Polson on the south side of US 93 near Milepost 60.6 at the US 93 intersection with Third Avenue and Seventh Street East, is one acre in size and is publicly owned and managed by the city of Polson. (Figures 12.3-3 and 12.3-4) Activities include passive recreation. The park is accessible via US 93, Third Avenue, or Seventh Street East. The site is grass-covered and contains a mixture of deciduous and coniferous foliage. Unusual characteristics include water and sewer lifts and a sewer drain on the site.

Lions Park

Lions Park in Polson is a scenic turnout located on the north side of US 93 near Milepost 59.5 directly west of the entrance to Country Club Shores and the golf course. (Figures 12.3-3 and 12.3-5) The site is almost two acres in size. It is owned by the Montana Transportation Commission and managed by the Polson Lions Club. Available activities include lake-viewing, picnicking, and obtaining regional activity information. Facilities include a Polson Chamber of Commerce information station, a parking area for 12 to 15 vehicles and two picnic tables. Access is available via US 93. There are no unusual characteristics.

This facility has received Land and Water Conservation Fund (LWCF) financial assistance and is therefore subject to the provisions of Section 6(f) of the LWCF Act, as amended. Direct use of land from this site will require approval of the U.S. Secretary of the Interior. It also will be necessary to substitute other properties of at least equal fair market value and reasonably equivalent usefulness and location for the recreation lands used.

Polson Municipal Golf Course

The Polson Municipal Golf Course is divided into three adjacent properties. The original golf course, the front nine, is located on the north side of US 93, from Milepost 59.3 to 59.5, directly east of Lions Park. (Figures 12.3-3 and 12.3-6) The Country Club Shores residential units, the clubhouse and pro shop are all located between Bay Shore and Bay View drives one block north of US 93. The new course, the back nine, is located directly east of Bay View Drive. The golf course properties are 122 acres in size. It is owned and managed by the city of Polson. Available activities include recreational golfing, golf instruction, dining and retail. Facilities include parking, 18 holes, benches, ball cleaners, a clubhouse with food, pay phones, restrooms and a pro shop, and a golf course maintenance and equipment storage facility. The site has two points of access from US 93. Unusual characteristics include the original clubhouse, which is used for live theater productions, the original pro shop, and a caretaker's cabin on the site.

This facility has received LWCF financial assistance and is therefore subject to the provisions of Section 6(f) of the LWCF Act, as amended. Direct use of land from this site will require approval of the U.S. Secretary of the Interior. It also will be necessary to substitute other properties of at least equal fair market value and reasonably equivalent usefulness and location for the recreation lands used.

Seventh Avenue Softball Fields

The Seventh Avenue softball fields are located near Polson at the southeast corner of Kerr Dam Road and Seventh Avenue near Milepost 61.0 of Alignment 2. (Figures 12.3-3 and 12.3-7) The site is 20 acres in size. The park is owned and managed by the city of Polson. Activities include softball, basketball, picnicking, and passive recreation. Facilities include parking, two softball diamonds, four dugout structures, two backstops, bleachers, restrooms, a concession stand, a picnic pavilion, an asphalt basketball court, a swing set, and a water pump station. An unusual characteristic is that the site is on a high water table and attracts several species of waterfowl.

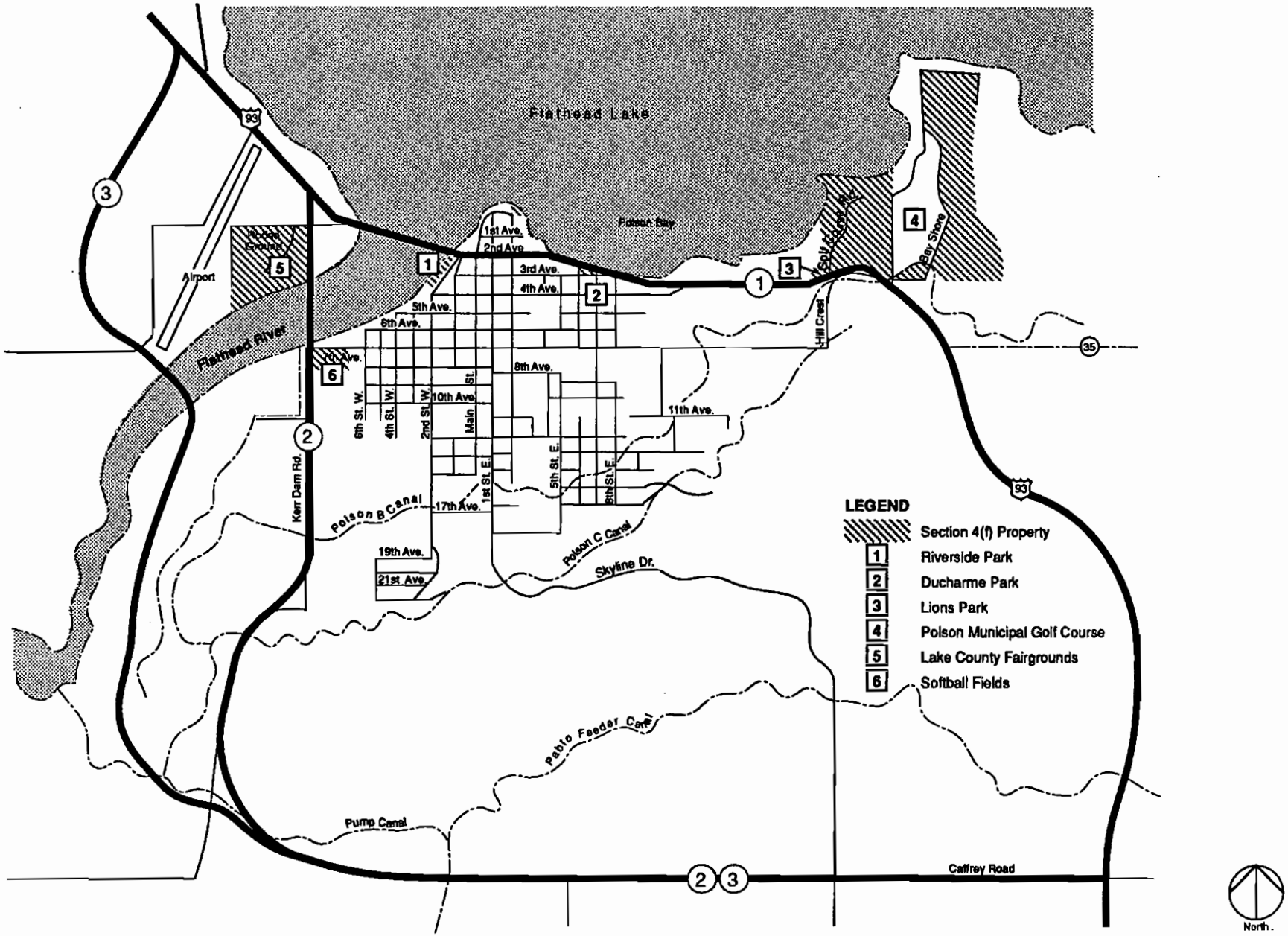

FIGURE 12.3-3
Polson Section 4(f) Properties

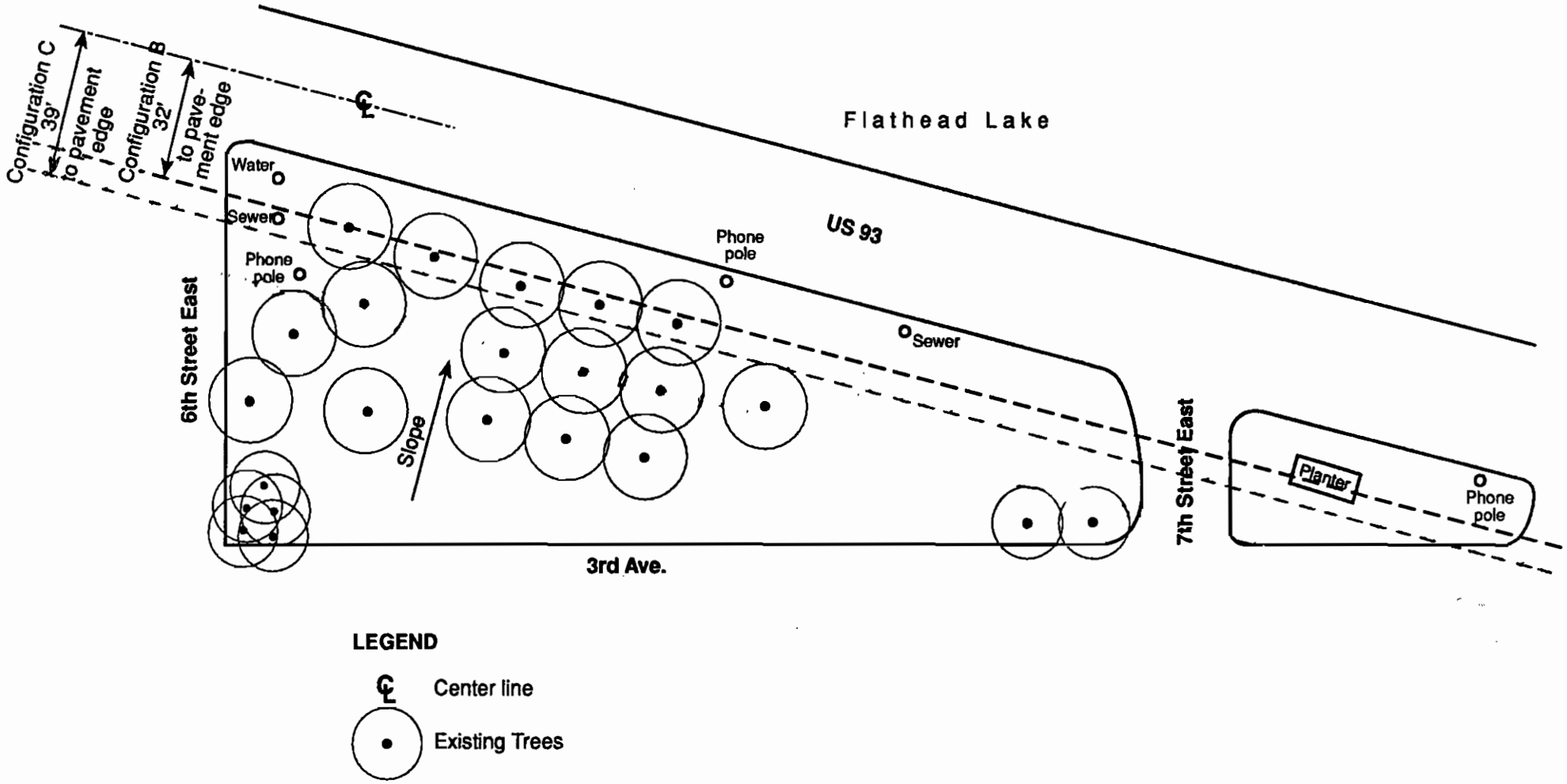

FIGURE 12.3-4
Ducharme Park

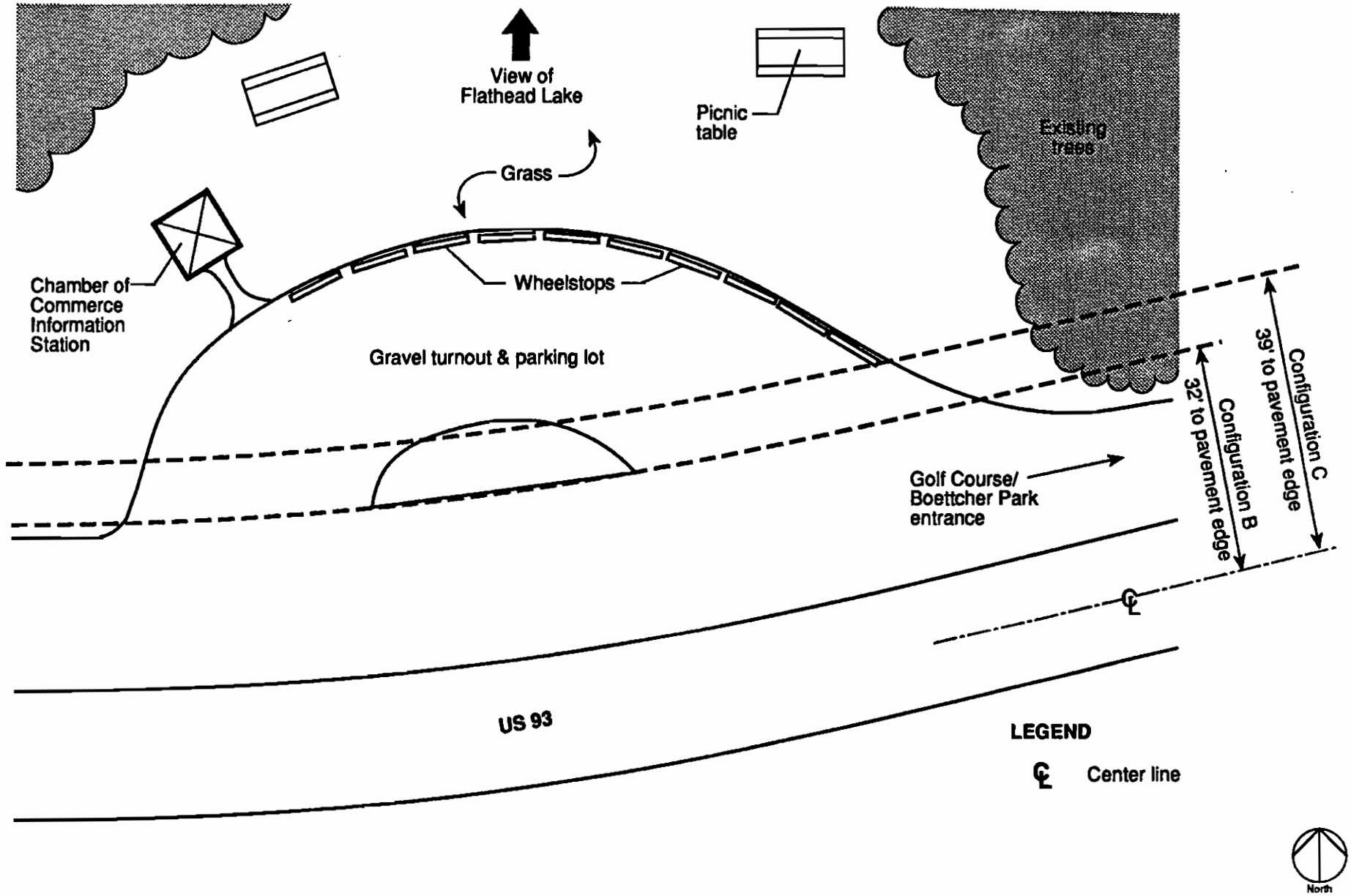

FIGURE 12.3–5
Lions Park

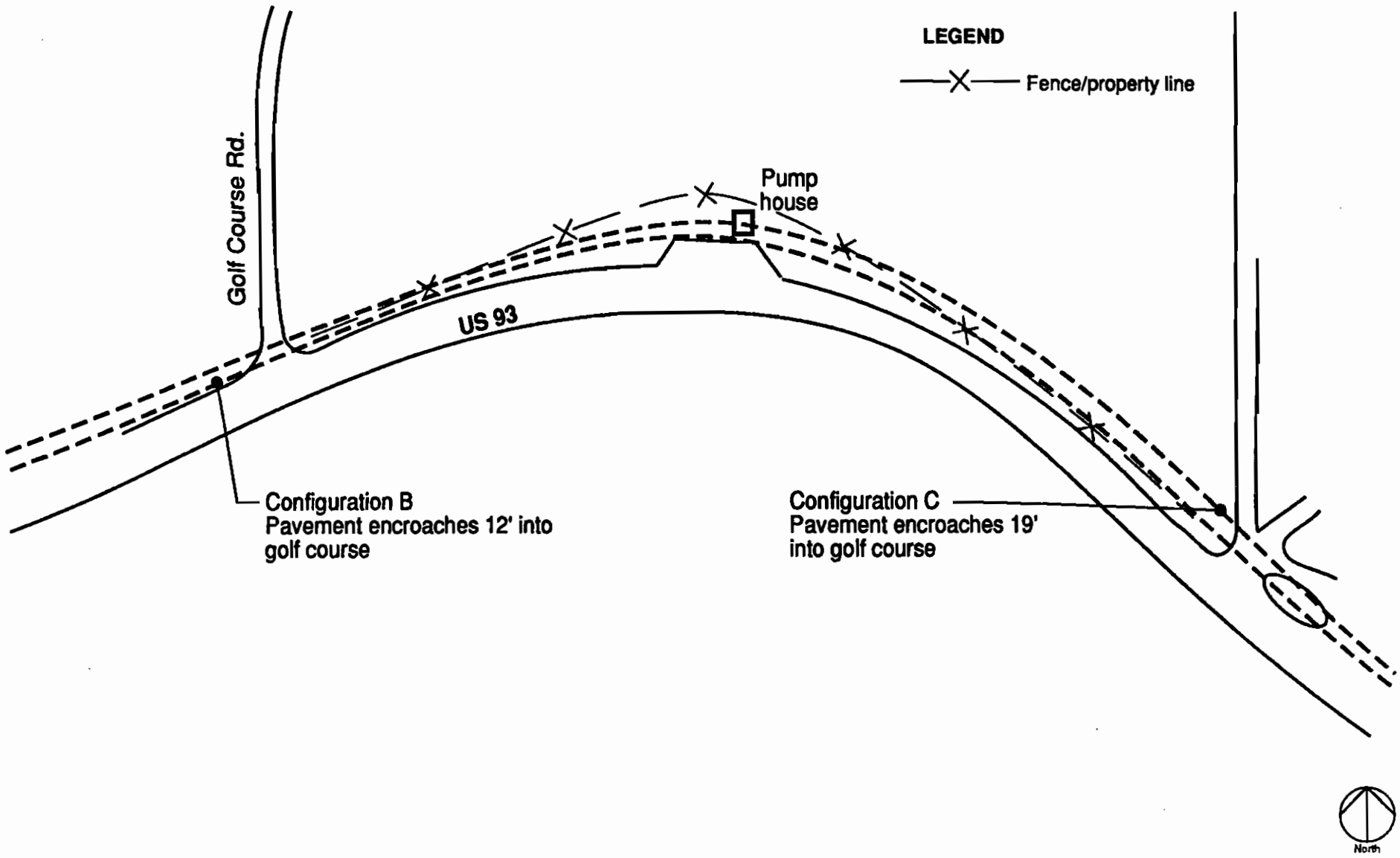

FIGURE 12.3-6
Polson Municipal Golf Course

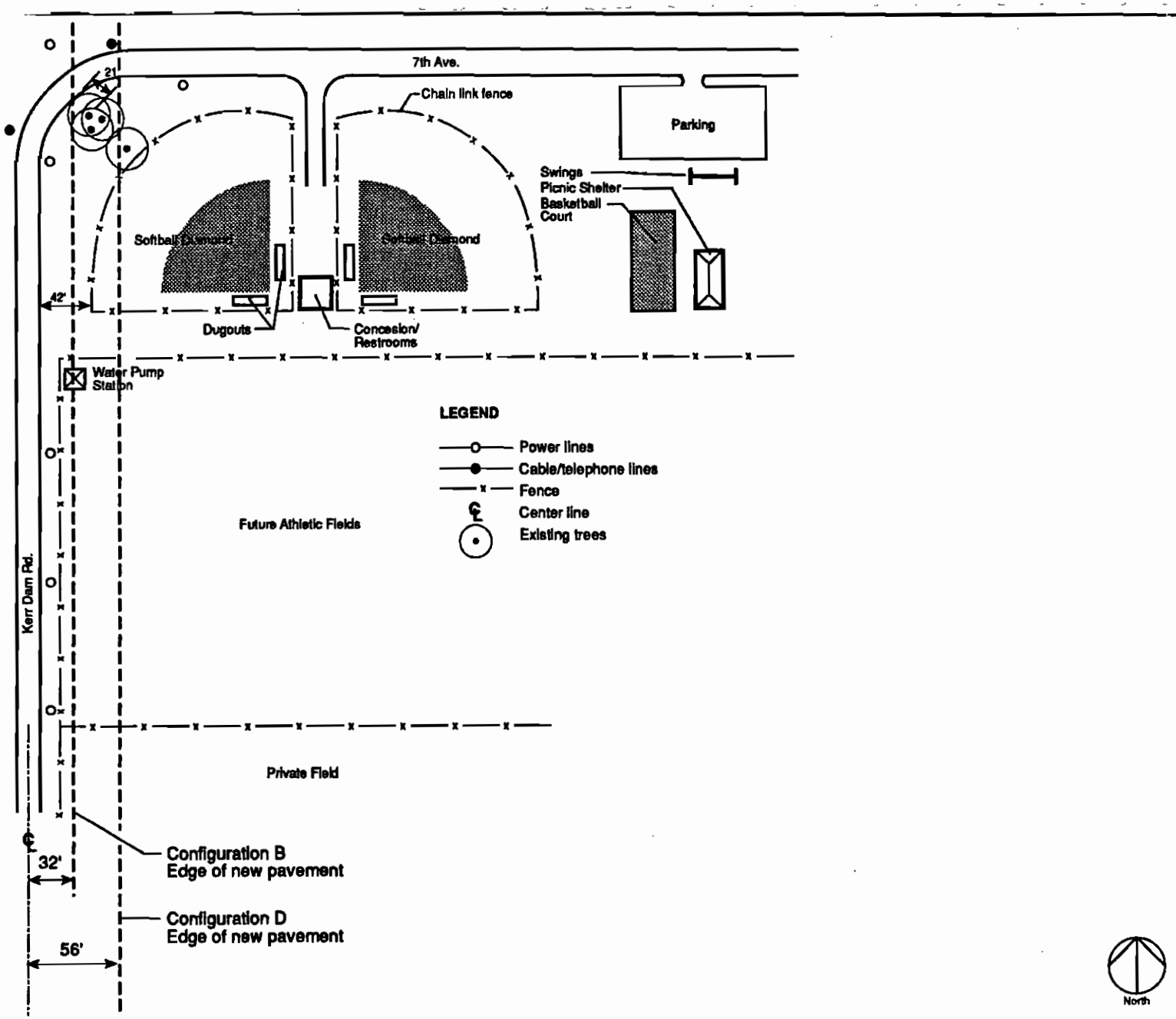

FIGURE 12.3-7
Seventh Avenue Softball Fields

This facility has received LWCF financial assistance and is therefore subject to the provisions of Section 6(f) of the LWCF Act, as amended. Direct use of land from this site will require approval of the U.S. Secretary of the Interior. It also will be necessary to substitute other properties of at least equal fair market value and reasonably equivalent usefulness and location for the recreation lands used.

12.3.2. Historic Properties

A total of 79 historic and prehistoric cultural resource properties have been formally recorded and evaluated during the inventory of the existing highway corridor and the several alternative corridors under consideration.[1] Of these, several properties have been determined eligible for listing in the National Register of Historic Places (NRHP) eligible properties. The following is a list and description of NRHP eligible sites from which direct use of land will be required for the MDT Preferred Alternative and the CSKT Preferred Alternative for the proposed action:

Ravalli School (24LA131)

The Ravalli School (Figure 12.3-8), a one-room facility with Italianate design details, is located adjacent to the east side of the highway within the small community of Ravalli. It is a one story wood frame building with an asphalt-shingled hip roof. Exterior walls are covered with beveled siding, and the roof is covered with asphalt shingles. A square bell tower with a hip roof topped by a flag pole is located on the front of the building. A wooden stoop with wood railing provides access to the front of the building. The building is on a platted lot in Ravalli with an area of approximately 0.66 acres.

Missoula County School District 28 funded the construction of Ravalli School in 1913. For the next nine years the building housed grades one through eight, averaging 31 students per year. When Lake County was formed in 1922, the Ravalli School was closed and students were sent to St. Ignatius for schooling. Between 1923 and 1935 the building was used as a polling place and as an informal social center. The Ravalli Community Club purchased the building from School District 28 in 1935, after which it served as the community center for Ravalli until the late 1960s. The building is now being used as church. Ravalli School has been determined eligible for listing in NRHP under criteria A and C[2].

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

The Northern Pacific branchline between Dixon and Polson consists of the railroad grade and track. This branch line has been determined eligible for listing in NRHP under criterion A. This spur line is still in use on a regular basis and connects Polson with the Montana Raillink mainline through Missoula. It is Polson's only railroad connection. It is important for the timber industry and other industries and businesses in the area.

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[1]Pedestrian inventories have not been completed for the Arlee Alignment 3, Arlee Alignment 4, Ronan Alignment 2 and the Ronan Alignment 3. However drive-through inventories have been completed for all of these alignments, and most potential historical cultural resource properties with standing buildings and structures have been identified. Archaeological sites have not been identified. Preliminary judgments regarding the relative impact of the alternative alignments have been prepared based upon these inventories. Permits for these inventories must be obtained from the Tribal Culture Committees. These permits are granted where they are necessary and where they are for a good cause. Because alignments of the MDT and CSKT preferred alternatives have received complete inventories and no culturally significant sites have been identified, it has been determined that obtaining permits and conducting additional inventories is not necessary and is not justified.

[2]Criterion A includes sites that are associated with events that have made a significant contribution to the broad patterns of our history. Criterion C includes sites that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

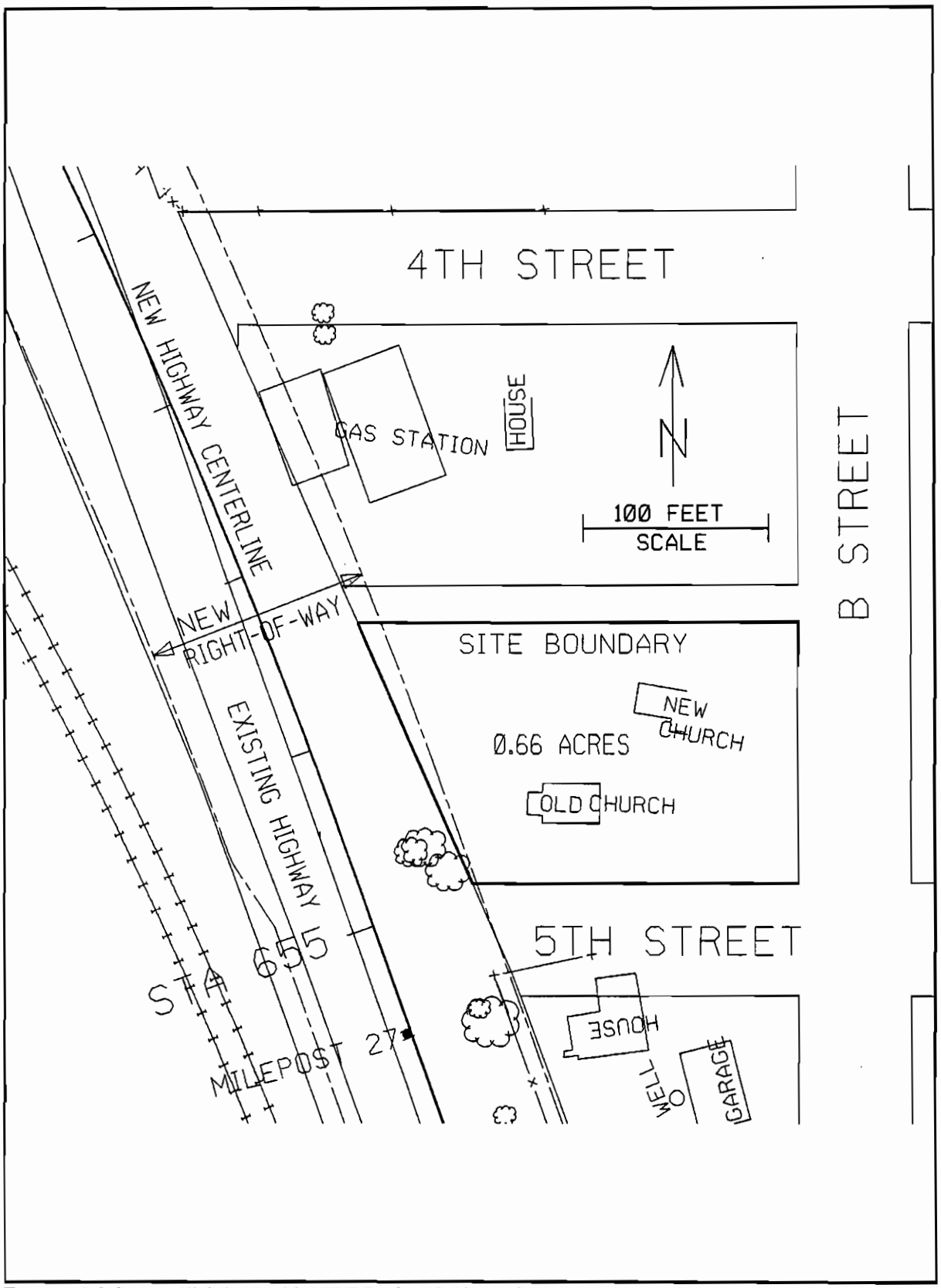

Figure 12.3-8, Ravalli School with MDT Preferred Alternative

12.4. USE OF SECTION 4(f) PROPERTIES

Following paragraphs discuss use of Section 4(f) lands that will be required for each alternative of the proposed action.

No use of land from any Section 4(f) sites will be required with No Action.

Lane Configuration D has not received substantial public or agency support and, in many cases, will cause substantially greater environmental impacts and will require substantially more use of Section 4(f) lands than Lane Configurations A, B or C. It is not part of the CSKT Preferred Alternative and is part of the MDT Preferred Alternative (Section 5.3) only for a short distance (Milepost 10.2 to 10.6) and will impact no Section 4(f) sites. Lane Configuration D is therefore not evaluated further in this document in relation to the use of Section 4(f) lands.

12.4.1. Parks, Recreation Areas and Wildlife and Waterfowl Refuges

Direct use of parks, recreation areas and wildlife and waterfowl refuges required by the preferred alternatives is summarized on Table 12.4-1. Each site is further discussed in following paragraphs.

Arlee Community Park

If Lane Configuration A (the CSKT Preferred Alternative as described in Section 5.4) or Lane Configuration B is constructed on Alignment 1, no direct use of land from this site will be required.

If Lane Configuration C is constructed on Alignment 1 (the MDT Preferred Alternative as described in Section 5.3), a direct use of approximately 0.1 acre of land from this site will be required. Relocation of the bicycle path and the west side of the wooden fence will be required. ~~Relocation of t~~The picnic table and the park bench will not be impacted~~required~~.

Alignments 2, 3 and 4 are not located near this site and will not require direct or constructive use of the land with any of the lane configurations under consideration.

National Bison Range

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 1.5, 3.3 or 4.3 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

The existing informal viewing and parking area adjacent to the north side of US 93 will be removed if Lane Configuration A, B or C is constructed. Removal of the viewing and parking area is required because: 1) it is too close to the existing or future lane configurations and creates several vehicle approaches to the highway that may be unsafe; and 2) it will be necessary to provide space for construction of roadway widening and required improvements to slopes and drainage facilities.

National Bison Range Visitor Center

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 0.1, 0.3 or 0.4 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

Table 12.4-1 Uses of Parks, Recreation Areas and Refuges by the Preferred Alternatives

SITE DESCRIPTION	MILE POST	TOTAL SITE AREA (ACRES)	CSKT PREFERRED ALTERNATIVE		MDT PREFERRED ALTERNATIVE	
			ALIGN-MENT/LANE CONFIG-URATION	DIRECT USE (ACRES)	ALIGN-MENT/LANE CONFIG-URATION	DIRECT USE (ACRES)
Arlee Community Park	17.7	0.5	1/A	0	1/C	0.1
National Bison Range	27.8 - 29.2	18,500	1/A	1.5	1/B	3.3
National Bison Range Visitor Center	29.2	8	1/A	0.1	1/B	0.3
Ninepipe National Wildlife Refuge	40.4 - 40.9	2,000	1/A	0.5	1/B	0.9
Ninepipe Wildlife Management Area	39.6 - 43.1	3,000	1/A	4.8	1/B	10.1
Kicking Horse Waterfowl Production Area	42.2 - 42.8	180	1/A	0.4	1/B	0.9
Duck Haven Waterfowl Production Area	43.1 - 44.1	650	1/A	0.3	1/B	0.8

This table has been revised for the final EIS.
Morrison-Maierle and Carter Burgess, 1994

Ninepipe National Wildlife Refuge

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 0.5, 0.9 or 1.4 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

~~Section 7.10 describes the acreage of wetland that will be impacted on this site by each of the lane configurations.~~

Ninepipe Wildlife Management Area

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 4.8, 10.1 or 13.0 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

~~Section 7.10 describes the acreage of wetland that will be impacted on this site by each of the lane configurations.~~

Kicking Horse Waterfowl Production Area

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 0.4, 0.9 or 1.3 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

~~Section 7.10 describes the acreage of wetland that will be impacted on this site by each of the lane configurations.~~

Duck Haven Waterfowl Production Area

If Lane Configuration A, B or C is constructed on Alignment 1, a direct use of 0.3, 0.8 or 1.4 acres of Section 4(f) land from this site will be required. As indicated in Sections 5.3, 5.4 and 12.2.3, Lane Configuration B is the MDT Preferred Alternative and Lane Configuration A is the CSKT Preferred Alternative in this area.

~~Section 7.10 describes the acreage of wetland that will be impacted on this site by each of the lane configurations.~~

Ronan City Park

No direct or constructive use of land from this site will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative~~, Lane Configuration C on Alignment 1 and preservation of a future highway corridor on Alignment 4. (Sections 5.3 and 12.2.3)~~

No direct or constructive use of land from this site will be required with any of the lane configurations on Alignments 1 or 3.

Construction of the southbound lanes (a one-way, two-lane roadway with widths similar to Lane Configuration A) of Alignment 2 will require a direct use of approximately 0.3 acre of land from this site.

Because no direct or constructive use of Section 4(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

Ronan High School Athletic Field

No direct or constructive use of land from this site will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative~~, Lane Configuration C on Alignment 1 and preservation of a future highway corridor on Alignment 4. (Sections 5.3 and 12.2.3)~~

No direct or constructive use of land from this site will be required with any of the lane configurations on Alignments 1 or 3.

Construction of the southbound lanes (a one-way, two-lane roadway with widths similar to Lane Configuration A) of Alignment 2 will require a direct use of approximately 0.1 acre of land from this site.

Because no direct or constructive use of Section 4(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

Ducharme Park

If Lane Configuration A is constructed on Alignment 1 (the MDT and the CSKT preferred alternatives as described in Sections 5.3, 5.4 and 12.2.3), no direct use of land from this site will be required.

If Lane Configuration B or C is constructed on Alignment 1, a direct use of approximately 0.09 or 0.17 acre of land from this site will be required. Five mature deciduous trees will require removal if Lane Configuration B is constructed and 10 will require removal with Lane Configuration C. A brick planter with coniferous bushes will require removal with either Lane Configuration B or C.

The park would retain its primary current uses including passive recreation and picnicking, but would offer about 25% less space for those users.

Alignments 2 and 3 are not located near this site and will not require direct or constructive use of the land with any of the lane configurations.

Because no direct or constructive use of Section 4(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

Lions Park

If Lane Configuration A is constructed on Alignment 1 (the MDT and the CSKT preferred alternatives as described in Sections 5.3, 5.4 and 12.2.3), no direct use of land from this site will be required.

If Lane Configuration B or C is constructed on Alignment 1, a direct use of approximately 0.07 or 0.11 acre of land from this site will be required. This will effectively abolish the entire vehicle turnout and parking lot because it will give way to highway pavement. The chamber of commerce information booth and two picnic tables will require relocation.

Alignments 2 and 3 are not located near this site and will not require direct or constructive use of the land with any of the lane configurations.

Because no direct or constructive use of Section 4(f) or Section 6(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

Polson Municipal Golf Course

If Lane Configuration A is constructed on Alignment 1 (the MDT and the CSKT preferred alternatives as described in Sections 5.3, 5.4 and 12.2.3), no direct use of land from this site will be required.

If Lane Configuration B or C is constructed on Alignment 1, a direct use of approximately 0.21 or 0.33 acre of land from this site will be required. This use will impact hole #4 and the tee box for hole #5 due to pavement widening on the north side of US 93. The fairway and green for hole #4 will need to be relocated further to the north, resulting in the removal of several mature coniferous trees, and the teebox for hole #5 will need to be moved further to the north. Six or more mature deciduous trees along the Golf Course's southern boundary will also need to be removed to accommodate highway fill and pavement. With the relocations described above, the park will retain its primary current use.

Alignments 2 and 3 are not located near this site and will not require direct or constructive use of the land with any of the lane configurations.

Because no direct or constructive use of Section 4(f) or Section 6(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

Seventh Avenue Softball Fields

No direct or constructive use of land from this site will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative ~~(Lane Configuration A on Alignment 1 and Lane Configuration B, after initial construction of Lane Configuration A, on Alignment 3).~~

No direct or constructive use of land from this site will be required with any of the lane configurations on Alignments 1 or 3.

Construction of Lane Configuration A, B or C on Alignment 2 will require a direct use of approximately 0.20, 0.31 or 0.55 acre of land from this site. Five deciduous trees will need to be removed, a water pump station will need to be relocated, and power lines will need to be relocated. With Lane Configuration B or C, one softball diamond

will need to be relocated. However, there is adequate room to accommodate this relocation on site. Therefore, the site can be expected to remain fully functional after the relocation of the softball diamond is complete.

Because no direct or constructive use of Section 4(f) or Section 6(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative, this site is not evaluated further in this document.

12.4.2. Historic Properties

Ravalli School (24LA131)

Because concrete curb and gutter is planned through Ravalli, ROW requirements are less than in rural areas. The ROW boundary will move only five feet closer to the site with Lane Configuration B, resulting in the direct use of 0.02 acres of land from this site. The ROW boundary will move ten feet closer to the site with Lane Configuration C (the MDT Preferred Alternative in this area) resulting in the direct use of 0.03 acres of land from this site (Figure 12.3-8). Lane Configuration A (the CSKT Preferred Alternative in this area) will not move highway traffic closer to the site while Lane Configurations B or C will place highway traffic approximately 43 or 48 feet closer to the site.

Although the Ravalli School building will not be directly affected by the construction of a new roadway, MDT, with the concurrence of the Montana State Historic Preservation Office (MSHPO), has determined the site will be adversely affected by impacts to its setting if the MDT Preferred Alternative is constructed. The MDT Preferred Alternative will adversely effect the setting of the property by relocating the centerline and the wider roadway closer to the school. As indicated above, the pavement edge will be closer to the property as will the driving lanes, with the MDT Preferred Alternative.

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

It has been determined by MDT and MSHPO that this property will be adversely affected by the MDT Preferred Alternative~~proposed action~~. Approximately 1,800 linear feet of railline will be obliterated with the MDT Preferred Alternative, Lane Configuration B on Alignment 1. To replace the obliterated line, about 1,750 feet of new railline will be constructed about 100 to 150 feet from the existing line. Alignment 3 with Lane Configuration B, also part of the MDT Preferred Alternative, will require a new crossing of the railroad.

12.5. AVOIDANCE ALTERNATIVES

This section identifies and evaluates location and design alternatives which would avoid the use of Section 4(f) land.

12.5.1. Parks, Recreation Areas and Wildlife and Waterfowl Refuges

Arlee Community Park

The MDT Preferred Alternative in the Arlee area is Alignment 1 (existing alignment) with Lane Configuration C (a four-lane highway with a continuous two-way left-turn center median).

As explained in Chapter 5, alignment alternatives in the Arlee area, including Alignments 2, 3, 4 and 5, have been evaluated which will avoid the use of Section 4(f) lands. Construction of the proposed action on these alignments would:

- Make it likely that the acquisition of needed ROW would probably not be approved. Since the proposed action is located almost entirely within the Flathead Indian Reservation, any acquisition of tribal lands for ROW must receive the approval of the Confederated Salish and Kootenai Tribes. The Confederated Salish and Kootenai Tribal Council has expressed opposition to the construction of the highway on any alignment except the existing alignment (Alignment 1) in this area.

- Go against strong public opinion which has been expressed in opposition to the construction of the highway anywhere except on the existing alignment.

- Potentially create impacts to a cultural site with spiritual significance to the Tribes ~~on cultural resource sites.~~

- Place the highway closer to schools ~~(Alignment 3)~~. Alignment 1, the existing alignment, is located approximately 900 feet from the grade school, the middle school and the high school in Arlee. Alignment 1 is separated from the schools by two blocks of businesses and residences. Constructing the roadway on Alignment 3 would place the road within 250 feet of a portion of the schools with no buildings, trees or other items between the roadway and the schools.

- Increase noise levels, if Alignment 3 is constructed, at the schools from the current estimated level of less that 50 dBA with current and projected year 2020 traffic volumes to approximately 61 and 65 dBA with current and projected year 2020 traffic volumes.

- Place high volumes of highway traffic (approximately 13,000 vehicles per day in the year 2020) in areas that currently have none.

- Require the conversion of more land to highway ROW. Alignments 2, 3 and 4 will require the conversion of approximately 29, 37 and 140 acres more land to highway ROW than Alignment 1 at a cost of approximately $150,000, $200,000 and $700,000. The ROW on the existing highway must still remain for highway access.

- Require the filling of more wetlands. Alignments 2, 3 and 4 will fill approximately 0.6, 0.4 and 8.3 acres more wetlands than Alignment 1.

- Impact existing highway-oriented businesses by moving traffic away from them. By diverting highway traffic away from the existing alignment, Arlee Alignments 2 and 3 will reduce total sales in Arlee by 38%, or approximately $26 million, through the year 2015. After 2015, annual sales

in Arlee will be similar for the existing alignment and Alignments 2 and 3. Arlee Alignment 4 will reduce sales in Arlee by 67% through the year 2015. Annual sales with Alignment 4 will continue to be less than Alignment 1 after 2015. (Section 7.5.4)

A minor alignment shift to move the roadway to the west sufficiently to avoid direct use of the land has been considered. This would move the highway closer to existing buildings on the west side of the highway. The gas pumping area and much of the parking lot of one gas station/convenience store on the west side of the highway would be restricted and may not be useable.

Lane Configuration A (the CSKT Preferred Alternative), with or without left-turn bays or a continuous two-way left-turn center median, will not meet the purpose and need because it will not provide adequate capacity to accommodate existing and future traffic volumes and it will not help to substantially improve safety.

Lane Configuration B, without the continuous two-way left-turn center median, will not meet the purpose and need because it will not provide for sufficient safe left-turn opportunities to the many businesses, homes and other properties in Arlee.

National Bison Range and National Bison Range Visitor Center

The MDT Preferred Alternative in this area is Alignment 1 (existing alignment) with Lane Configuration B (a four-lane highway ~~with a four-foot-wide painted center median~~).

Following paragraphs list and discuss alternatives that have been considered which will avoid or reduce the use of Section 4(f) properties at the National Bison Range and at the National Bison Range Visitor Center.

Alignment alternatives that have been considered include Arlee Alignment 5 (Section 5.1.2.2) and the Old Freight Route (Section 5.1.2.5). These alignments would:

- Make it likely that the acquisition of needed ROW would probably not be approved. Since the proposed action is located almost entirely within the Flathead Indian Reservation, any acquisition of tribal lands for ROW must receive the approval of the Confederated Salish and Kootenai Tribes. The Confederated Salish and Kootenai Tribal Council has expressed opposition to the construction of the highway on any alignment except the existing alignment (Alignment 1) in this area.

- Go against strong public opinion which has been expressed in opposition to them.

- Cause substantial environmental impacts related to introducing high volumes of highway traffic in areas that currently have very little vehicle traffic. Related impacts will include noise, safety, visual, air quality, social, wildlife, wetlands and cultural resources.

- Noise levels, currently estimated at or below 47 dBA in areas with no substantial highway traffic, would rise to 72, 69 and 64 dBA within 100, 150 and 300 feet of the centerline of the new highway.

- Field reviews that have been conducted along these alternate alignments indicated that wetland impacts would be approximately equal to impacts if the highway is constructed on its existing alignment.

- Require new crossings of the Jocko River and other streams.

- Construction of a new highway along the Old Freight Route would require 680 acres of new ROW as compared with approximately 140 acres for the same length of Alignment 1, the existing alignment. Construction of a new highway along Arlee Alignment 5 would require 360 acres of new ROW, as compared with approximately 40 acres for the same length of Alignment 1, the existing alignment. The ROW on the existing highway will remain and must still remain for highway access. This additional new ROW would include~~Convert~~ large amounts of existing farmland~~ to highway ROW~~.

- Create two highways through the valley -- existing US 93 would have to remain to at least serve local traffic.

Minor alignment shifts have been considered to avoid direct impacts on Section 4(f) lands in these sites. These shifts would:

- Create greater cuts or fills in the steep terrain which would create related adverse environmental impacts and substantially increase construction costs.

- Create greater impacts to the Visitor Center if shifted one direction and create greater impacts to the Bison Range if shifted the other direction.

Construction of Lane Configuration A (the CSKT Preferred Alternative) will reduce the direct use of Section 4(f) lands at these sites. Lane Configuration A, with or without left-turn bays or a continuous two-way left-turn center median, will not meet the purpose and need because it will not provide adequate capacity to accommodate existing and future traffic volumes and it will not help to substantially improve safety.

Recreation Areas and Wildlife and Waterfowl Refuges

The MDT Preferred Alternative in this area is Alignment 1 (existing alignment) with Lane Configuration B (a four-lane highway~~ with a four foot wide painted center median~~).

Following paragraphs list and discuss alternatives that have been considered and which will avoid or reduce the use of Section 4(f) properties at Ninepipe Refuge, Ninepipe WMA, Kicking Horse WPA and Duck Haven WPA.

Alignment alternatives that have been considered include several variations of an alignment following the Old Freight Route (Section 5.1.2.5). These alignments would:

- Make it likely that the acquisition of needed ROW would probably not be approved. Since the proposed action is located almost entirely within the Flathead Indian Reservation, any acquisition of tribal lands for ROW must receive the approval of the Confederated Salish and Kootenai Tribes. The Confederated Salish and Kootenai Tribal Council has expressed opposition to the construction of the highway on any alignment except the existing alignment (Alignment 1) in this area.

- Go against strong public opinion which has been expressed in opposition to them.

- Cause substantial environmental impacts related to introducing high volumes of highway traffic into areas that currently have very little vehicle traffic. Related impacts will include noise, safety, visual, air quality, social, wildlife, wetlands and cultural resources.

- Noise levels, currently estimated at or below 47 dBA in areas with no substantial highway traffic, would rise to 72, 69 and 64 dBA within 100, 150 and 300 feet of the centerline of the new highway.

- Field reviews that have been conducted along this alignment indicated that wetland impacts would be approximately equal to impacts if the highway is constructed on its existing alignment.

- Convert large amounts of farmland to highway ROW.

- Construction of a new highway along the Old Freight Route would require 680 acres of new ROW as compared with approximately 140 acres for the same length of Alignment 1, the existing alignment. The ROW on the existing highway will remain and must still remain for highway access. This additional new ROW would include~~Convert~~ large amounts of existing farmland~~ to highway ROW~~.

- Create two highways through the valley -- existing US 93 would have to remain to at least serve local traffic.

Minor alignment shifts have been considered to avoid direct impacts on Section 4(f) lands in these sites. These shifts would:

- ~~Create greater cuts or fills in the steep terrain which would create related adverse environmental impacts and substantially increase construction costs.~~

- Require similar use of Section 4(f) lands on the side toward which the alignment is shifted.

- Require the highway be completely reconstructed rather than overlaying the existing pavement and widening.

Construction of Lane Configuration A (the CSKT Preferred Alternative) will reduce the direct use of Section 4(f) lands at these sites. Lane Configuration A, with or without left-turn bays or a continuous two-way left-turn center median, will not meet the purpose and need because it will not provide adequate capacity to accommodate existing and future traffic volumes and it will not help to substantially improve safety.

With any of the proposed lane configurations, nearly vertical retaining walls using gabions or other structures will be used in some areas to eliminate the normal 6:1 or 4:1 safety slopes that would normally be constructed in this area. Areas where these walls will be used include areas where guardrail currently exists and where most of the larger ponds and potholes adjacent to the highway exist. Wherever these walls are used, new guardrail will be required. Use of these walls will eliminate impacts to ponds and potholes in some areas and substantially reduce impacts in other areas.

12.5.2. Historic Properties

Ravalli School (24LA131)

The MDT Preferred Alternative in this area is Alignment 1 (existing alignment) with Lane Configuration C (a four-lane highway with a continuous two-way left turn center median).

Alignment alternatives have been considered in this area but none have been identified that are feasible and prudent. The highway is bordered on the west by a railroad, west of the railroad is the Jocko River and west of the river the steep slopes of the canyon walls begin. The Community of Ravalli lies immediately adjacent to the east side of the highway and immediately east of Ravalli the steep slopes of the east side of the canyon begin. Other than the existing alignment, there are no practical locations to place the highway in this area.

Minor adjustments to Alignment 1 to move it away from the site are not appropriate because they will require substantial relocation of the Northern Pacific Railroad Grade (24LA199) which is also eligible for NRHP.

Construction of Lane Configuration A (the CSKT Preferred Alternative) or Lane Configuration B will not adequately accommodate existing and projected traffic volumes, improve safety and provide for the substantial number of left turns from US 93 required in the community.

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

The MDT Preferred Alternative in this area is Alignment 1 (existing alignment) with Lane Configuration B (a four-lane highway ~~with a four-foot-wide painted center median~~). Alignment 3 will also be constructed with Lane Configuration B, after initial construction of Lane Configuration A, to serve as an alternate route through the Polson area.

As explained in Chapter 5, other alignments have been considered but, because traffic must still be maintained on Alignment 1, the existing alignment, they do not reduce the required use of Section 4(f) lands.

Minor adjustments to Alignment 1 to move the roadway away from the railroad have been considered but are not considered feasible and prudent because:

- Relocation of at least one residence will be required,
- Construction of substantially larger fill slopes will be required with related additional environmental impacts and construction costs, and
- Substantial additional impacts to ~~direct use of land from~~ the Polson Z Canal will occur ~~(24LA90) will be required~~.

Construction of Lane Configuration A on Alignment 1 (the CSKT Preferred Alternative) will reduce the direct use of Section 4(f) lands at these sites. Lane Configuration A, with or without left-turn bays or a continuous two-way left-turn center median, will not meet the purpose and need because it will not provide adequate capacity to accommodate existing and future traffic volumes, and it will not help to substantially improve safety. Construction of Lane Configuration C will require more use of Section 4(f) lands and is not required to adequately and safely accommodate existing and future traffic demand in this area.

12.6. MEASURES TO MINIMIZE HARM

This section identifies and discusses possible measures to minimize the impacts on Section 4(f) properties.

12.6.1. Parks, Recreation Areas and Wildlife and Waterfowl Refuges

Arlee Community Park

With the MDT Preferred Alternative at the Arlee community park, the wooden fence will be relocated or will be replaced with a new similar wooden fence. The pedestrian/bicycle path will also be replaced with a new similar path. Bushes, lawn and other vegetation will be replaced.

National Bison Range and National Bison Range Visitor Center

The informal viewing and parking area that has developed, on highway ROW and on National Bison Range land across US 93 from the Visitor Center, will be removed. This will eliminate the various unsafe approaches to US 93 and remove vehicular and most pedestrian traffic from the area. Traffic will be strongly encouraged to use the Visitor Center parking lot and facilities instead. The Visitor Center is better equipped to accommodate this use with restrooms and regular maintenance including cleanup and garbage removal.

A protected left-turn bay will be provided at the entrance to the Visitor Center to safely and efficiently accommodate left turns into the site. This will further encourage visitors to use the site rather than leaving the highway at random locations.

Recreation Areas and Wildlife and Waterfowl Refuges

In Ninepipe Refuge, Ninepipe WMA, Kicking Horse WPA and Duck Haven WPA, wetlands that are filled or otherwise removed by construction of the proposed action will be replaced by wetlands constructed to provide similar functions and equal or greater value.

Construction of these replacement wetlands will require the acquisition of land which can serve to replace the Section 4(f) lands used by the proposed action. Much of the acquired land will be adjacent to the existing Refuge and the WPAs but farther away from the highway. Wildlife biologists representing agencies with jurisdiction or special expertise related to the proposed action have indicated that relocation of these wetlands and related wildlife habitat will have a beneficial effect because it will move wildlife farther away from the highway -- road kills and other negative impacts will be substantially reduced.

12.6.2. Historic Properties

Ravalli School (24LA131)

MDT and MSHPO have agreed to a plan that mitigates the adverse effects of the proposed action on the Ravalli School[3]. The plan includes three parts: 1) planting of a vegetative buffer to screen the school from the roadway 2) preparation and submittal of an NRHP nomination form for the Ravalli School and 3) installation of an NRHP marker for the building. The plan has not yet been implemented.

[3]Federal Highway Administration, Montana State Historic Preservation Office, Advisory Council on Historic Preservation, Montana Department of Transportation, Memorandum of Agreement, Dirty Corner - Ravalli Highway Project (Evaro - Polson EIS), Missoula/Lake Counties, Montana, F 5-2(34)17, Control No. 1296, July 1994. A copy of this document is included at the end of this Section 4(f) Evaluation.

With this plan, MDT, with the concurrence of MSHPO, has determined there will be no adverse effect to this property as a result of the proposed action. With this plan, the site will remain eligible for the NRHP.

Northern Pacific Railroad, Dixon-Polson Branchline (24LA89)

MDT and MSHPO have agreed to a plan that mitigates the adverse effects of the proposed action on the railroad[4]. The memorandum of agreement (MOA) includes provisions for MDT to contribute funds to the Museum of the Rockies in Bozeman, Montana for the purchase of the Ronald V. Nixon Photograph Collection. This collection documents the history of the Northern Pacific, Great Northern, Union Pacific and the Chicago, Milwaukee, St. Paul & Pacific railroads in Montana from 1910 to 1980. The plan has not yet been implemented.

With this plan, MDT, with the concurrence of MSHPO, has determined there will be no adverse effect to this property as a result of the proposed action. With this plan, the site will remain eligible for the NRHP.

[4]Federal Highway Administration, Montana State Historic Preservation Office, Advisory Council on Historic Preservation, Montana Department of Transportation, Memorandum of Agreement, Ronan - Polson Highway Project (Evaro - Polson EIS), Lake County, Montana, F 5-2(33)48, Control No. 1060, March 1994. A copy of this document is included at the end of this Section 4(f) Evaluation.

12.7. COORDINATION

Correspondence and information has been sent to agencies with jurisdiction for all Section 4(f) Parks, Recreation Areas and Wildlife and Waterfowl Refuges discussed in this document. The correspondence listed potential properties with Section 4(f) significance, made preliminary estimates of the direct use and constructive use required, discussed mitigation measures and asked for additional information, suggestions and comments. The correspondence was sent to the following agencies:

Lake County	Arlee Community Park
US Fish and Wildlife Service	National Bison Range Ninepipe National Wildlife Refuge Kicking Horse Waterfowl Production Area Duck Haven Waterfowl Production Area
Confederated Salish and Kootenai Tribes	National Bison Range Visitor Center Ninepipe National Wildlife Refuge
Montana Department of Fish, Wildlife and Parks	Ninepipe Wildlife Management Area Lions Park[5] Polson Municipal Golf Course[4] Seventh Avenue Softball Fields[4]
City of Ronan	Ronan City Park
Ronan School District No. 30	Ronan High School Athletic Field
City of Polson	Ducharme Park Polson Municipal Golf Course Seventh Avenue Softball Field
Montana Department of Transportation	Lions Park

MSHPO has been consulted and has concurred with the determination of eligibility and the determination of effect, based on the MDT Preferred Alternative, for each of the historic properties. MSHPO has concurred with mitigation plans proposed at historic sites that may be adversely affected. (Copies of MOAs for these historic properties are included at the end of this Section 4(f) Evaluation.)

The United States Department of the Interior has concurred, based on the MDT Preferred Alternative, that there is no feasible and prudent alternative to the use of the parks, recreation areas, wildlife refuges and historic properties listed in this Section 4(f) Evaluation[6].

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[5]As indicated in Section 12.3.1., these sites have been developed using LWCF financial assistance and are therefore subject to the provisions of Section 6(f) of the LWCF Act. The Montana Department of Fish, Wildlife and Parks (MDFWP) has been delegated the responsibility, by the U.S. Department of Interior, to handle LWCF matters in Montana. For that reason, coordination with MDFWP has been and will continue to be conducted for these sites. As indicated in Section 12.4.1., no use of Section 6(f) lands will be required with the MDT Preferred Alternative or the CSKT Preferred Alternative.

[6]Taylor, Willie R., Director, Office of Environmental Policy and Compliance, Office of the Secretary, United States Department of the Interior, letter dated 08 June 1995.

12.8. CONCLUSION

Based upon the above considerations, there is no feasible and prudent alternative to the use of the land from the Section 4(f) properties. The proposed action includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use.

MEMORANDUM OF AGREEMENT FOR THE RAVALLI SCHOOL

SECTION 4(f) EVALUATION

Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

RECEIVED
AUG 16 1994
ENVIRONMENTAL BUREAU

MASTER FILE
COPY

cc: G. Stockstad
K. Nelrick

August 1, 1994

Dale W. Paulson
Environmental Coordinator
Federal Highway Administration
301 South Park Street
Room 448
Helena, MT 59626

REF: Memorandum of Agreement regarding the Dirty Corner to Ravalli Segment of the U.S. 93 reconstruction (F 5-1(9)6).

Dear Mr. Paulson:

The enclosed Memorandum of Agreement regarding the effects of the Dirty Corner to Ravalli highway reconstruction on the Ravalli School (24LA131) has been accepted by the Council. This action constitutes the comments of the Council required by Section 106 of the National Historic Preservation Act and the Council's regulations. Please send copies of the signed Agreement to the Montana State Historic Preservation Officer and your Federal Preservation Officer.

The Council appreciates your cooperation in reaching a satisfactory resolution of this matter.

Sincerely,

Claudia Nissley
Director, Western Office
of Review

Enclosure

MEMORANDUM OF AGREEMENT FOR THE NORTHERN PACIFIC RAILROAD, DIXON-POLSON BRANCHLINE

SECTION 4(f) EVALUATION

MEMORANDUM OF AGREEMENT
DIRTY CORNER - RAVALLI HIGHWAY PROJECT
(EVARO - POLSON EIS)
MISSOULA/LAKE COUNTIES, MONTANA
F 5-2(34)17
Control No. 1296

WHEREAS the Federal Highway Administration (FHWA) proposes to assist the Montana Department of Transportation (MDT) in funding the Dirty Corner - Ravalli highway project;

WHEREAS FHWA has determined that the undertaking will have an effect on the Ravalli School (24LA131), a property eligible for inclusion on the National Register of Historic Places, and has consulted with the Montana State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and its implementing regulations, "Protection of Historic Properties" (36 CFR 800);

WHEREAS MDT participated in the consultation and has been invited to concur in this Memorandum of Agreement; and

NOW, THEREFORE; FHWA, the Montana SHPO, and Council agree that the undertaking will implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

FHWA shall ensure that the following measures are carried out:

1) The MDT shall prepare and submit a nomination for the listing of the Ravalli School (24LA131) on the National Register of Historic Places. The nomination will be prepared with the cooperation of the current owners of the property, the Ravalli Community Church.

2) The MDT will purchase and install a National Register of Historic Places marker describing the historic and architectural significance of the Ravalli School when the property is listed.

3) The MDT will install a vegetative buffer between the Ravalli School and U.S. Highway 93 in the vicinity of the property when the reconstruction project is completed. The type of vegetation will be determined by the MDT Agronomist and will be consistent with plant species known to be present in the area.

4) If a dispute arises regarding the implementation of this Agreement, FHWA shall consult with the objecting party to resolve the dispute. If any consulting party determines that the dispute cannot be resolved, FHWA shall request the further comments of the Advisory Council on Historic Preservation pursuant to the Council's regulations.

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its terms evidences that FHWA has afforded the Council an opportunity to comment on the Dirty Corner - Ravalli highway reconstruction project and its affects

to historic properties, and that FHWA has taken into account the effect of the Undertaking on historic properties.

Federal Highway Administration — (Date) 6-20-94

Montana State Historic Preservation Office — (Date) 6-10-94

Concurring Parties:

Advisory Council on Historic Preservation — (Date) 7/22/94

Montana Department of Transportation — (Date) 6/22/94

Jon Axline

MEMORANDUM OF AGREEMENT
RONAN - POLSON HIGHWAY PROJECT
(EVARO - POLSON EIS)
LAKE COUNTY, MONTANA
F 5-2(33)48
Control No. 1060

MASTER
FILE
COPY

WHEREAS the Federal Highway Administration (FHWA) proposes to assist the Montana Department of Transportation (MDT) in funding the Ronan - Polson highway project.

WHEREAS FHWA has determined that the undertaking will have an effect on the Northern Pacific Branch Line (24LA89), a property eligible for inclusion on the National Register of Historic Places, and has consulted with the Montana State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and its implementing regulations, "Protection of Historic Properties" (36 CFR 800);

WHEREAS MDT participated in the consultation and has been invited to concur in this Memorandum of Agreement; and

NOW, THEREFORE; FHWA, the Montana SHPO, and Council agree that the undertaking will be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

FHWA shall ensure that the following measures are carried out:

1) The MDT will donate $2,500.00 to the Museum of the Rockies in Bozeman, Montana for use toward the purchase of the Ronald V. Nixon Photograph Collection, a collection significant for its documentation of the history of railroad transportation in Montana.

2) The MDT will provide the SHPO with a copy of the donation agreement between the MDT and the Museum of the Rockies in which the conditions for use of the donated funds are detailed.

3) If a dispute arises regarding the implementation of this Agreement, FHWA shall consult with the objecting party to resolve the dispute. If any consulting party determines that the dispute cannot be resolved, FHWA shall request the further comments of the Advisory Council on Historic Preservation pursuant t the Council's regulations.

EXECUTION OF THIS MEMORANDUM OF AGREEMENT and implementation of its terms evidences that FHWA has afforded the Council an opportunity to comment on the Ronan - Polson highway reconstruction project and its affects to historic properties, and that FHWA has taken into account the effect of the Undertaking on historic properties.

Federal Highway Administration — (Date) 2-25-94

Montana State Historic Preservation Office — (Date) 2-14-94

Advisory Council on Historic Preservation — (Date) 3-9-94

Concurring Party:

Montana Department of Transportation — (Date) 2/8/94

APPENDICES

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APPENDIX A. AERIAL PHOTOGRAPHS AND MAPS

Aerial Photos

Table 6.10-1, Wetland & Riparian Area Characteristics and Estimated Impact Acreages -- Page 1

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
A1	Em (Ditch)	S	GW, R		<1	SF	IV	0.94/--	0.90/--	0.94/--	0.94/--	0.94/--	
A2	Em (Ditch)	S	R		<1	SF	IV	0.14/--	0.06/--	0.14/--	0.15/--	0.20/--	
A3	Em, Sh	SF	CF, GW		<1	WH, SF	III	tr/0.05	tr/0.04	tr/0.05	0.01/0.05	0.17/0.07	
A27	Em	SF	OBF, R		>10	EC, SF, WH	II	1.63/--	1.33/--	1.63/--	1.80/--	2.24/--	
R1	Fo, Sh (NWR)	TF	GW, R		<1	WH, FC	III	--/0.01	--/0.00	--/0.01	--/0.02	--/0.06	
A4	Em (Ditch)	S	R		<1	SF	IV	0.00/--	0.00/--	0.00/--	0.01/--	0.08/--	
R2	Fo, Sh (NWR)	TF	GW, R		1-5	WH, GDR	III	--/0.50	--/0.28	--/0.50	--/0.63	--/0.94	
A5	Em, Sh	SF	CF		<1	WH, SF	III	0.00/--	0.00/--	0.00/--	0.00/--	0.01/--	
A6	Em (Ditch)	S	R		<1	SF	IV	0.16/0.16	0.1/0.09	0.16/0.16	0.16/0.16	0.16/0.16	
R3	Fo, Sh (NWR)	TF	GW, R		1-5	WH, GDR	III	--/0.30	--/0.17	--/0.30	--/0.38	--/0.58	
A7	Em (Ditch)	S	R		<1	SF	IV	0.25/--	0.10/--	0.25/--	0.25/--	0.25/--	
A28	Fo, Sh	SF	CR, OBF		1-5	WH, FC	III	0.04/--	0.03/--	0.04/--	0.05/--	0.07/--	
A8	Em, Sh	PF, S	OBF	Finley Creek	>10	FCS, EC, GDR, SF, TES, FC, WH, SS	I	0.61/0.20	0.53/0.17	0.61/0.20	0.65/0.22	0.77/0.26	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 2

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[3] Functions	MDT[4] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
A9	Fo, Sh, Em	SF, S	CF, GW		>10	FCS, FC, EC, NC, TES, WH, GDR, U	II	0.11/0.06	0.10/0.05	0.11/0.06	0.12/0.07	0.14/0.08	
A10	Fo, Sh, Em	SF, S	GW, CF		>10	FC, SF, EC, GDR, FCS, TES, WH, SS	I	01.03/0.11	0.49/0.05	0.79/0.09	0.86/0.10	1.03/0.11	
A11	Em (Ditch)	S	R		<1	SF	IV	0.08/--	tr/--	0.06/--	0.08/--	0.08/--	
A29	Fo, Sh, Em	SF	GW, CF		>10	FCS, FC, EC, NC, TES, WH, GDR, U	II	0.07/tr	0.00/0.00	0.01/0.00	0.03/tr	0.07/tr	
A12	Fo, Sh, Em	SF, S	GW, CF		>10	FCS, FC, EC, NC, U, TES, WH, GDR	II	0.27/0.03	0.13/0.01	0.17/0.02	0.21/0.02	0.27/0.03	
A13	Fo, Sh, Em	SF, S	GW, CF		>10	FCS, FC, EC, NC, U, TES, WH, GDR	II	0.03/tr	tr/--	0.01/tr	0.02/tr	0.03/tr	
A14	Fo, Sh, Em	SF, S	GW, CF		>10	FCS, FC, EC, NC, U, TES, WH, GDR	II	0.02/tr	tr/--	0.02/tr	0.04/tr	0.12/0.01	
A30	Em (Ditch)	S	R		<1	SF	IV	0.06/--	0.01/--	0.06/--	0.08/--	0.09/--	
A15	Em (Ditch)	SF, S	R		<1	SF	IV	0.18/--	0.02/--	0.18/--	0.23/--	0.26/--	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 3

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
A16	Em (Ditch)	SF, S	R		<1	SF	IV	0.12/--	0.01/--	0.12/--	0.12/--	0.12/--	
A17	Em (Ditch)	SF, S	R		<1	SF	IV	0.10/--	0.09/--	0.10/--	0.10/--	0.10/--	
A18	Fo, Sh, Em	SF, S	GW, CF		>10	FC, EC, NC, FCS, TES, WH	II	0.13/--	0.10/--	0.13/--	0.15/--	0.19/--	
A19	Fo, Sh, Em	PF, S	OBF	Schley Creek	>10	SF, EC, GDR, FCS, WH, FC	I	0.10/0.01	0.06/0.01	0.10/0.01	0.11/0.02	0.17/0.02	
A31	Sh, Em (Ditch)	SF, S	R, GW		<1	SF	III	0.12/--	0.05/--	0.12/--	0.14/--	0.20/--	
A20	Fo, Sh, Em	PF, S	OBF	EF Finley Ck	>10	SF, EC, GDR, FCS, WH, FC	I	0.15/0.10	0.11/0.08	0.15/0.10	0.17/0.10	0.20/0.13	
R4	Fo, Sh, (NWR)	TF	OBF		<1	WH, FC	III	--/0.02	--/0.01	--/0.02	--/0.02	--/0.02	
A21	Fo, Sh, Em	PF, S	GW, CF, CD		>10	FC, EC, NC, FCS, WH, FC	II	0.37/0.10	0.27/0.07	0.37/0.10	0.43/0.10	0.54/0.13	
R5	Sh, (NWR)	TF	R		<1	SF	IV	--/0.19	--/0.15	--/0.19	--/0.15	--/0.15	
A22	Em, (Ditch)	SF, S	CF, R		<1	SF	IV	0.14/0.03	0.06/0.01	0.14/0.03	0.14/0.03	0.14/0.03	
R13	Fo, Sh (NWR)	TF	R		<1	WH, FC	III	--/0.10	--/0.05	--/0.10	--/0.12	--/0.21	
A23	Em, Sh (Ditch)	SF, S	CF, R		1-5	SF, FC	III	0.28/0.07	0.18/0.05	0.28/0.07	0.38/0.09	0.48/0.12	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 4

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
A33	Fo, Em, OW (Ex)	PF, S	CF		<1	WH, FC	III	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
R6	Sh (NWR)	TF	R		<1	SF	IV	--/0.07	--/0.06	--/0.07	--/0.08	--/0.10	
A34	Em, Sh (Ditch)	SF, S	CF, R		1-5	SF, FC	III	0.13/0.50	0.09/0.38	0.13/0.50	0.14/0.57	0.19/0.74	
A24	Em (Ditch)	SF, S	R		<1	SF	IV	0.10/--	0.05/--	0.10/--	0.10/--	0.10/--	
A35	Em, Sh (Ditch)	SF, S	CF, R		1-5	SF, FC	III	0.50/0.12	0.30/0.07	0.50/0.12	0.61/0.15	0.89/0.22	
A36	Sh (Ditch)	SF, S	R		<1	SF	IV	0.03/--	0.02/--	0.03/--	0.04/--	0.05/--	
A37	Sh, Fo (Ditch)	SF, S	CD		<1	SF	III	0.01/0.03	tr/0.01	0.01/0.03	0.01/0.03	0.01/0.04	
A38	Em, Sh (Ditch)	SF, S	CF, R		1-5	SF, FC	III	0.00/0.00	0.00/0.00	0.00/0.00	tr/0.02	0.05/0.22	
A25	Em, Sh (Ditch)	SF, S	CF, R		1-5	SF, FC	III	0.10/0.01	0.04/tr	0.10/0.01	0.14/0.01	0.23/0.02	
R7	Fo, Sh (NWR)	TF	GW		<1	WH, FC	III	--/0.01	--/0.01	--/0.01	--/0.02	--/0.03	
A39	Fo, Em, OW (Ex)	SF, S	GW, CF		1-5	NC, GDR, WH, FC, SF	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	Arlee 1, 2, 3
R14	Fo, Sh, (NWR)	TF	CD		<1	WH	III	--/	--/0.00	--/0.00	--/0.00	--/0.00	Arlee 1, 2, 3
A26	Em (Ditch)	SF, S	R		<1	SF	IV	0.03/--	0.02/--	0.03/--	0.03/--	0.03/--	Arlee 1, 2, 3

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 5

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
B1	Em (Ditch)	SF, S	R		<1	SF	IV	0.05/--	tr/--	0.05/--	0.06/--	0.06/--	Arlee 1, 2, 3
R8	Fo, Sh (NWR)	TF	GW		<1	WH, FC	III	--/0.04	--/0.00	--/0.02	--/0.04	--/0.13	Arlee 1
R9	Fo, Sh (NWR)	TF	GW		>10	FCS, TES, WH, FC, EC	II	--/0.29	--/0.27	--/0.27	--/0.20	--/0.40	Arlee1, 3
C1	Em, OW (Ex)	PF, S	GW		1-5	GDR	III	1.01/0.21	.069/0.08	0.95/0.11	1.01/.021	1.48/.015	Arlee 1, 3
								NA	0.59/0.06	0.70/0.08	0.77/0.09	0.94/0.10	Arlee 2
C2	Fo, Sh	PF, SF, S	OBF, GW	Jocko River	>10	TES, SS, EC, GDR, U, REP, FC, WH, FCS	I	1.25/0.14	1.04/0.02	1.16/0.13	1.25/0.14	1.51/0.17	Arlee 1, 2, 3
C3	Em (Ditch)	SF, S	R		<1	SF	IV	0.12/--	0.08/--	0.12/--	0.15/--	1.58/--	Arlee 1, 2, 3
C4	Em, OW (Ex)	PF	GW (Sp)		1-5	REP, GDR	III	0.02/--	0.00/--	0.02/--	0.04/--	0.12/--	Arlee 1, 2, 3
								NA	0.25/--	0.30/--	0.33/--	0.40/--	Arlee 4
A2-1	Em	SF, S	CF, OBF		1-5	SF, EC	III	NA	0.83/--	0.83/--	0.83/--	0.83/-	Arlee 2
A2-2	Em, OW (Ex)	SPF	GW		<1	SF	IV	NA	0.02/--	0.02/--	0.02/--	0.02/--	Arlee 2
A3-1	Sh (Ditch)	TF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 3
A3-2	Em	SF, S	CF		1-5	SF, EC, WH	III	NA	0.28/--	0.33/--	0.36/--	0.44/--	Arlee 3

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
A3-3	Sh (Ditch)	TF	CD		<1	SF	IV	NA	0.02/--	0.02/--	0.02/--	0.02/--	Arlee 3
A4-1	Em (Ditch)	TF	CF		1-5	SF, EC	III	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-2	Em (Ditch)	SF	CD		<1	SF, EC	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-3	Em (Ditch)	SF	CD		<1	SF, EC	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-4	Fo, Sh	TF, S	CD		6-10	WH, FC, FCS	II	NA	0.88/0.22	1.06/0.26	1.16/0.29	1.41/0.35	Arlee 4
A4-5	Fo, Sh	PF, SF, S	OBF, GW	Jocko River	>10	TES, SS, EC, GDR, U, .REP, WH, FC, FCS	I	NA	1.76/0.44	2.11/0.53	2.32/0.58	2.82/0.70	Arlee 4
A4-6	Em, OW	SF, S	R		1-5	WH	III	NA	0.55/--	0.66/--	0.73/--	0.88/--	Arlee 4
A4-7	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-8	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-9	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Arlee 4
A4-10	Em	PF, TF, S	OBF, GW	Spring Creek	>10	FC, FCS, GDR, WH	II	NA	4.40/--	5.30/--	5.80/--	7.05/--	Arlee 4
A4-11	Em	SF, S	GW		6-10	WH, FCS	II	NA	0.21/--	0.25/--	0.27/--	0.33/--	Arlee 4
C5	Em (Ditch)	SF	R		<1	SF	IV	0.00/--	0.00/--	0.00/--	0.00/--	0.06/--	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 7

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
C6	Em (Ditch)	SF	R		<1	SF	IV	0.10/--	0.06/--	0.10/--	0.13/--	0.15/--	
C7	Em	SF, S	GW		1-5	FCS, SF	III	0.23/---	0.17/--	0.23/--	0.28/--	0.43/--	
C8	Em, Sh (Ditch)	SF	R, GW		1-5	SF	III	1.11/--	0.70/--	1.11/--	1.33/--	1.88/--	
C9	Em (Ditch)	SF	R		<1	SF	IV	0.74/--	0.40/--	0.74/--	0.82/--	0.91/--	
C10	Sh	PF, S	GW, OBF	Spring Creek	>10	FCS, TES, SS, SF, GDR, WH, FC, EC	II	0.40/0.10	0.22/0.06	0.40/0.10	0.50/0.12	0.60/0.15	
C16	Em, Sh (Ditch)	SF, S	R		<1	SF	III	0.31/--	0.19/--	0.31/--	0.39/--	0.59/--	
C11	Em (Ditch)	SF, S	R, GW		<1	SF	IV	0.02/--	0.01/--	0.02/--	0.03/--	0.04/--	
C12	Em (Ditch)	SF, S	R		<1	SF	IV	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
C13	Em (Ditch)	SF, S	R		<1	SF	IV	0.08/--	0.01/--	0.08/--	0.12/--	0.24/--	
C14	Em	S	GW (Sp)		<1	GDR, SF	III	0.02/--	0.01/--	0.02/--	0.03/--	0.03/--	
C15	Em (Ditch)	SF, S	R		<1	SF	IV	0.06/--	0.02/--	0.06/--	0.09/--	0.17/--	
D1	Em (Ditch)	SF, S	R		<1	SF	IV	0.07/--	0.06/--	0.07/--	0.07/--	0.09/--	
D2	Fo, Sh	SF, S	OBF, GW		1-5	GDR, FC, SF	III	1.20/0.14	1.00/0.10	1.20/0.14	1.32/0.14	1.55/0.17	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 8

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
D3	Em (Ditch)	SF, S	R, GW		<1	SF	IV	0.00/--	0.00/--	0.00/--	tr/--	0.08/--	
D4/D5	Fo, Sh	SF, S	GW, OBF		1-5	GDR, FC, SF	III	0.72/0.08	0.66/0.07	0.72/0.08	0.76/0.08	0.82/0.09	
R10	Sh (NWR)	TF	R		<1	SF	IV	--/0.00	--/0.00	--/0.00	--/0.00	--/0.00	
R11	Sh (NWR)	TF	R		<1	SF	IV	--/0.00	--/0.00	--/0.00	--/0.00	--/0.00	
F7	Fo, Sh	S, SF	R, GW		1-5	GDR, SF	III	0.25/0.24	0.24/0.24	0.25/0.24	0.25/0.24	0.25/0.24	
F1	Fo, Sh	S, SF	R, GW (Sp)		1-5	SF, GDR	III	0.74/0.19	0.56/0.14	0.74/0.19	0.80/0.21	0.91/0.23	
F2	Em (Ditch)	SF, S	R		<1	SF	IV	0.00/--	0.00/--	0.09/--	0.10/--	0.10/--	
F3	Em, Sh	SF, S	GW, OBF		1-5	SF, EC, NC	III	0.15/--	0.13/--	0.15/--	0.16/--	0.17/--	
F4	Em, Sh	SF, S	GW, OBF		1-5	SF, EC, NC	III	0.33/--	0.28/--	0.33/--	0.34/--	0.40/--	
F5	Em, Sh	SF, S	GW, OBF		1-5	SF, EC, NC	III	0.11/--	0.08/--	0.11/--	0.12/--	0.14/--	
F6	Em (Ditch)	S	CD		<1	SF	IV	0.00/--	0.00/--	0.00/--	0.00/--	tr/--	
G1	Em (Ditch)	SF, S	R		<1	SF	IV	0.13/--	0.04/--	0.13/--	0.13/--	0.13/--	
G2	Em	S	R, GW		<1	SF	IV	0.07/--	0.06/--	0.07/--	0.08/--	0.10/--	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 9

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
G3	Em, Sh	SF, S	GW, OBF	Sabine Creek	>10	FCS, SF, GDR, WH, FC, EC	II	0.89/0.16	0.47/0.08	0.89/0.16	0.99/0.17	1.19/0.21	
R12	Fo, Sh (NWR)	TF	GW		<1	WH, FC	III	--/0.00	--/0.00	--/0.00	--/0.00	--/0.00	
G9	Em (Ditch)	SF, S	R		<1	SF	IV	tr/--	tr/--	tr/--	tr/--	tr/--	
G4	Em (Ditch)	SF, S	R		<1	SF	IV	0.00/0.00	0.00/0.00	0.00/0.00	0.06/0.05	0.10/0.10	
G5	Fo, Sh, Em	SF, S	GW, OBF	Mission Ck	>10	TES, SF, EC, GDR, WH, FC, FCS	I	1.27/2.97	0.27/0.62	1.27/2.97	1.46/3.40	1.91/4.47	
G6	Em (Ditch)	SF, S	CF		<1	SF	IV	1.00/--	0.77/--	1.00/--	1.13/--	1.59/--	
G7	Em (Ditch)	SF, S	R		<1	SF	IV	0.36/--	0.22/--	0.36/--	0.44/--	0.76/--	
G8	Em (Ditch)	SF, S	R, CF		<1	SF	IV	0.38/--	0.20/--	0.38/--	0.45/--	0.62/--	
H1	Em, Sh	SF, S	GW, OBF		6-10	FCS, SF, WH, FC, EC	II	1.57/0.03	1.31/0.03	1.57/0.03	1.67/0.04	1.95/0.04	
H2	Em	SF, S	GW, OBF		1-5	SF	III	3.08/--	2.22/--	3.08/--	3.55/--	4.48/--	
H3	Em	SF, S	GW, OBF		1-5	SF	III	0.65/--	0.42/--	0.57/--	0.65/--	0.79/--	
H4	Em	SF, S	R		1-5	SF	III	0.06/--	0.05/--	0.06/--	0.07/--	0.07/--	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 10

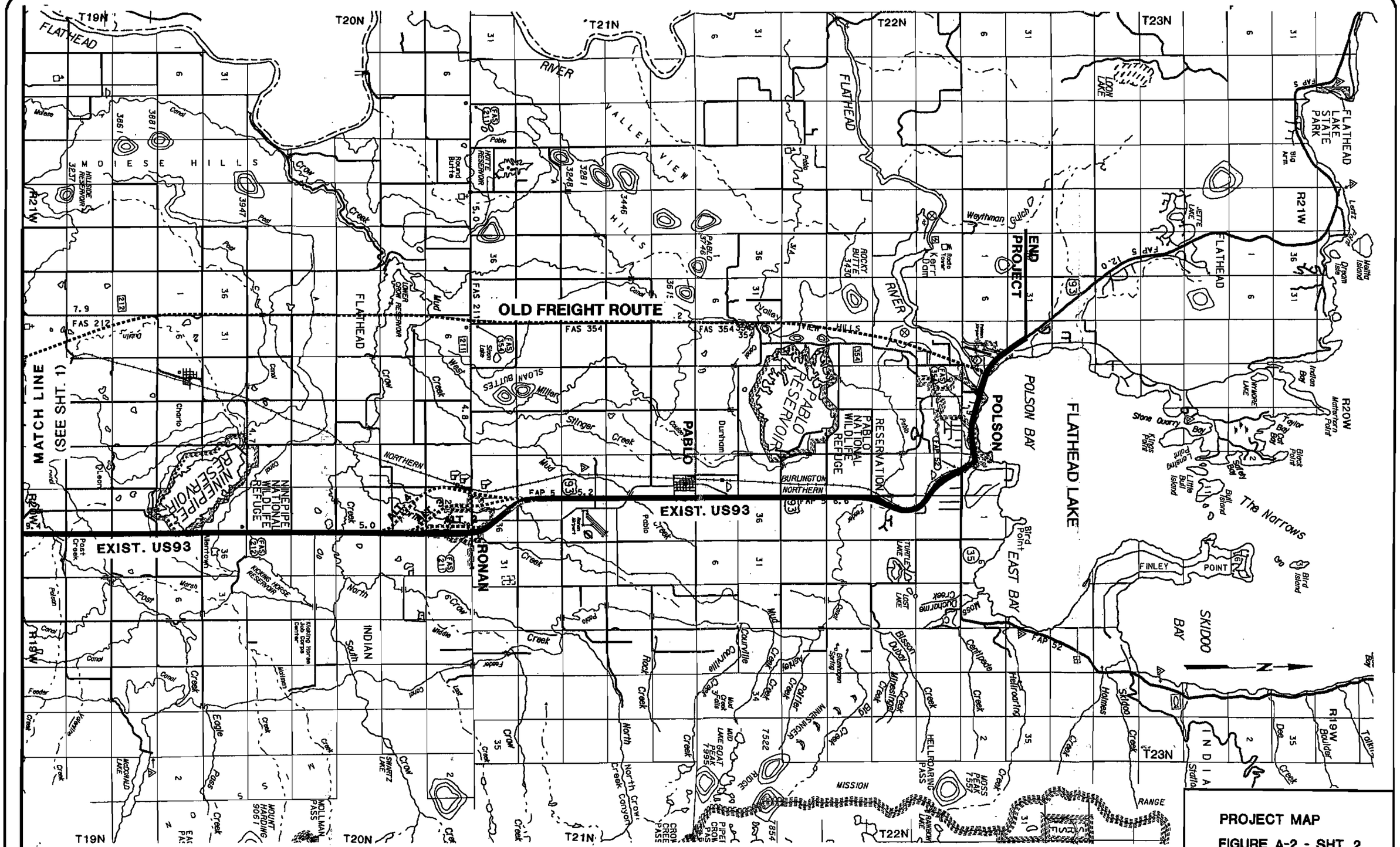
Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
H5	Em	SF, S	GW, OBF		1-5	SF	III	0.11/--	0.09/--	0.11/--	0.12/--	0.15/--	
H6	Em	SF, S	GW, OBF		1-5	SF	III	0.15/--	0.05/--	0.15/--	0.19/--	0.25/--	
H7	Em	SF, S	GW, OBF		1-5	SF	III	0.26/--	0.10/--	0.26/--	0.31/--	0.41/--	
H8	Em (Ditch)	SF, S	CD		<1	SF	IV	0.04/--	0.06/--	0.04/--	0.15/--	0.46/--	
H9	Em	SF, S	GW, OBF		1-5	SF	III	0.44/--	0.29/--	0.44/--	0.61/--	0.77/--	
H10	Em (Ditch)	SF, S	R		<1	SF	IV	tr/--	0.00/--	tr/--	0.02/--	0.18/--	
H11	Em, Sh	SF, S	GW, OBF		1-5	SF	III	0.50/--	0.30/--	0.50/--	0.57/--	0.74/--	
H12	Em (Ditch)	SF, S	R		<1	SF	IV	0.43/--	0.19/--	0.43/--	0.47/--	0.56/--	
H13	Em, Sh	SF, S	GW, OBF		1-5	SF	III	0.48/--	0.28/--	0.42/--	0.48/--	0.63/--	
H14	Em	SF, S	GW(S), OBF		1-5	NC, GDR	III	0.42/--	0.23/--	0.40/--	0.42/--	0.43/--	
H15	Fo, Sh, Em	SF, S	GW, OBF	Post Creek	>10	TES, SF, EC, GDR, REP, WH, FC, FCS	I	1.29/0.07	0.45/0.01	1.00/0.05	1.29/0.07	1.86/0.09	
H16	Em, Sh	SF, S	GW(S)		1-5	FC, SF, GDR	III	0.09/--	0.03/--	0.09/--	0.12/--	0.20/--	

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 11

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
H17	Em (Ditch)	SF, S	R, GW		<1	SF	IV	0.93/--	0.75/--	0.93/--	0.99/--	1.09/--	
H41	Em (Ditch)	SF, S	CD		<1	SF	IV	0.03/--	0.01/--	0.03/--	0.05/--	0.09/--	
H18	Em (Ditch)	SF, S	R		<1	SF	IV	0.20/--	0.12/--	0.20/--	0.22/--	0.29/--	
$H20_B$	Em (Ditch)	SF, S	GW, CD		<1	SF	IV	0.28/--	0.15/--	0.28/--	0.35/--	0.50/--	
H19	Em (Ditch)	SF, S	CD		<1	SF	IV	0.01/--	0.00/--	0.01/--	0.02/--	0.05/--	
$H20_A$	Em (Ditch)	SF, S	R		<1	SF	IV	0.17/--	0.09/--	0.17/--	0.17/--	0.17/--	
H21	Em	SF	GW, OBF		1-5	SF	IV	0.06/--	0.02/--	0.06/--	0.13/--	0.28/--	
H22	Em (Ditch)	SF, S	R, GW		<1	SF	IV	1.31/--	0.56/--	1.31/--	1.41/--	1.48/--	
H23	Em (Ditch)	SF, S	R, GW		<1	SF	IV	0.46/--	0.19/--	0.46/--	0.51/--	0.67/--	
H24	Em, OW	SF, S	R		1-5	EC, WH, U,	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
H25	Em, OW	SPF, S	R		6-10	EC, FCS, U, WH	II	0.24/--	0.07/--	0.24/--	0.41/--	0.79/--	
H26	Em, OW	SPF, S	R, GW		6-10	EC, FCS, U, WH	II	0.01/--	0.00/--	0.01/--	0.02/--	0.05/--	
H27	Em, OW	SPF, S	R		6-10	EC, FCS, U, WH	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	

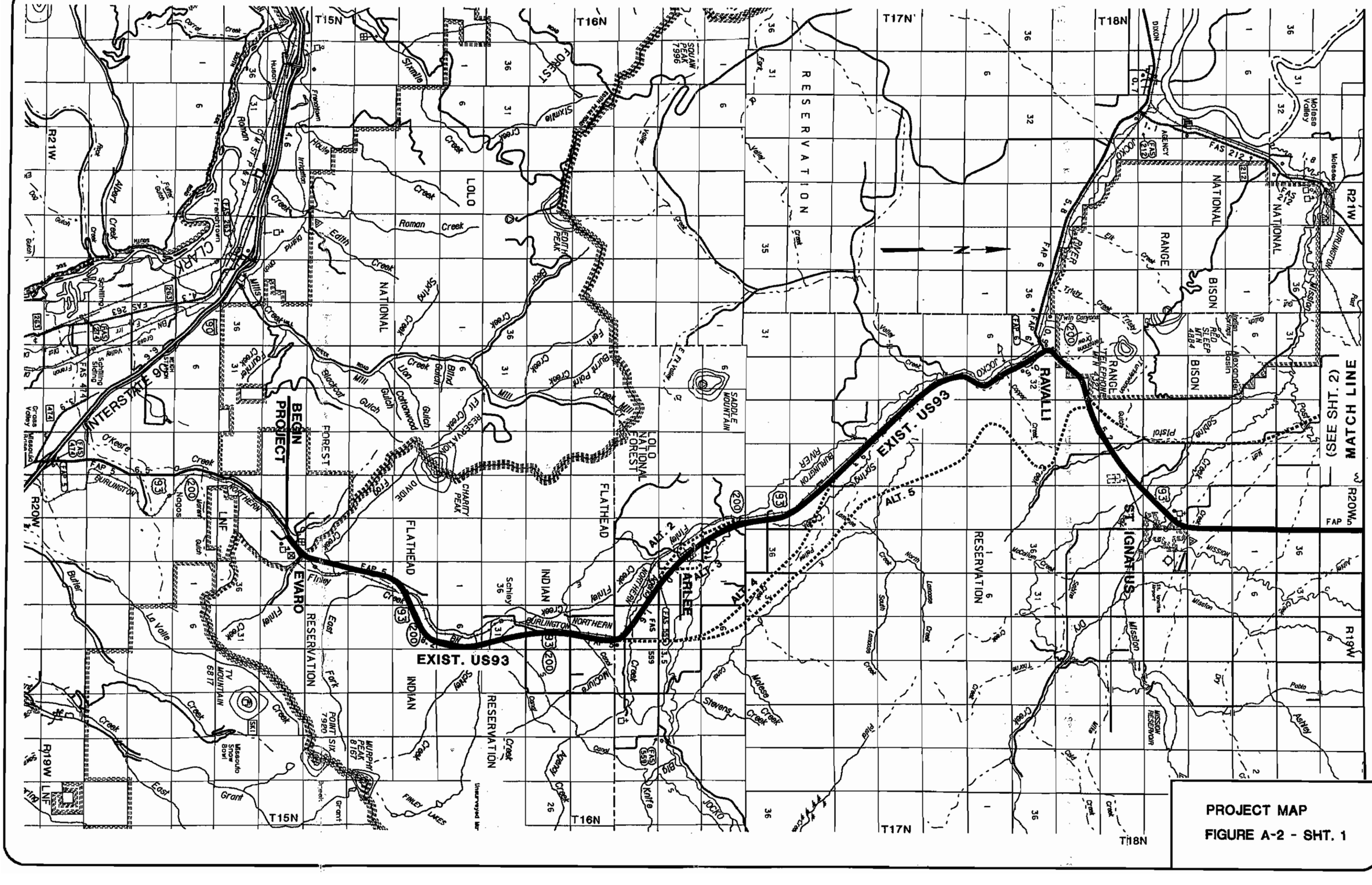
Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 12

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
H28	Em, OW	SPF, S	R		6-10	EC, FC, U, WH	II	tr/--	0.00/--	tr/--	0.02/--	0.09/--	
H29	Em, OW	SPF, S	R, GW		>10	FCS, SS, EC, U, WH, TES, REP	I	0.05/--	0.00/--	0.05/--	0.21/--	0.80/--	
H30	Em, OW	SPF, G	R, GW		>10	FCS, SS, EC, U, WH, TES, REP	I	0.01/--	0.00/--	0.01/--	0.08/--	0.49/--	
H31	Em OW	SPF, S	R, GW		1-5	FCS, EC, U, WH, TES, REP	II	0.02/--	0.00/--	0.02/--	0.03/--	0.07/--	
H32	Em, OW	SPF, S	R, GW		6-10	FCS, EC, U, WH, TES, REP	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
H33	Em, OW, Sh	SPF, S	R		6-10	FCS, EC, U, WH, TES, REP	II	0.59/--	0.26/--	0.59/--	0.74/--	1.04/--	
H34	Em, OW	SPF, S	R		6-10	FCS, EC, U, WH, TES, REP	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
H35	Em, Sh, OW	SPF, S	R		6-10	FCS, EC, U, WH, TES, REP	II	0.28/0.01	0.12/0.01	0.28/0.01	0.37/0.02	0.59/0.03	
H36	Em, OW	PF, S	R, GW(S)		6-10	FCS, EC, U, WH, TES, REP	II	0.03/--	0.00/--	0.03/--	0.16/--	0.49/--	
H37	Em, OW	PF, S	R, GW(S)		6-10	FCS, EC, U, WH, GDR, TES, REP	II	0.04/--	0.00/--	0.04/--	0.17/--	0.50/--	



PROJECT MAP

FIGURE A-2 - SHT. 2


T15N
T16N
T17N
T18N
R21W
R20W
R19W
BEGIN PROJECT
INTERSTATE 90
EXIST. US93
ALT. 2
ALT. 3
ALT. 4
ALT. 5
EVARO
ARLEE
RAVALLI
ST. IGNATIUS
FLATHEAD
INDIAN RESERVATION
RESERVATION
LOLO NATIONAL FOREST
BISON RANGE
NATIONAL
LNF
MATCH LINE (SEE SHT. 2)
PROJECT MAP
FIGURE A-2 - SHT. 1

APPENDIX F: AIR QUALITY REPORTS

I. Air Quality Conformity Analysis

II. Air Quality Dispersion Analysis

F.6.7 Affected Environment
F.7.7 Environmental Consequences

I. Air Quality Conformity Analysis

U.S. Department
of Transportation
**Federal Highway
Administration**

Montana Division
301 South Park Street, Room 448
Drawer 10056
Helena, Montana 59626-0056

January 31, 1996

Patricia Saindon, Administrator, Transportation Planning Bureau
Montana Department of Transportation
2701 Prospect Ave., P.O. Box 201001
Helena, MT 59620-1001

Subject: Polson and Ronan Conformity Determination

Dear Patricia:

In accordance with the Clean Air Act Amendments of 1990, a conformity finding of programs in a non-attainment area is required of the U.S. Department of Transportation. Based on our evaluation of the State's finding of conformity and related documentation, in coordination with the Environmental Protection Agency (EPA), we have determined that the Polson and Ronan, Montana rural non-attainment areas have met the requirements of the conformity regulations dated November 24, 1993. A finding of conformity is hereby made with respect to the analysis contained in your November 24, 1995 memorandum.

This conformity determination is in effect until such time as a new determination is required either by new regulatory requirements, major revision of the network assumptions, or a Tribal Implementation Plan (TIP) revision.

Sincerely,

Louis F. Mraz, Jr.
FTA Regional Administrator

Hank D. Honeywell
FHWA Division Administrator

File #: 510.11

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Marc Racicot, Governor

November 24, 1995

David C. Miller, Planning & Research Engineer
Federal Highway Administration
301 South Park, Drawer 10056
Helena, MT 59626-0056

Subject: Polson and Ronan Regional Air Quality Analysis

Section 176 of the Clean Air Act requires transportation plans, programs, and projects in designated air quality nonattainment areas to conform to the applicable implementation plan's purpose of eliminating or reducing the severity and number of violations of national ambient air quality standards and achieving attainment of such standards.

Detailed regulations for assessing plan, program, and project conformity appear in Parts 51 and 93 of 40 CFR (Code of Federal Regulations). Requirements vary depending on the type of pollutant, the status of the area's implementation plan, the seriousness of the air quality problem, the availability of analysis tools, and the scope and nature of planned projects. In all cases, the regulations require a regional analysis of the cumulative effects of major transportation projects in each designated nonattainment area.

In urbanized nonattainment areas, the responsibility for conformity determinations rests with metropolitan planning organizations (MPOs) and sponsors of major transportation projects. In isolated rural nonattainment areas without MPOs, the responsibility for conformity determinations defaults to State departments of transportation. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) must ultimately approve all conformity determinations.

This letter represents the required MDT regional analysis and resulting conformity determination for the Polson and Ronan, Montana PM-10 nonattainment areas.

Background

Polson and Ronan are classified as moderate nonattainment areas for particulate matter less than 10 microns in

diameter (PM-10). Official nonattainment area boundaries are shown in Attachment A and are coincident with the municipal boundaries of the two cities. Official 1990 Census population for Polson and Ronan was 3,283 and 1,547, respectively.

For conformity purposes, the two areas are required to meet 'Interim Period' requirements for areas that haven't submitted an air quality implementation plan that establishes control strategies and emissions budgets. Federal regulations require regional analyses in these areas to demonstrate that estimated emissions are either less than emissions in a baseline year or that a 'build' or 'action' scenario including planned regionally-significant non-exempt projects will contribute to reductions in emissions when compared to a 'no-build' or 'baseline' scenario. The regional analyses for Polson and Ronan make the latter comparison.

Federal regulations also require a project-level hot-spot analysis for projects in PM-10 nonattainment areas. However, this requirement does not apply until EPA releases guidance on how to perform this analysis.

Analysis

The following separate regional analyses for Polson and Ronan share the following characteristics:

- Unlike the other two isolated rural nonattainment areas (Kalispell and Whitefish) that MDT has previously completed regional analyses for, sophisticated travel forecasting models aren't available or feasible for Polson and Ronan. Traffic estimates and assumptions are therefore based on forecasts developed for the "Evaro-Polson Draft EIS". These forecasts indicate similar future traffic levels on US 93 in Ronan for all proposed actions. Reductions in traffic due to implementation of transportation demand management measures under consideration are difficult to estimate but are expected to be minimal given travel and employment characteristics of the two areas.

- Based on a review of MDT's long-range construction plans and discussions with Polson and Ronan officials, the only regionally-significant, non-exempt projects in the two areas during the analysis period are those described in the "Evaro-Polson Draft EIS" as the

Preferred Alternative. These US 93 projects are therefore the only difference between the Action and Baseline Scenarios in both areas. Actual project termini and construction dates for the various segments will be determined based on future funding availability.

Polson:

The Preferred Alternative described in the "Evaro-Polson Draft EIS" includes a 2-lane bypass around Polson and relatively minor changes to US 93 within Polson. The planned bypass would be located entirely outside of Polson and would therefore divert a substantial number of trucks and other through traffic from the nonattainment area. Any quantitative or qualitative comparison of the Action and Baseline Scenarios must therefore inevitably conclude the Action Scenario would result in a reduction in transportation-related emissions in the nonattainment area.

The diversion of just 1,000 vehicles per day, for example, would reduce daily PM-10 emissions in Polson by approximately 160 pounds.

Ronan:

The Preferred Alternative described in the "Evaro-Polson Draft EIS" would widen US 93 from 3 lanes to 5 lanes through Ronan. In the process, existing curbs, gutters and paved shoulders and approaches would be replaced. The Preferred Alternative would extend these features one-half mile to the south from Garfield Street to the south city limits. This would substantially reduce carryon or background emissions caused by vehicles tracking road dust from adjacent unpaved surfaces onto the highway.

Previous regional analyses and conformity determinations in Kalispell and Whitefish have estimated a conservative 60% reduction in background emissions attributable to similar design features based on information provided by the Department of Health and Environmental Sciences (DHES). Using the same reduction factor for Ronan, the Action Scenario would result in a net reduction of 103.7 pounds per day in PM-10 emissions compared to the Baseline Scenario in 2020* based on the following calculations:

$$17,073 \times .5 = 8,536.5 \times .02025 \times .60 = 103.7 \text{ lbs.}$$

Where:
17,073 = Estimated 2020 average daily traffic (Table 7.7-3)

.5 = One half mile segment

8,536.5 = Estimated vehicle miles traveled (VMT)

.02025 = Carryon or background arterial emission factor (DHES, Kalispell Regional Analysis)

.60 = Adjustment to reflect partial elimination of carryon or background emissions

* 2020 was used as the only analysis year because it's the DEIS design year and is also the first quinquennial year following estimated completion of all US 93 projects.

Note: The necessary written MDT commitment to include these design features in the final design of the project is attached as Attachment B.

This analysis doesn't quantify regional VMT or PM-10 emissions. However, identical project-level traffic forecasts for the two scenarios and the lack of other regionally significant projects during the analysis period justify the conclusion that the only difference between the the two scenarios at both the regional and project levels would be the reduction in emissions quantified above.

Conclusion

This regional analysis has shown that, in both Polson and Ronan, the Action Scenario will result in a reduction in emissions compared to the Baseline Scenario and therefore fulfills the requirements for conformity determinations for included projects.

In accordance with the requirements of 40 CFR, we ask for your concurrence in this determination and assistance in obtaining any necessary FHWA and FTA approvals.

Please call me at 444-3143 or Dick Turner at 444-7289 if you have any questions.

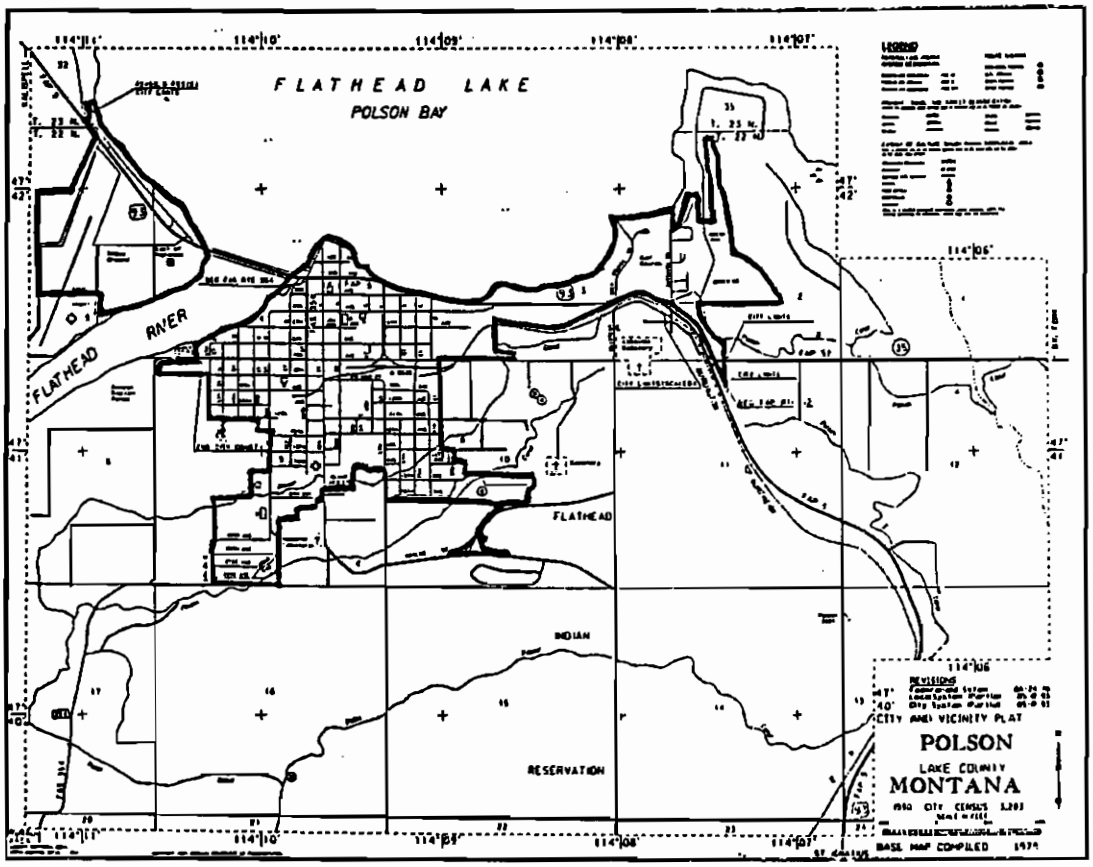
Patricia Saindon

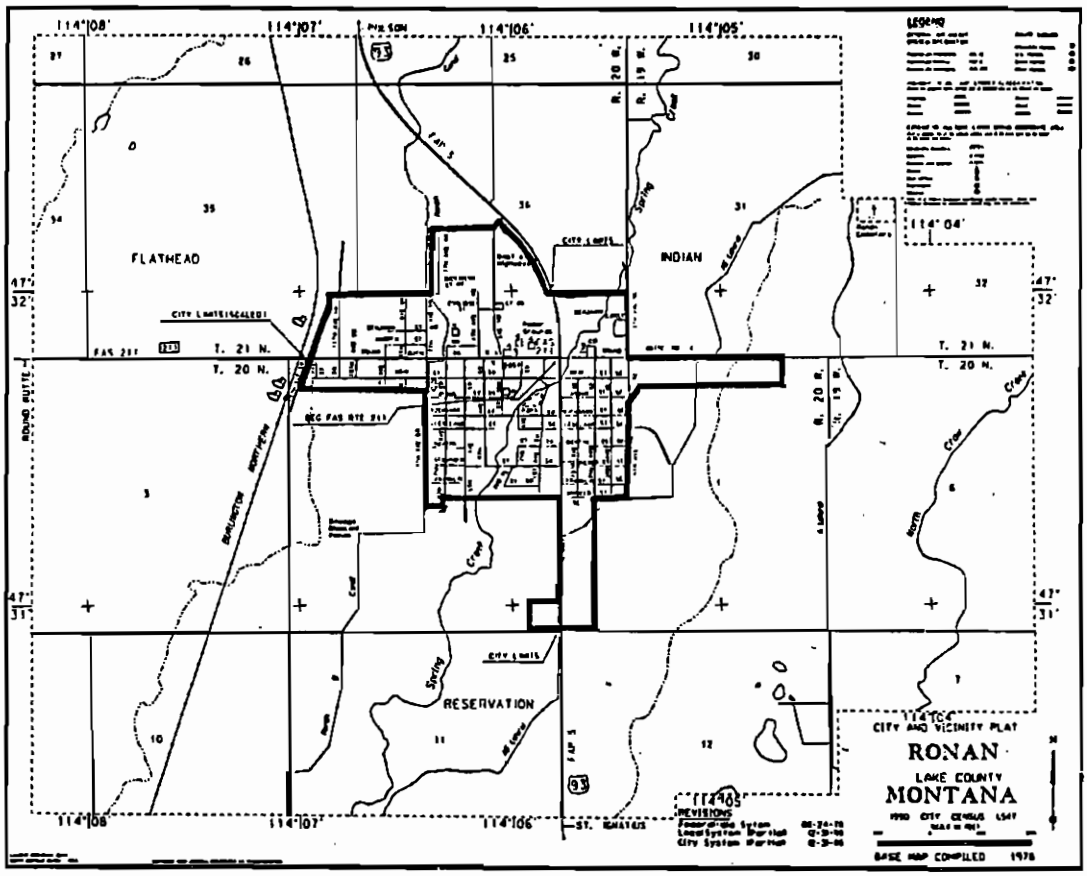
Patricia Saindon, Administrator
Transportation Planning Division

Attachments

cc: Gary Gilmore, Engineering Division
Lewis McLeod, Confederated Salish & Kootenai Tribes
Ken Augustson, Confederated Salish & Kootenai Tribes
Dick Turner, Special Studies Section
John Craig, Multimodal Planning Bureau
Joel Marshik, Environmental Services Unit
Jim Weaver, Missoula District
Brad Peterson, Morrison & Maierle

Attachment A





Attachment B
Ronan Regional Air Quality Analysis
Commitment to Design Features

In accordance with Section 51.458 of 40 CFR, Part 51, the Montana Department of Transportation (MDT) commits to the following project design features assumed in the Ronan Regional Air Quality Analysis. These commitments apply to US 93 from the intersection with Garfield Street to the south city limits. These commitments will be implemented as part of US 93 improvements described in more detail in the "Evaro-Polson Draft EIS."

1) Gravel and dirt shoulders will be surfaced.

2) Curbs and gutters will be added.

3) Gravel and dirt approaches will be consolidated wherever possible and surfaced within the US 93 right-of-way.

4) The project will provide new surfacing throughout.

These commitments will be re-evaluated if a new regional analysis is necessary due to future changes, such as Montana Highway Commission selection of a significantly different design alternative following completion of the EIS process.

Patricia Saindon
Signature

11-21-95
Date

Admin. Planning Div.
Title

DT:G:TP:15.mb

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 17

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
P3	Em (Ditch)	SF, S	R		<1	SF	IV	NA	0.04/--	0.14/--	0.14/--	0.14/--	Polson 2
P4	Em	SF	R		<1	SF	IV	NA	0.27/--	1.02/--	1.18/--	1.57/--	Polson 2
P5	Em	SF	R, GW		<1	SF	IV	NA	0.06/--	0.22/--	0.32/--	0.55/--	Polson 2
P6	Em (Ditch)	SF, S	R, CD		<1	SF	IV	0.04/--	0.03/--	0.04/--	0.05/--	0.08/--	Polson 3
P7	Em	SF	CF		>10	SS, WH, EC, REP, TES, FCS, FC	I	0.05/--	0.05/--	0.05/--	0.05/--	0.05/--	Polson 3
Flathead River				Flathead River				0.00/--	0.00/--	0.12/--	0.12/--	0.12/--	Polson 1
								NA	0.23/--	0.23/--	0.23/--	0.23/--	Polson 2
								0.18/--	0.18/--	0.18/--	0.18/--	0.18/--	Polson 3

[1] MDT Classification
- Em - Emergent
- Fo - Forested
- OW - Open Water
- Sh - Shrub
- (Ex) - Excavated
- (Ditch) - Roadside or irrigation ditch
- (NWR) - Non-Wetland riparian area

Hydrologic Source
- CD - Canal Discharge
- CF - Channel flow
- GW - Groundwater
- GW(S) - Probable spring
- OBF - Over-bank flow
- R - Runoff/precipitation

[2] Hydrologic Type (Cowardin et.al., 1979)
- PF - Permanently flooded
- SPF - Semi-permanently flooded
- SF - Seasonally flooded
- S - Saturated
- TF - Temporarily flooded

[5] MDT Overall Rating - (as determined using MDT Wetland site evaluation forms)
- I - Exceptional
- II - High
- III - Moderate
- IV -Low

[4] Prominent Functions (as determined using MDT wetland site evaluation forms. Functions rating as "high" or "exceptional" for each wetland are indicated on this table as "Prominent Functions")
- EC - Erosion Control
- FC - Flood control & storage
- FCS - Food chain support
- GDR - Groundwater discharge/recharge
- HD - Habitat diversity
- NC - Nutrient Cycling
- REP - Recreation/Education potential
- SF - Sediment filtration[3]
- SS - Habitat for sensitive species
- TES - Habitat for threatened & endangered species
- U - Uniqueness
- WH - Fish & Wildlife habitat

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
R4-11	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Ronan 4
R4-12	Em, OW	SPF, S	R, GW		6-10	WH, NC, SF	II	NA	0.69/--	0.83/--	0.90/--	1.10./--	Ronan 4
R4-13	Em, OW	SPF, S	R, GW		6-10	WH, NC, SF	II	NA	0.55/--	0.66/--	0.73/--	0.88/--	Ronan 4
R4-14	Em, OW	SPF, S	R, GW		6-10	WH, NC, SF	II	NA	0.07/--	0.08/--	0.09/--	0.11/--	Ronan 4
K2	Em	SF, S	GW, OBF		6-10	FCS, WH, SF, EC	II	0.16/--	0.01/--	0.16/--	0.29/--	0.58/--	
K3	Em	SF, S	R, GW		6-10	FCS, WH, SF, EC	II	0.60/--	0.36/--	0.60/--	0.74/--	1.05/--	
K4	Em (Ditch)	SF, S	R, GW		<1	SF	IV	0.41/--	0.14/--	0.41/--	0.56/--	0.62/--	
L1	Em, Sh	SF, S	GW, OBF		>10	FCS, TES, GDR, U, FC, WH, EC	I	0.67/.029	0.34/0.14	0.67/0.29	0.75/0.32	0.95/0.41	
L2	Em (Ditch)	SF, S	R		<1	SF	IV	0.36/0.04	0.09/0.01	0.36/0.04	0.37/0.04	0.37/0.04	
N1	Em (Ditch)	SF, S	CD		<1	SF	IV	0.06/--	0.01/--	0.05/--	0.06/--	0.22/--	Poison 1
N2	Em, Sh (Ditch)	SF, S	R, GW		<1	SF	III	0.09/--	0.10/--	0.08/--	0.09/--	0.12/--	Poison 1
O1	Em (Ditch)	SF, S	CD		<1	SF	IV	0.00/--	0.00/--	tr/--	0.01/--	0.21/--	Poison 1
P1	Fo, Sh	TF, S	OBF		<1	TES	III	0.00/--	0.00/--	0.05/--	0.08/--	0.15/--	Poison 1
P2	Em (Ditch)	SF, S	R		<1	SF	IV	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	Poison 2, 3

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 15

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
R3-1	Em	SF, S	R, GW		1-5	NC	III	NA	0.37/--	0.38/--	0.42/--	0.51/--	Ronan 3
R3-2	Em	SF, S	R, GW		1-5	NC	III	NA	0.55/--	0.66/--	0.73/--	0.88/--	Ronan 3
J1	Sh, Em	SF, S	OBF, GW	Spring Creek	>10	FCS, EC, GDR, U, FC, WH, REP	I	NA	0.15/0.02	0.18/0.02	0.20/0.02	0.23/0.03	Ronan 3
R3-3	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Ronan 3
R3-4	Em	SPF	R, GW		<1	SF	III	NA	0.58/--	0.69/--	0.77/--	0.92/--	Ronan 3
R4-1	Em	SF	R, GW		<1	SF	III	NA	0.42/--	0.50/--	0.54/--	0.66/--	Ronan 4
R4-2	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Ronan 4
R4-3	Em	SF	CF		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Ronan 4
R4-4	Em	SF	R, GW		<1	WH, SF	III	NA	0.69/--	0.83/--	0.90/--	1.10/--	Ronan 4
R4-5	Em, Sh	SF, S	OBF, GW	Spring Creek	>10	FCS, EC, GDR, U, WH, EC, FC	I	NA	0.50/0.05	0.60/0.06	0.66/0.07	0.80/0.08	Ronan 4
R4-6	Em	SF, S	R, GW		1-5	WH, NC, SF	III	NA	0.55/--	0.66/--	0.73/--	0.88/--	Ronan 4
R4-7	Em (Ditch)	SF	CD		<1	SF	IV	NA	0.03/--	0.03/--	0.04/--	0.04/--	Ronan 4
R4-8	Em	SF, S	R, GW		<1	WH, SF	III	NA	0.28/--	0.33/--	0.36/--	0.44/--	Ronan 4
R4-9	Em	SF, S	R, GW		6-10	WH, SF	II	NA	0.46/--	0.60/--	0.67/--	0.85/--	Ronan 4
R4-10	Em	SF, S	R, GW		6-10	WH, SF	II	NA	0.37/--	0.48/--	0.54/--	0.70/--	Ronan 4

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 14

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[2] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
I11	Em, OW	SPF, S	R, GW		6-10	FCS, EC, TES, U, WH, REP	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
I12	Em, Sh	SF, S	GW, OBF	Crow Creek	>10	FCS, TES, EC, GDR, FC, WH	I	0.01/tr	0.00/0.00	0.01/tr	0.04/tr	0.16/0.01	
I13	Em	SF, S	R		<1	SF	IV	0.48/--	0.04/--	0.48/--	0.73/--	1.04/--	
I14	Em	SF, S	R, OBF		1-5	SF	III	0.02/--	0.00/--	0.02/--	0.05/--	0.15/--	
I15	Em	SF, S	R, GW		<1	SF	IV	0.17/--	0.03/--	0.17/--	0.21/--	0.22/--	
I16	Em	SF, S	OBF, CD		<1	SF	IV	0.26/--	0.04/--	0.18/--	0.26/--	0.48/--	
I17	Em	SF, S	R, GW		6-10	SF	III	0.11/--	0.05/--	0.09/--	0.11/--	0.19/--	Ronan 1, 2, 3
								NA	0.83/--	0.99/--	1.09/--	1.32/--	Ronan 4
J1A	Sh	SF, S	GW, OBF	Spring Creek	>10	GDR, U, REP, FCS, FC, EC	II	0.02/--	0.00/--	0.01/--	0.02/--	0.04/--	Ronan 1
								NA	0.01/--	0.02/--	0.02/--	0.03/--	Ronan 2
J2	Em	SF, S	R, GW		1-5	SF	III	0.17/--	0.09/--	0.14/--	0.17/--	0.27/--	Ronan 1
								NA	0.28	0.33	0.36	0.44	Ronan 2
J3	Em	SF, S	R, GW		1-5	SF	III	0.13/--	0.06/--	0.12/--	0.13/--	0.17/--	Ronan 1, 2
K1	Em	SF, S	R, GW		6-10	EC, SF, WH, FCS	II	0.16/--	0.01/--	0.16/--	0.29/--	0.58/--	Ronan 1, 2
								NA	0.69/--	0.83/--	0.90/--	1.10/--	Ronan 3, 4

Table 6.10-1, - Wetland & Riparian Area Characteristics and Estimated Impact Acreages (Continued) -- Page 13

Site	MDT[1] Classification	Hydrologic Type[2]	Hydrologic[3] Source	Drainage	Est. Size Range (Acres)	Prominent[4] Functions	MDT[5] Overall Rating (Category)	Estimated Impacts (Acres), Wetland/Riparian					Alternative Alignments
								Preferred Alternative	Lane Config. A	Lane Config. B	Lane Config. C	Lane Config. D	
H38	Em	SF, S	R		1-5	EC, U, WH, FCS	II	0.02/--	tr/--	0.02/--	0.04/--	0.13/--	
H39	Em	SF, S	R		1-5	EC, U, WH, FCS	II	0.20/--	0.01/--	0.20/--	0.26/--	0.38/--	
H40	Em, OW	SPF, S	R		1-5	EC, U, WH, TES, REP	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
I1	Em	SF, S	R		<1	SF, NC	IV	0.09/--	0.01/--	0.09/--	0.10/--	0.11/--	
I2	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	0.09/--	0.04/--	0.09/--	0.11/--	0.15/--	
I3	Em, OW	SPF, S	R		6-10	EC, TES, U, WH, REP	II	0.01/--	0.00/--	0.01/--	0.20/--	0.84/--	
I4	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	0.00/--	0.00/--	0.00/--	0.00/--	0.00/--	
I5	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	0.04/--	0.03/--	0.04/--	0.05/--	0.07/--	
I6	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	0.23/--	0.09/--	0.23/--	0.34/--	0.59/--	
I7	Em, OW	SF, S	R		1-5	U, REP	II	0.03/--	0.02/--	0.03/--	0.04/--	0.06/--	
I8	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	0.02/--	tr/--	0.02/--	0.05/--	0.09/--	
I9	Em, OW	SF, S	R		1-5	EC, TES, WH, U, REP	II	tr/--	0.00/--	tr/--	0.02/--	0.10/--	
I10	Em, OW	SF, S	R		6-10	FCS, EC, TES, U, WH, REP	II	0.13/--	0.03/--	0.13/--	0.22/--	0.46/--	

II. Air Quality Dispersion Analysis

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F.6.7. AIR QUALITY: AFFECTED ENVIRONMENT

F.6.7.1. Environmental Setting

Air quality characteristics in the area of US 93 are influenced by the topography -- the area is in a wide valley sheltered by the mountains of the Mission Range. Being sheltered by the mountains, the area has lighter winds and more stable atmospheric conditions than open terrain.

Particulate air quality data were collected on the Flathead Indian Reservation at several sites between 1981 and 1988. The monitoring sites in Ronan and Polson have collected data since 1981 and 1984 respectively. Total Suspended Particulate (TSP) data were collected until 1989 when the network was modified to monitor respirable particulate (PM_{10}) at Ronan and Polson only. In addition, PM_{10} concentrations were monitored at Hot Springs during 1995. TSP data gathered on the Flathead Indian Reservation between 1981 and 1989 and PM_{10} data collected at Hot Springs during 1995 indicate the existing air quality is good except for Polson and Ronan. No monitoring for carbon monoxide (CO) has been conducted on the Flathead Indian Reservation.

F.6.7.2. Regulations

Separate air quality regulations address ambient pollutant concentrations and emissions of pollutants from specific sources. Federal limits have existed for the ambient concentrations of five "criteria" pollutants since 1971. The sixth criteria pollutant, lead, was added in 1978. These limits are designated as the National Ambient Air Quality Standards (NAAQS). These standards are the driving force behind the development and implementation of emission limitations and other controls. Sources of pollution, or emission sources, are classified as point sources, area sources, and mobile sources. Emission limitations have been determined for many specific industrial point sources and some mobile sources.

Two levels of NAAQS were established: Primary standards to protect public health with an adequate margin of safety and secondary standards to protect the general public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the air. Secondary standards are based on the potential for damage to crops, vegetation, wildlife, visibility, climate and adverse effects on the economy.[1] Table F.6.7-1 lists these primary and secondary federal standards in micrograms per cubic meter ($\mu g/m^3$) for the pollutants for which ambient standards have been established.

The United States Environmental Protection Agency (USEPA) has the primary responsibility of ensuring compliance with the NAAQS. This is accomplished by classifying all parts of the country as either 1) "attainment," where existing concentrations are less than the NAAQS limits, 2) "non-attainment," where concentration levels exceed the NAAQS limits more than once or twice a year, or 3) "unclassified," where there are insufficient data to establish a classification. Regulations require that non-attainment areas develop implementation plans to lower the pollutant concentration to less than NAAQS levels. Ronan and Polson are designated as non-attainment areas for PM_{10}. As a result, a draft Technical Support Document (TSD)[2] has been prepared by USEPA Region VIII to address control strategies for these areas preliminary to the development of a tribal implementation plan. The Polson portion of the draft TSD was finalized in February 1993.[3] Future finalization of the Ronan portion is anticipated.

The 1977 Clean Air Act amendments added protection of the cleanliness of existing air in attainment areas by establishing regulations for the Prevention of Significant Deterioration (PSD) for selected pollutants. The PSD

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[1]John H. Seinfeld, Atmospheric Chemistry and Physics of Air Pollution, Wiley, New York, 1986, p. 69.

[2]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[3]Personal communication with Ms. Susan Zazzali, USEPA Helena Office, March 4, 1993.

Table F.6.7-1 Ambient Air Quality Standards

Pollutant	Averaging Period	National Primary[1] ($\mu g/m^3$)	National Secondary[2] ($\mu g/m^3$)
Sulfur Dioxide (SO_2)	Annual	80	None
	24-hour[3]	365	None
	Three-hour[3]	None	1,300
Lead (Pb)	Quarter	1.5	Same as primary
Ozone (VOC)	One-hour[3]	235	Same as primary
Nitrogen Dioxide (NO_2)	Annual	100	Same as primary
Particulate Matter (PM_{10})	Annual	50	Same as primary
	24-hour[3]	150	Same as primary
Carbon Monoxide (CO)	Eight-hour[3]	10,000	Same as primary
	One-hour[3]	40,000	Same as primary

40 CFR 50
Micrograms per cubic meter is ($\mu g/m^3$)
[1] Primary standards are intended to protect the public health. [2] Secondary standards are intended to protect the general welfare of the public. [3] Not to be exceeded more than once per year.

regulations divide the country into Class I and Class II areas with the possibility of a Class III designation. Class I areas include national wilderness areas, all national parks and monuments, and any areas that states or American Indian tribes wish to designate as Class I. All other areas are considered Class II. The Flathead Indian Reservation is designated as a Class I area. The PSD regulations ~~which apply to~~are triggered by the first permit application from a large stationary source~~s, either new or modified,~~ requesting new construction or modification of an existing facility. This first permit establishes a baseline date and concentration. The PSD regulations allow specific incremental increases in particulate, sulfur dioxide, and nitrogen oxide pollution over the ~~existing~~ baseline levels. ~~The PSD regulations do not apply to the proposed action because it is not a stationary source.~~Once the PSD baseline is established, a demonstration of the increment consumed by all subsequent new or modified sources, including mobile sources, must be part of a permit application. The baseline date and concentrations have not been triggered on the Flathead Indian Reservation as of January 1996.

In addition to the quantitative analysis of increment consumption, the PSD regulations require an analysis of the effects on visibility. This analysis is presented in Appendix F.

Of the six criteria ambient air quality pollutants presented in Table F.6.7-1, five are associated with the operation of automobiles and will be considered in this document. Sulfur dioxide is not emitted by internal combustion engines to a degree that warrants an emission factor and is not considered a gaseous mobile source pollutant.[4]

Two of the other five criteria pollutants, CO and PM_{10}, affect air quality within the highway corridor. The effects of CO and PM_{10} typically occur at distances up to approximately 100 meters from the point of emission. The remaining three criteria pollutants, lead (Pb), ozone as measured by volatile organic compounds (VOCs), and nitrogen dioxide (NO_2) are of limited concern because they create small effects on air quality within the highway corridor.

Because the proposed action is almost entirely within the boundaries of the Flathead Indian Reservation, the Montana Ambient Air Quality Standards (MAAQS) are not applicable. USEPA regulations, the NAAQS regulations and local tribal regulations apply.

F.6.7.3. Emissions

The magnitude of the ambient concentration of an air quality pollutant is directly related to the amount of emissions, the relative location of the source of the emissions, and other factors which may be characteristic of specific pollutants. Emission rates are calculated using empirical relationships developed by USEPA. These emission rates are then used with computer models that combine the effects of the emission levels and meteorology to predict the ambient concentration at specific receptor locations. This study will consider only CO and PM_{10} quantitatively. Effects of the other three criteria pollutants associated with mobile sources will be discussed qualitatively.

Maximum CO emission rates and concentrations occur during the "CO season" which typically extends from November through February. Starting cold engines and typical winter meteorology combine to produce higher ambient concentrations of CO during the cold months of the year. CO emissions are ~~also~~ higher at ~~the~~ lower vehicle speeds ~~in the communities~~decreasing to an almost constant rate between approximately 50 and 55 miles per hour then increasing with higher speeds.

Particulate emissions from mobile sources consist of exhaust or tailpipe emissions of lead, organic compounds, and sulfates, and fugitive emissions from travel on roadways. Tailpipe particulate emissions are approximately three orders of magnitude less than the fugitive emissions and so they were not included in this quantitative study. Fugitive particulate emissions and PM_{10} ambient concentrations arise from the presence of particulate matter, typically soil and winter sanding material, on the roadway. Soil may be deposited on paved roadways by tracking from unpaved areas by vehicle tires. Fugitive emissions may be high for a short period of time in early spring due to the accumulation of sanding material on highways over the winter months. Some respirable particles are present in the sanding material; in addition, the grinding action of tires on the dry roadway surface creates respirable particulate from the larger particles. Ideally, sSanding material is ~~typically~~ removed from streets and highways ~~approximately~~within two weeks after the last spring snow. The highest PM_{10} concentrations are expected in the areas where ~~high~~large volumes of sanding material are used and where many unpaved streets intersect US 93.

On 10 April 1991, a road dust study was conducted in the non-attainment areas of Polson and Ronan by the Montana Air Quality Division (AQD)[5] to help identify the source of high ambient PM_{10} concentrations measured in those two communities. The study included a turning lane on US 93 in Ronan and a southbound lane on Main Street in Polson. The study measured the amount of small particles found on the roadway and used the data to calculate PM_{10} emission factors. These emissions factors are applicable in a limited area for a limited time, but the

[4]U.S. Environmental Protection Agency, Compilation of Air Pollutant Emission Factors (AP-42), Volume 1 Stationary Point and the Area Sources and Volume 2 Mobile Sources, September 1985, (NTIS PB86-124906).

[5]GeoResearch, Inc., Confederated Salish and Kootenai Tribes of the Flathead Reservation, Air Quality Data Report, Second Quarter 1990 - First Quarter 1991.

AQD was able to demonstrate that fugitive emissions from travel on roadways with these levels of particulate matter can be expected to produce ~~to~~ ambient levels of PM_{10} which exceed the standards. ~~Using studies conducted in three Montana cities,~~ USEPA has ~~estimated that early spring~~published silt loadings ~~on winter sanded streets may be five to six times the values presented for year round drivi: g conditions.~~measured at many locations in several Montana communities from 1978 through 1992 and the AQD has similar data through October 1995. Data are available for measurements made several times throughout the year at the same location. In order to estimate the silt loadings on roadways on the Flathead Indian Reservation, the silt louding data collected at 19 locations in five Montana communities which were judged to experience similar weather conditions and traffic levels as the Flathead Indian Reservation were selected for further analysis. An average of the measurements made during the winter and spring months (November through April) was used to characterize winter-sanded streets in the communities. During the winter of 1994, chemical deicer was used in the communities of Ronan and Polson when the temperatures were above zero degrees Fahrenheit. An average of the measurements made at the selected locations during the summer and fall months was used to characterize carry-on from unpaved areas in the communities during the usage of chemical deicer. The emission factors used for the rural segments of the highway were obtained by adding a factor characteristic of carry-on US 93 at Missoula to the USEPA silt loading measured soon after the application of sand on an limited access roadway. The carry-on factor was weighted for the number of approaches found on each segment. (Section 6.2)

Tables F.6.7-2 and F.6.7-3 presents the pertinent variables with the calculated existing emission factors for CO and ~~the rates~~ for PM_{10} on each segment and at the major intersections of US 93 in the Mission Valley. These emission factors ~~and rates~~ are used as ~~information~~input data for an air dispersion models to calculate the predicted ambient concentrations. ~~PM_{10} emission factors for designated left turn bays outside the communities of Ronan and Polson were not included because of lack of data~~The CO emission factors were calculated using the USEPA model MOBILE5a.[6] The particulate emission from vehicle tailpipe emissions were obtained using the USEPA model PART5.[7] The reentrained road dust PM_{10} emission factors were obtained using silt loading data from AP-42[8] and from the AQD.[9] These emission factors are considered to represent the worst case because they represent the time of year when the CO and PM_{10} emissions are highest. They are not average values, but the highest expected values.

F.6.7.4. Ambient Concentrations

This analysis includes a qualitative discussion of five of the six federal criteria pollutants and a quantitative analysis of CO and PM_{10}. Federal Highway Administration (FHWA) guidelines[10] state that project-level air quality analysis of volatile organic compounds and oxides of nitrogen are best addressed on a regional scale because their effects are manifested at large distances from the point of emission. FHWA requires quantitative project-level analysis of CO and PM_{10} because effects are apparent in or near the highway corridor.[11]

NAAQS are the ultimate standard for comparison when assessing the effects of an existing or proposed emission source. Tables F.6.7-~~34~~ and F.6.7-5 presents the ambient concentrations of CO and PM_{10} on each segment and at the major intersections of US 93 in the Mission Valley for the shortest regulated time averaging periods and the annual average for PM_{10}. These concentrations are considered to be worst case because they combine the highest expected emission factors from winter periods with traffic levels which include the higher summer levels.

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[6]U.S. Environmental Protection Agency, Office of Mobile Sources, User's Guide to Mobile5 (Mobile Source Emission Factor Model), May 1994. EPA-AA-AQAB-94-01.

[7]U.S. Environmental Protection Agency, Office of Mobile Sources, Draft User's Guide to PART5: A Program for Calculating Particle Emissions From Motor Vehicles. February 1995. EPA-AA-AQAB-94-2.

[8]U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Compilation of Air Pollutant Emission Factors, Fifth edition. January 1995. AP-42.

[9]Facsimile transmission from Gretchen Bennett, Montana Department of Environmental Quality, January 26, 1996.

[10]Federal Highway Administration Bulletin, June 18, 1980, and attachment: Project-Level Air Quality Analyses - A Discussion Paper, prepared by Jesse R. Chaves, Federal Highway Administration Office of Environmental Policy.

[11]Ibid.

Table F.6.7-2 Worst Case Emission Factors for 1991[1]

Segment	Carbon Monoxide			PM_{10}		
	Design Hour Volume	Speed Limitation (mph)	Emission Factor (g/veh-mile)	Average Daily Traffic	Approaches (per mile)	Emission Factor (g/veh-mile)
A	877	LOS E (45)	47.78	6,960	11.6	5.859
B	770	posted 35	51.58	7,397	18.0	6.786
C	813	LOS E (45)	47.78	6,452	6.0	3.428
D	813	LOS E (45)	47.78	6,452	6.5	3.634
E	813	posted 45	46.28	6,452	5.6	3.219
F	801	LOS E (45)	47.78	6,357	4.9	2.916
G	723	LOS D (45)	46.39	5,738	6.7	3.707
H	664	LOS D (50)	46.39	5,269	13.5	6.701
I	879	LOS D (50)	46.39	6,976	11.0	5.609
J	1,235	posted 25	65.92	9,800	26.0	8.130[2]
K	1,235	LOS E (45)	47.78	9,801	11.6	5.856
L	1,292	LOS E (45)	47.78	10,253	15.1	6.824
M	1,324	LOS E (45)	47.78	10,507	15.6	6.994
N	1,356	LOS E (45)	47.78	10,761	5.6	3.017
O	1,550	posted 25	65.92	12,300	50.0	8.130[2]
P	664	LOS E (45)	47.78	5,292	7.8	3.375
idling	--	2.5 mph	1536 grams per veh-hour	-	-	0.000

GeoResearch, Inc. 1996. [1] 1994 traffic and existing level of service speed or posted speed limit (Refer to Section 6.1.). Maximum CO emission factors during the CO season (November through February), based on design hour traffic levels and average daily traffic (refer to Section 6.1.). Maximum PM_{10} emission factors in spring after last snow melts and before streets are cleaned (when sanding materials have been allowed to accumulate) based on average daily traffic reported in Section 6.1. Reduction in emission factors for passing lanes not included. [2] Reflects use of chemical deicer. This table has been revised in the final EIS to use traffic volumes for 1994, the MOBILE5A model and 1995 PM_{10} silt loadings.

Table F.6.7-3 Worst Case Emission Factors for Intersection Cross Streets, 1994[1]

Intersection	Carbon Monoxide			PM_{10}		
	Design Hour Volume	Speed Limitation (mph)	Emission Factor (g/veh-mile)	Average Daily Traffic	Approaches (per mile)	Emission Factor (g/veh-mile)
B Street Arlee	77	posted 35 30% delay	51.58	739	18.0	6.106
MT 200 Ravalli	180	estimated 45 45% delay	46.28	1,427	5.6	3.219
Main Access St. Ignatius	137	estimated 45 45% delay	46.28	1,088	22.0	4.008
~~FASMTS~~ 212	132	LOS C (53) 60% delay	46.46	1,045	13.5	6.701
Round Butte Road Ronan	433	posted 25 signal	65.92	3,443	25 to 50	8.130[2]
Division Street Pablo	129	LOS C (53) 60% delay	46.46	1,025	15.1	7.447
Clairmont Road Pablo	129	LOS C (53) 60% delay	46.46	1,025	15.1	7.447
Old US 93 North of Pablo	129	LOS C (53) 60% delay	46.46	1,025	15.6	7.447
MT 35	328	LOS E (45) 88% delay	47.78	2,600	5.6	3.238
Unsignalized Streets Polson	155	posted 25 88% delay	65.92	1,229	25 to 50	8.130[2]
First Avenue East Polson	451	posted 25 signal	65.92	3,580	25 to 50	8.130[2]

GeoResearch, Inc. 1996. [1] 1994 traffic and existing level of service speed or posted speed limit (Refer to Section 6.1.). Maximum CO emission factors during the CO season (November through February), based on design hour traffic levels, average daily traffic (refer to Section 6.1.) and projected traffic levels taken from Montana Traffic By Sections, 1993. PM_{10} emission factors reflect carry-on from approaches and characteristic community silt loading in spring after last snow melts and before streets are cleaned (when sanding materials have been allowed to accumulate) or the use of chemical deicer. [2] Reflects use of chemical deicer. This table has been revised in the final EIS to use traffic volumes for 1994, the MOBILE5A model and 1995 PM_{10} silt loadings.

In addition, whenever more than one value for a model parameter was characteristic of a segment, the value which would produce the higher concentration was selected as worst case. The predicted concentrations shown in Tables F.6.7-3 and F.6.7-4 are the sum of the concentration predicted by the USEPA CAL3QHC line model and a background concentration. CAL3QHC predicts the concentrations of pollutants which are generated by the traffic on US 93. The background concentration represents all other sources of the specific pollutant. The PM_{10} background concentration includes reentrained road dust generated on other roadways and parking lots, and from burning, agricultural activities, and industrial sources. The CO background concentration represents emissions from vehicles on roadways other than those being modeled and from burning and industrial sources. The Montana Air Quality Division (AQD) has established background concentrations of the criteria pollutants typical of the state of Montana as a whole. In addition, AQD has conducted studies in the vicinity of the Flathead Reservation in an attempt to obtain background PM_{10} concentrations specific to the area; however, the results have been representative of pristine wilderness or have included effects from nearby industrial sources. The PM_{10} background concentrations established by AQD are 30 micrograms per cubic meter ($\mu g/m^3$) for 24-hour averages and 8 $\mu g/m^3$ for the annual average. The established CO background concentrations for the 1-hour average is 1725 $\mu g/m^3$.

The short-term standards are more stringent and if the short-term average concentrations are in compliance as they are for CO, the long-term concentrations most likely will also be in compliance. ~~The stringency of the shorter averaging time periods can be demonstrated with a comparison of long-term and short-term modeling results and with actual concentration measurements. The Draft Technical Support Document for Polson and Ronan[12] includes results of long-term annual modeling. The detailed Industrial Source Complex (ISC) model which was used indicated that no exceedences of the annual NAAQS were predicted for the years 1988 and 1989 while exceedences of the 24-hour standard were predicted. Actual monitoring data at Polson show the 24-hour standard was exceeded once in 1989, three times in 1990,[13] once in 1991[14] and not at all in 1992[15] or during the first three quarters of 1993.[16] The annual standards were not exceeded during that time period.~~

~~Table 6.7-3 presents the background, modeled, and total predicted (modeled plus background) concentrations of CO and PM_{10} for each segment~~. Tables F.6.7-~~34~~ and F.6.7-5 shows that predicted CO concentrations are approximately 17% ~~one-tenth~~ or less of the allowable 1-hour NAAQS concentrations on the rural segments of US 93. ~~The predicted PM_{10} concentrations on open road segments are shown to be less than the one half of the standards. The PM_{10} concentrations in Ronan and Polson are shown to exceed the NAAQS.~~

The indicated PM_{10} concentrations are relative values, not absolute values. These values may be used to compare predicted concentrations from one highway segment to another, from one time period to another, and from one alternative to another within this document. These values have been obtained using the CAL3QHC air dispersion model. This model has two modes of operation: (1) screening mode, (2) refined mode. The model was used in the screening mode for this air quality analysis.

The version of the CAL3QHC model which predicts PM_{10} concentrations was released in September 1995. Since that time, it has consistently produced unreasonably high predicted concentrations of PM_{10} when the model has been used in the screening mode (i.e., when it assumes a single worst-case wind speed of 1.0 meters per second). This assumed condition of essentially no wind results in unreasonably high predicted concentrations of PM_{10}. This

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[12]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[13]Komp, p. 10.

[14]GeoResearch, Inc., Confederated Salish and Kootenai Tribes of the Flathead Reservation, Air Quality Data Report, Fourth Quarter 1991, p. 5.

[15]GeoResearch, Inc. Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation, Air Quality Data Report, Fourth Quarter 1992, p. 7.

[16]GeoResearch, Inc., Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation, Air Quality Data Report, Third Quarter 1993, p. 6.

condition in the new PM_{10} portion of the CAL3QHC model does not occur when the refined model is used (i.e., when one year of actual measured wind speed data are part of the input data).[17]

Because of this tendency of the model, the predicted concentrations at Ronan and at Polson should not be taken as actual values. Instead the trend in relative predicted concentrations should be considered. The predicted concentrations produced by the CAL3QHC model are sufficient for comparison of impacts among alternatives because each scenario is treated consistently, just as it would be if the model were used in the refined mode.

The tables in this section have been changed to reflect the use of the 1994 traffic levels and to reflect the parameters required as input by the CAL3QHC model. The tables also have been changed to indicate that the comparison of the relative PM_{10} predicted concentrations to the absolute value NAAQS is not appropriate. The calculation of these concentrations is made possible with the new model, CAL3QHC. Neither should these relative predicted PM_{10} concentrations be compared with concentrations predicted by any other air dispersion model. Also, Tables F.6.7-3 and F.6.7-5 have been added and old Table F.6.7-3 has been renumbered to 6.7-4 to present the emission factors and the predicted concentrations at intersections.

It is likely that Polson will have the highest actual PM_{10} concentrations on the reservation and higher concentrations are likely to occur at intersections than in areas where traffic flows freely. ~~when the USEPA Montana springtime emission factor is used for through traffic and the emission factor determined by AQD for left turn bays is used for traffic making left turns. The more general emission factor developed by USEPA was used for Arlee where an exceedence is not predicted. These factors are applicable in spring between the melting of the last snow storm and street cleaning activities to remove sand used to mitigate winter driving conditions. The spring levels of PM_{10} in Ronan and Polson are approximately five times greater than the NAAQS.~~ Tables F.6.7-4 and F.6.7-5 show that both CO and PM_{10} predicted concentrations are higher in communities and at intersections. In Arlee, the model shows a slight decrease in PM_{10} at the intersection which is likely due to the small number of vehicles expected on B Street and the larger mixing area that the model considers when including the cross streets at intersections. The status of the predicted CO concentrations shown in Tables F.6.7-~~3~~4 and F.6.7-5 is determined by comparison with the applicable NAAQS. This comparison is not appropriate for PM_{10} because of the excessively high predicted concentrations. It should be noted that although extremely high concentrations are predicted in the non-attainment areas of Ronan and Polson, the highest actual measured concentrations have not exceeded the NAAQS since the use of chemical deicer was initiated.

[17]Telephone conversation with Jeff Houk, Region VIII USEPA, January 24, 1996

Table F.6.7-34 Worst Case Predicted Concentrations on Free Flow Segments 1994[1]

Segment	Carbon Monoxide Concentration			Relative PM_{10} Concentrations[2]				
	1-hour NAAQS ($\mu g/m^3$)	Predicted 1-hour ($\mu g/m^3$)	Status	24-hour NAAQS ($\mu g/m^3$)	Predicted 24-hour ($\mu g/m^3$)	Annual NAAQS ($\mu g/m^3$)	Predicted Annual ($\mu g/m^3$)	Status
A	40,000	4,358	in compliance	150	71	50	16	in compliance
B	40,000	5,045	in compliance	150	102	50	22	in compliance
C	40,000	4,129	in compliance	150	52	50	12	in compliance
D	40,000	4,129	in compliance	150	54	50	13	in compliance
E	40,000	4,931	in compliance	150	60	50	14	in compliance
F	40,000	4,129	in compliance	150	49	50	12	in compliance
G	40,000	3,789	in compliance	150	52	50	12	in compliance
H	40,000	3,671	in compliance	150	66	50	15	in compliance
I	40,000	4,129	in compliance	150	70	50	16	in compliance
J	40,000	9,854	in compliance	150	143[3]	50	31[3]	in compliance[3]
K	40,000	5,618	in compliance	150	93	50	21	in compliance
L	40,000	6,763	in compliance	150	124	50	27	in compliance
M	40,000	5,847	in compliance	150	110	50	24	in compliance
N	40,000	5,618	in compliance	150	63	50	15	in compliance
O	40,000	11,914	in compliance	150	172[3]	50	36[3]	exceedence (24-hr)
P	40,000	3,671	in compliance	150	48	50	12	in compliance

GeoResearch, Inc. 1996. Micrograms per cubic meter is ($\mu g/m^3$). [1] 1994 traffic, existing level of service speed or posted speed limit (Refer to Section 6.1.). Maximum CO concentrations during the CO season (November through February), based on design hour traffic levels (Refer to Section 6.1.). Maximum PM_{10} concentrations in spring after last snow melts and before streets are cleaned (when sanding materials have been allowed to accumulate) based on average daily traffic reported in Section 6.1. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Reflects the use of chemical deicer. This table has been revised in the final EIS to use traffic volumes for 1994 and to use the CAL3QHC model.

Table F.6.7-5 Worst Case Predicted Concentrations at Intersections 1994.[1]

Intersection	Carbon Monoxide Concentration			Relative PM_{10} Concentrations[2]				
	1-hour NAAQS ($\mu g/m^3$)	Predicted 1-hour ($\mu g/m^3$)	Status	~~24-hour NAAQS ($\mu g/m^3$)~~	Predicted 24-hour ($\mu g/m^3$)	~~Annual NAAQS ($\mu g/m^3$)~~	Predicted Annual ($\mu g/m^3$)	~~Status~~
B Street Arlee	40,000	5,274	in compliance	~~150~~	100	~~50~~	22	~~in compliance~~
MT 200 Ravalli	40,000	10,541	in compliance	~~150~~	64	~~50~~	15	~~in compliance~~
Main Access St. Ignatius	40,000	4,473	in compliance	~~150~~	51	~~50~~	12	~~in compliance~~
~~EASTTS~~ 212	40,000	5,961	in compliance	~~150~~	76	~~50~~	17	~~in compliance~~
Round Butte Road Ronan	40,000	19,127	in compliance	~~150~~	154[3]	~~50~~	33[3]	~~exceedence (24-hr)[3]~~
Division Street Pablo	40,000	13,746	in compliance	~~150~~	122	~~50~~	26	~~in compliance~~
Clairmont Road Pablo	40,000	13,746	in compliance	~~150~~	122	~~50~~	26	~~in compliance~~
Old US 93 North of Pablo	40,000	9,281	in compliance	~~150~~	125	~~50~~	27	~~in compliance~~
MT 35	40,000	20,959	in compliance	~~150~~	65	~~50~~	15	~~in compliance~~
Unsignalized Streets Polson	40,000	22,104	in compliance	~~150~~	170	~~50~~	36	~~exceedence 24-hr~~
First Ave East Polson	40,000	21,646	in compliance	~~150~~	183[3]	~~50~~	39[3]	~~exceedence (24-hr)[3]~~

GeoResearch, Inc. 1996. Micrograms per cubic meter is ($\mu g/m^3$) [1] 1994 traffic, existing level of service speed or posted speed limit (Refer to Section 6.1.). Maximum CO concentrations during the CO season (November through February), based on design hour traffic levels (Refer to Section 6.1.) and projected traffic levels from Montana Traffic By Sections, 1993. Maximum PM_{10} concentrations in spring after last snow melts and before streets are cleaned (when sanding materials have been allowed to accumulate) based on average daily traffic reported in Section 6.1. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Reflects the use of chemical deicer. This table has been revised in the final EIS to use traffic volumes for 1994 and to use the CAL3QHC model.

F.7.7. AIR QUALITY: ENVIRONMENTAL CONSEQUENCES

Tables in Appendix F identify the impacts for Lane Configurations A, B, C and D that correspond to the Montana Department of Transportation's (MDT) Preferred Alternative and the Confederated Salish and Kootenai Tribe's (CSKT) Preferred Alternative. Refer to Sections 5.3 and 5.4 for more information about the MDT Preferred Alternative and the CSKT Preferred Alternative.

This study quantitatively and qualitatively examines the impacts of carbon monoxide (CO) emissions from vehicles and respirable particulates (PM_{10}) emissions from vehicle travel on roadways on the ambient concentrations of these two air pollutants. Qualitative discussions of lead (Pb), oxides of nitrogen (NO_x), and hydrocarbons or volatile organic compounds (VOCs), CO, and PM_{10} also are included.

Air quality conformance evaluations and determinations, as required by the December 1993 regulations promulgated by the U.S. Environmental Protection Agency, ~~have not yet been completed for the Ronan and Polson PM_{10} non-attainment areas. They will be completed and~~are discussed in Appendix F of the final ~~environmental impact statement (~~EIS~~)~~.

F.7.7.1. Impacts Common to All Alternatives

Air pollution negatively affects visibility, aesthetics, economic viability, safety, personal comfort, and health.

The quantitative analysis of air quality considers the worst case concentrations of both CO and PM_{10}. The National Ambient Air Quality Standards (NAAQS) for CO (one- and eight-hour averages) and PM_{10} (24-hour average) permit the measured concentrations to exceed the established standard concentrations no more than once per year (Table F.6.7-1). Therefore, the concentrations of concern are the highest and second highest concentrations for the averaging period in each year. "Worst-case" parameters and conditions are selected in accordance with U.S. Environmental Protection Agency (USEPA) modeling guidance by combining the highest expected emission factors with the highest expected traffic even though these conditions do not occur at the same time. Worst case also implies selecting the value which will produce the highest concentration when more than one value of the parameter is characteristic.

It is assumed that if these worst case guidance conditions do not show concentrations in exceedence of the standards, then there is little probability the standards will in fact be exceeded. Ambient air monitoring has shown the highest CO concentrations are most likely to occur during the months of November through February in the United States.[18] Likewise, ambient air quality monitoring in Montana has shown the highest concentrations of PM_{10} are most likely to occur in communities during the time between the melting of the last snow and the removal of winter sanding material from the streets.[19] This is the same period when the largest amount of carry-on of particulates from adjacent unpaved areas is expected.

Concentrations of pollutants in the ambient air which are directly related to their emission rates are used as the measurement of their impacts.

Visibility

The primary visibility impacts on the Flathead Indian Reservation are related to regional agricultural burning, local slash burning, residential heating, and fugitive dust from wind erosion of agricultural fields during periods of high

[18]Chaves, Jesse R., Project-Level Air Quality Analyses, A Discussion Paper, May 1980, attached to Federal Highway Administration Bulletin June 18, 1980, p. 10.

[19]Personal communication with Montana Air Quality Bureau, July 17, 1992.

winds or stable conditions[20]. Additional visibility impacts may be contributed by traffic on US 93 during periods of inversion. However, the prevailing meteorology of the area keeps the atmosphere clear most of the time.

Emissions

Five emission source categories have been considered in the discussion of estimated future emissions: emissions from automobile exhaust, emissions from automobile travel on roadways, emissions from highway construction activities, emissions from residential heating, and emissions from agricultural activities.

Vehicle exhaust or tailpipe emissions include CO, VOCs, NO_x, and PM_{10}. A fraction of the tailpipe particulate emissions is lead. Gaseous emission rates of CO, VOCs, and NO_x from vehicles are directly related to traffic volume, traffic speed, temperature, and the model year of the vehicles on the highway. PM_{10} emission rates are directly related to traffic volume. Approximately 25% of the tailpipe PM_{10} emissions are lead and that percentage will continue to decrease as fewer automobiles use leaded gasoline.

PM_{10} emission rates are directly related to the amount of traffic, the weight of the vehicles and their loads, and the quantity of particulate matter on the paved surfaces. ~~High levels of particulate matter are expected on roadways during the spring between the time the last snow melts and the streets are cleaned either by traffic on the open road or by street cleaning activities in the communities. The rates of speed on open road sections of US 93 are highly effective for flushing particles to the roadside.~~ The primary sources of particulate matter on paved surfaces are winter sanding activities, tracking of mud and dirt from nearby unpaved areas, and erosion from adjacent areas.

Emissions associated with construction of a new roadway will be temporary. These temporary emissions are the result of land clearing, blasting, ground excavation, cut and fill operations, and construction of the roadway base and surface. Reconstruction of the segments of the route which will be in the same location as the existing roadway will produce lower emissions than will new construction on the alternate alignments.

Emissions from home heating and agricultural activities include CO, NO_x, VOCs, and PM_{10}. The emission factors for the gaseous pollutants (CO, NO_x, and VOCs) from residential wood burning are larger than for other home heating fuels. These emissions are proportional to the population. It is reasonable to expect a larger population and higher emission from the combustion of home heating fuels in the Mission Valley in 20~~15~~20 than currently exists regardless of transportation improvement. A further increase in home heating emissions may be expected if population increases further due to transportation improvement.

Emissions from agricultural activities are largely PM_{10}. Small amounts of the gaseous pollutants are emitted by the agricultural vehicles. Agricultural emissions are inversely proportional to the population in the area. As the population grows, less land is available for agricultural use and these emissions are expected to decrease as population increases~~regardless of transportation improvements~~.

The quantitative analysis includes CO and PM_{10} only. The ultimate comparison for air quality impacts is made between the applicable National Ambient Air Quality Standards and the predicted ambient concentrations as determined through modeling efforts. Emission rates for these two pollutants were determined and then used as ~~information~~input data for an air diffusion models to determine the ambient concentrations.

The tables in this section have been changed to reflect the use of the 2020 traffic levels and to reflect the parameters required as input by the CAL3QHC model. Table F.7.7-2 has been added and old Tables F.7.7-2 through F.7.7-4 have been renumbered to include the data related to intersections. The calculation of concentrations at intersections is made possible with the use of the CAL3QHC model.

[20] Personal communication with Confederated Salish and Kootenai Tribes Air Quality Program, October 11, 1995.

Tables F.7.7-1 through F.7.7-45 present estimated emission ~~rates~~factors for CO and PM_{10} for each highway segment of the existing alignment with the two-lane and four-lane configurations, for intersecting streets at the major intersections, and for the various alignments at Arlee, Ronan and Polson. Carbon monoxide emission factors were determined using LOS speed or ~~the minimum~~an average speed based on the posted speed limit on each segment, whichever ~~is lower~~produced the higher emission factor (Sections 6.1 and 7.1). On segments where LOS varies with the presence of ~~passing~~additional lanes, the higher emission factors ~~are also provided for the passing lane areas~~ was selected to characterize the entire segment. LOS F is approximated by a speed of less than 45 miles per hour and 100% time delay or "gridlock".[21] To determine a CO emission factor representative of LOS F, it was assumed that traffic will travel at a speed of 2.5 mph for one-third of the time, at 25 mph for one-third of the time, and at 45 mph for one-third of the time. CO emission factors vary with vehicle speed and thus vary between 2-lane and 4-lane configurations as the reduction in congestion permits higher speeds. CO emission factors are greatest at very low speeds, decreasing to a minimum at approximately 50 to 55 miles per hour then increasing with higher speeds. CO emission factors decrease between the 1994 and 2020 scenarios because of government-required automobile design changes.

Fugitive PM_{10} emission ~~rates~~ factors for travel on paved surfaces were estimated using ~~traffic volumes in Section 7.1~~ the vehicle weights characteristic of the mix of traffic in Lake, Sanders, and Flathead Counties in 1994. Factors for the rural segments include some carry-on from each of the approaches. A factor obtained from AP-42 was used to characterize the communities of ~~Arlee,~~ Ronan, and Polson. Values are presented for two winter roadway scenarios: 1) assumes the use of chemical deicers in ~~communities~~Ronan and Polson when temperatures are above zero degrees fahrenheit and the use of clean sand at lower temperatures with the sand being removed when temperatures rise above zero degrees; and 2) assumes the use of typical sanding materials which are allowed to accumulate on roadways throughout the sanding season and are flushed to the roadside on the rural segments or are mechanically removed from the community streets in the spring after the last snow melts. ~~Scenario 1 is applicable to communities only. Scenario 2 is assumed for all~~The use of chemical deicers (Scenario 1) was not considered on the rural highway segments. PM_{10} emission factors for the four-lane configurations assumes that one and one-half as much silt is found on the 4-lane configuration as is present on the 2-lane roadway in the rural areas. In the communities carry-on is assumed to be evenly distributed across the roadway.

These CO and PM_{10} emission factors ~~and PM_{10} emission rates~~are applicable to each lane of traffic in the various highway configuration alternatives. Tables F.7.7-1 through F.7.7-5 present the emission factors which were modeled to determine the predicted ambient concentrations.

Concentrations

Air quality modeling for this study was conducted using screening techniques as an approximation of the modeled concentrations which could be expected from a more lengthy and detailed refined modeling effort. ~~The screening models which were used include the FHWA recommended nomographic technique "CALINE 3"[22] for CO and the USEPA model "SCREEN"[23] for respirable particulates (PM_{10}).~~ As with any dispersion modeling, the accuracy of the modeled concentrations is limited by the quality and completeness of the emissions data, by the quality and representativeness of the meteorological data, and by the mathematical approximation techniques used by the model.

[21]American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 1990.

[22]Federal Highway Administration Technical Advisory T6640.6, CALINE 3 - A Graphical Solution Procedure for Estimating Carbon Monoxide (CO) Concentrations Near Roadways, March 2, 1981.

[23]U.S. Environmental Protection Agency, Screening Procedures for Estimating the Air Quality Impact of Stationary Sources (EPA-450/4-88-010) draft for public comment, August 1988, (NTIS PB89-159396).

Table F.7.7-1 2020 Worst Case Emission Factors[1] Existing Alignment. (Except Arlee, Ronan and Polson).

Segment	Carbon Monoxide					Average Daily Traffic	Approaches per mile	PM_{10}*		
	Design Hour Volume	CSKT Preferred Alternative No Action and/or Lane Configuration A		MDT Preferred Alternative Lane Configurations B, C and D				No Action	Lane Configuration A[3]	Lane Configurations B, C, and D[4]
		Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)	Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)			Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)
A	1,891	LOS F (24)	44.32	LOS B (56)	19.59	15,007	11.6	5.859	4.335	3.731
C	1,753	LOS F (24)	44.32	LOS B (56)	19.59	13,912	6.0	3.428	2.634	2.318
D	1,753	LOS F (24)	44.32	LOS B (56)	19.59	13,912	6.5	3.634	2.777	2.438
E	1,753	LOS E (45)	19.79	posted 45	18.08	13,912	5.6	3.219	1.756	1.756
F	1,728	LOS F (24)	44.32	LOS B (56)	19.59	13,714	4.9	2.916	2.275	2.021
G	1,560	LOS F (24)	44.32	LOS A (65)	32.79	12,380	6.7	3.707	2.829	2.480
H	1,432	LOS F (24)	44.32	LOS B (56)	19.59	11,365	13.5	6.701	4.925	4.220
I	1.897	LOS F (24)	44.32	LOS B (56)	19.59	15,055	11.0	5.609	4.160	3.586
K	2,663	LOS F (24)	44.32	LOS B (56)	19.59	21,134	11.6	5.856	4.333	3.729
L	2,785	LOS F (24)	44.32	LOS B (56)	19.59	22,103	15.1	6.824	3.437	3.437
M	2,855	LOS F (24)	44.32	LOS B (56)	19.59	22,658	15.6	6.994	5.560	4.748

GeoResearch, Inc. 1996. [1] 2020 traffic levels based on three percent annual growth rate; CO emission rates are the expected maximum during CO season (November through March); PM_{10} emission rates are maximum in the spring after the last snow melts and before roadways are cleaned. [2] Speed limitation is determined by which of posted limit or LOS corresponds to the highest emission rate; LOS F, congested conditions, is assumed to be an average of three speeds, 45, 25 and 2.5 mph. [3] Lane configuration A assumes that approaches will be paved and that curbs and gutters will be installed in Ravalli and Pablo. [4] Lane configurations with multiple lanes assumes carry-on equal to 2-lane configuration is present in driving lane and half again as much is found in the passing lane. This is table has been revised in the final EIS using traffic volumes for the year 2020, the MOBILE5A model and 1995 PM_{10} silt loadings.
*CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations B, C and D.

Table F.7.7-2 2020 Worst Case Emission Factors[1] for Cross Streets at Intersections on Existing Alignment. (Except Arlee, Ronan and Polson).

Intersection	Carbon Monoxide					PM_{10}[3]		
	Design Hour Volume	CSKT Preferred Alternative Lane Configuration A and/or No Action on US 93 No Action on Cross Streets		MDT Preferred Alternative Lane Configurations B, C, and D on US 93 No Action on Cross Streets		Average Daily Traffic	Approaches per mile	Lane Configurations A, B, C, and D No Action on Cross Streets
		Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)	Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)			Emission Factor (g/veh/mi)
MT 200 Ravalli	344	LOS D (50) 75% delay	18.08	LOS D (50) 75% delay	18.08	2,354	5.6	3.219
Main Access St. Ignatius	296	LOS D (50) 75% delay	18.08	LOS D (50) 75% delay	18.08	2,349	6.7	4.008
~~FASMTS~~ 212	245	LOS E (45) 88% delay	19.79	LOS E (45) 88% delay	19.79	1,944	13.5	6.701
Division Street Pablo	279	LOS E (45) 88% delay	19.79	LOS E (45) 88% delay	19.79	2,210	15.1	3.710
Clairmont Road Pablo	279	LOS E (45) 88% delay	19.79	LOS E (45) 88% delay	19.79	2,210	15.1	3.710
Old US 93 North of Pablo	279	LOS E (45) 88% delay	19.79	LOS E (45) 88% delay	19.79	2,210	15.6	3.710
MT 35	609	LOS F (24) 97% delay	44.32	LOS F (24) 97% delay	44.32	4,837	5.6	3.238
idling	-	-	586.8 g/veh/hr	-	586.8 g/veh/hr	-	-	0.000

GeoResearch, Inc. 1996. [1] 2020 traffic levels based on three percent annual growth rate; CO emission rates are the expected maximum during CO season (November through March); PM_{10} emission rates are maximum in the spring after the last snow melts and before roadways are cleaned. [2] Speed limitation is determined by which of posted limit or LOS corresponds to the highest emission rate; LOS F, congested conditions, is assumed to be an average of three speeds, 45, 25 and 2.5 mph. This table has been revised in the final EIS using traffic volumes for the year 2020, the MOBILE5A model and 1995 PM_{10} soil loadings.
*CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations B, C and D.

Table F.7.7-3 2020 Worst Case Emission Factors[1] Arlee Alignments and Intersection Cross Street.

Alignments	Carbon Monoxide					PM_{10}*				
	Design Hour Volume	CSKT Preferred Alternative No Action and Lane Configuration A		MDT Preferred Alternative Lane Configurations B, C and D		Average Daily Traffic	Approaches per mile	No Action	Lane Configuration A[3]	Lane Configurations B, C, D[4]
		Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)	Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)			Emission Factors (g/veh/mi)	Emission Factors (g/veh/mi)	Emission Factors (g/veh/mi)
No Action	1,670	LOS F (24)	44.32	-	-	15,944	18.0	6.786	-	-
Existing Alignment	1,670	LOS F (24)	44.32	posted 35	23.26	15,944	18.0	-	6.786	3.941
Existing Alignment B Street	167	posted 35 75% delay	23.26	posted 35 75% delay	23.26	1,594	18.0	6.106	-	-
Alignments 2, 3, 4 Community	334	posted 35	23.26	posted 35	23.26	3,189	18.0	-	4.267	4.267
Alignments 2, 3, 4 B Street	33	posted 35 45% delay	23.26	posted 35 45% delay	23.26	319	18.0	6.106	-	-
Alignments 2, 3, 4 Rural	1,336	LOS F (24)	44.32	LOS A (65)	32.79	12,755	5	-	2.317	2.[illegible]

GeoResearch, Inc. 1996. [1] 2020 traffic levels based on three percent annual growth rate; CO emission rates are the expected maximum during CO season (November through March); PM_{10} emission rates are maximum in the spring after the last snow melts and before roadways are cleaned. [2] Speed limitation is determined by which of posted limit or LOS corresponds to the highest emission rate; LOS F, congested conditions, is assumed to be an average of three speeds, 45, 25 and 2.5 mph. [3] Lane configuration A assumes paved approaches and curbs and gutters in the community. [4] Assumes carry-on equal to 2-lane configuration is present in driving lane and half again as much in passing lane on rural segments. This table has been revised in the final EIS using traffic volumes for the year 2020, the MOBILE5A model and 1995 PM_{10} silt loadings.
*CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations B, C and D.

Table F.7.7-4 2020 Worst Case Emission Factors[1] Ronan Alignments and Intersection Cross Street.

Alignments	Carbon Monoxide					Average Daily Traffic	Approaches per mile	PM_{10}[5]		
	Design Hour Volume	CSKT Preferred Alternative No Action and Lane Configuration A		MDT Preferred Alternative Lane Configurations B, C and D				No Action	Lane Configuration A[3]	Lane Configurations B, C, and D[4]
		Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)	Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)			Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)
No Action	2,663	LOS F (24)	44.32	-	-	21,135	-	8.130	-	-
Existing Alignment	2,663	LOS F (24)	44.32	posted 25	33.77	21,135	-	-	8.130	6.900
Existing Alignment Round Butte Road	807	posted 25 signal	33.77	posted 25 signal	33.77	6,406	-	8.130	8.130	8.130
Alignment 2 One-Way Couplet	2,663	-	-	posted 25	33.77	21,135	-	-	6.900	-
Alignments 3, 4 Community	1,065	posted 25	33.77	posted 25	33.77	8,454	-	-	6.900	6.900
Alignments 3, 4 Round Butte Road	323	posted 25 signal	33.77	posted 25 signal	33.77	2,553	-	-	9.500	9.500
Alignments 3, 4 Rural	1,598	LOS F (24)	44.32	LOS A (65)	32.79	12,681	5	-	2.317	2.055

GeoResearch, Inc. 1996. [1] 2020 traffic levels based on three percent annual growth rate; CO emission rates are the expected maximum during CO season (November through March); PM_{10} emission rates are maximum in the spring after the last snow melts and before roadways are cleaned. [2] Speed limitation is determined by which of posted limit or LOS corresponds to the highest emission rate; LOS F, congested conditions, is assumed to be an average of three speeds, 45, 25 and 2.5 mph. [3] Lane configuration A assumes paved approaches and curbs and gutters in the community. [4] Assumes carry-on equal to 2-lane configuration is present in driving lane and half again as much in passing lane on rural segments. ~~This table has been revised in the final EIS using traffic volumes for the year 2020, the MOBILE5A model and 1995 PM_{10} silt loadings.~~

*CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations B, C and D.

Table F.7.7-5 2020 Worst Case Emission Factors[1] Polson Alignments and Intersection Cross Streets.

Alignments		Carbon Monoxide					PM_{10}[4]				
		Design Hour Volume	CSKT Preferred Alternative No Action and Lane Configuration A		MDT Preferred Alternative Lane Configurations B, C and D		Average Daily Traffic	Approaches per mile	No Action	Lane Configuration A[3]	Lane Configurations B, C, D[4]
			Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)	Speed Limitation[2] (mph)	Emission Factor (g/veh/mi)			Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)	Emission Factor (g/veh/mi)
No Action	N	2,920	LOS F (24)	44.32	-	-	23,200	5.6	3.017	-	-
	O	3,200	LOS F (24)	44.32	-	-	25,400	50	8.130	-	-
	P	1,760	LOS F (24)	44.32	-	-	14,000	7.8	3.375	-	-
Existing Alignment	N	2,920	LOS F (24)	44.32	LOS A (65)	32.79	23,200	5.6	-	2.501	2.208
	O	3,200	LOS F (24)	44.32	posted 25	33.77	25,400	-	-	6.900	6.900
	P	1,760	LOS F (24)	44.32	posted 45	18.08	14,000	7.8	-	3.170	3.170
	cross streets	480	LOS F (24) 97% delay	44.32	LOS F (24) 88% delay	44.32	3,810	-	8.130	8.130	8.130
	1st Avenue East, signal	839	posted 25	33.77	posted 25	33.77	6,660	-	8.130	8.130	8.130
Alignments 2, 3	N	1,710	LOS F (24)	44.32	LOS A (65)	32.79	13,600	5.6	-	2.501	2.208
	O	2,290	posted 25	33.77	posted 25	33.77	18,200	-	-	6.900	6.900
	P	780	LOS E (45)	19.79	posted 45	18.08	6,200	7.8	-	3.170	3.170
	cross streets	344	posted 25 60% delay	33.77	posted 25 45% delay	33.77	2,669	-	8.130	8.130	8.130
	1st Avenue East, signal	588	posted 25	33.77	posted 25	33.77	4,662	-	8.130	8.130	8.130
Alignments 2, 3	Rural	980	LOS A (56)	32.79	LOS A (65)	32.79	7,800	5	-	2.317	2.317

GeoResearch, Inc. 1996. [1] 2020 traffic levels based on three percent annual growth rate; CO emission rates are the expected maximum during CO season (November through March); PM_{10} emission rates are maximum in the spring after the last snow melts and before roadways are cleaned. [2] Speed limitation is determined by which of posted limit or LOS corresponds to the highest emission rate; LOS F, congested conditions, is assumed to be an average of three speeds, 45, 25 and 2.5 mph. [3] Lane configuration A assumes paved approaches and curbs and gutters in the community. [4] Assumes carry-on equal to 2-lane configuration is present in driving lane and half again as much in passing lane on rural segments. [5]This table has been revised in the final EIS using traffic volumes for the year 2020, the MOBILE5A model and 1995 PM_{10} silt loadings.

*CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations A, B, C and D.

The USEPA CAL3QHC model[24] was used in a screening mode which means using the single worst meteorological condition and all wind directions in place of actual site specific meteorological data. CAL3QHC models the effects of various traffic levels, differing road widths, and varying numbers of traffic lanes at intersections and on segments with free flowing traffic.

Screening models are designed to be conservative and tend to overestimate concentrations to a greater degree than do more refined models.[25] In the case of CAL3QHC, the model has only recently (September 1995) been revised to calculate PM_{10} concentrations. It has consistently predicted excessively high concentrations of PM_{10} when used in the screening mode since that time.[26]

Tables F.7.7-~~56~~ through F.7.7-~~810~~ summarize the maximum predicted concentrations when the modeling procedures described above are applied to the emission factors and rates presented in Tables F.7.7-1 through F.7.7-~~45~~.

These tables have been renumbered to reflect the insertion of Tables F.7.7-2 and 7.7-7 which present emission factors and predicted concentrations at intersections. Old Tables F.7.7-5 through 7.7-8 have been changed to reflect the use of the new model CAL3QHC. Because CAL3QHC predicts excessively high concentrations of PM_{10}, it is no longer appropriate to compare these values to the NAAQS, thus the NAAQS values and the compliance status for PM_{10} have been removed from the tables.

The tabulated concentrations are those predicted to occur at the Right of Way for rural segments and ten feet from the edge of the roadway in the communities. These predicted CO concentrations are ~~then~~ compared to the applicable ambient air quality standards. The ~~maximum CO~~predicted concentrations ~~occur at the edge of the roadway and lie inside the highway ROW. The maximum PM_{10} concentrations occur 33 meters (approximately 110 feet) from the downwind side of the area source which is assumed to be the edge of the highway traffic lanes. The maximum PM_{10} concentrations lie outside the highway ROW~~include background concentrations for 2020 which are estimated to be higher than the 1994 values due to the population increase. The effects of PM_{10} emissions associated with construction are not included in the tabulated values.

CO concentrations depend on the age of vehicles, the ambient temperature, and the vehicle speed ~~which in turn depends on LOS and posted speed limits~~. These factors are expected to be the same for both No Action and Lane Configuration A, resulting in the same emission factors and predicted CO concentrations. Multi-lane roads, lane configurations B, C, and D generally permit increased vehicle speeds with improved levels of service resulting in decreased CO concentrations. ~~The effects of left turn bays on CO concentrations can be quantified if a substantially different LOS is possible as a result of the left turn bay. Carbon monoxide may decrease for those vehicles not turning and increase for those turning.~~

PM_{10} concentrations depend on the number of vehicles on the road, the weight of the vehicles including loads, and the amount of particulates on the road surface. A worst case assumption is that the same amount of sand is put onto each lane of the four-lane configurations in the rural areas as well as in the communities ~~The cross-sectional area of the highway does not affect PM_{10} emissions because each vehicle passes a given point only once, regardless of the width of the highway. USEPA d~~. Data is available to differentiate PM_{10} emissions from road surface conditions on major highways~~,~~ and on collector streets~~, and on city streets~~ during the spring time when winter sanding material has been allowed to accumulate and during the summer and fall when carry-on is present. Carry-on is expected to have a larger impact where there are more unpaved approaches. ~~The Montana Air Quality Bureau (MAQB) data is available for community streets with left turn bays during the spring when winter sand has been allowed to~~

[24]U.S. Environmental Protection Agency, User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections, September 1995. EPA-454/R-92-006.

[25]U.S. Environmental Protection Agency, Office of Air and Radiation, Guideline on Air Quality Models (Revised), (EPA-450/2-78-027R), July 1986, Research Triangle Park, North Carolina 27711.

[26]Telephone conversation with Jeff Hauk, Region VIII USEPA, January 24, 1996.

~~accumulate. No data is available to quantify the effects on PM_{10} emissions of left turn bays on major highways. Sand may accumulate to some unknown degree in the turn bay on the open highway and create increased PM_{10} emissions from the turning vehicles. However, this effect is opposed by the increased flushing efficiency of the higher speeds possible for those vehicles not turning.~~

Tables F.7.7-~~5~~6 through F.7.7-~~8~~10 show the predicted concentrations of CO for the one-hour averaging period range from approximately ~~eight to 30%~~ 10 to 64% of the applicable standards. Concentrations of PM_{10} predicted by the CAL3QHC model have been found to be excessively high when the model is used in the screening mode. For that reason, the predicted concentrations are not comparable to the NAAQS for the determination of compliance status. The trend of relative concentrations across the alternatives is sufficient for the purpose of this EIS which is to evaluate the effects of the alternatives on air quality.

~~Table 7.7-5 shows the 24-hour PM_{10} values are approximately one half to two thirds of the NAAQS on the open road segments. Tables 7.7-6, 7.7-7 and 7.7-8 show that PM_{10} exceedences are predicted in the communities of Ronan and Polson during the period between the melting of the last snow and street cleaning activities when sand is used on the community throughout the winter and allowed to accumulate. Arlee remains in compliance when sand is used in the community if through traffic uses an alternate alignment. The use of chemical deicers reduces the predicted PM_{10} concentrations to approximately 70% or less of the ambient standard.~~ According to Mr. George Swartz of MDT, Missoula Division, the current practice in Ronan and Polson is to used only magnesium chloride, a chemical deicer, on the community streets when ambient temperatures are above zero degree fahrenheit. At lower temperatures when the chemical is not effective, clean sand is used and the clean sand is removed from the streets when temperatures reach zero. These control measures are stipulated in the Trial Technical Support Document which is being used as the Tribal Air Quality Implementation Plan and are included in a memorandum of agreement (MOA) for the Polson PM_{10} Non-Attainment Area.

It also is evident from ~~these three~~ Tables F.7.7-8 through F.7.7-10 that routing of through traffic on alternate alignments reduces the ~~maximum expected~~predicted CO and PM_{10} concentrations in the communities.

Since the standards for the shorter averaging time periods are more stringent, when these concentrations shown in the tables are within compliance as they are for CO, it is most likely the concentrations for the longer averaging periods will also be in compliance.[27] However, because the model predicts excessively high concentrations of PM_{10}, the concentrations that appear to be exceedences most likely are not, but are merely higher than concentrations at other locations. For that reason, compliance status is not tabulated and the annual average, which shows the same trend, is not presented.

Because traffic volume is expected to increase at an annual rate of three percent, all alternatives, including No Action, will include an increase in traffic related air quality emissions. These increases will impact the highway segments to a greater or lesser degree for the various alignments, lane configurations, and design options. In general, both CO and PM_{10} emissions increase with increasing traffic volume. CO emissions increase with decreasing speeds and PM_{10} emissions increase with the amount of dry particulate matter present on the roadway surface.

Total suspended particulate data gathered at five sites on the Flathead Indian Reservation between 1981 and 1989 indicate the existing air quality is good except for the non-attainment areas of Polson and Ronan. ~~Predicted PM_{10} concentrations based on the increased traffic volume do not exceed NAAQS, and none of the alternatives, including No Action, is expected to substantially impact the existing air quality except when particulate matter such as sanding material and tracked soil is found on a dry roadway.~~

[27]FHWA Technical Advisory, T6640.6.

Table F.7.7-6 2020 Worst Case Predicted Concentrations[1] Existing Alignment (Except Arlee, Ronan and Polson) ($\mu g/m^3$)

Segment	Carbon Monoxide Concentrations				Relative PM_{10} Concentrations[2]			
	NAAQS 1-Hour ($\mu g/m^3$)	Predicted 1-Hour ($\mu g/m^3$)		Status	~~NAAQS 24-Hour ($\mu g/m^3$)~~	Predicted 24-Hour ($\mu g/m^3$)		
		CSKT Preferred Alternative No Action and Lane Configuration A	MDT Preferred Alternative Lane Configurations B, C and D			No Action	CSKT Preferred Alternative Lane Configuration A[3]	MDT Preferred Alternative Lane Configurations B, C, and D[4]
A	40,000	7,180	4,317	in compliance	~~150~~	125	102	91
C	40,000	6,722	4,088	in compliance	~~150~~	85	73	68
D	40,000	6,722	4,088	in compliance	~~150~~	87	75	70
E	40,000	5,004	4,546	in compliance	~~150~~	99	71	67
F	40,000	6,722	4,088	in compliance	~~150~~	77	68	64
G	40,000	6,264	5,119	in compliance	~~150~~	83	72	67
H	40,000	5,920	3,859	in compliance	~~150~~	113	93	83
I	40,000	7,180	4,317	in compliance	~~150~~	121	99	89
K	40,000	9,813	5,348	in compliance	~~150~~	171	136	120
L	40,000	11,759	6,149	in compliance	~~150~~	232	135	127
M	40,000	10,385	5,691	in compliance	~~150~~	208	173	150

GeoResearch, Inc., 1996 [1] The smallest time averaging periods have the most stringent NAAQS. CO concentrations are at their highest during the months of November through February. PM_{10} concentrations are at their highest in communities during the winter season. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Lane configuration A assumes all approaches are paved to the ROW and that curbs and gutters are installed in Arlee and Pablo. [4] Assumes paving and curbs and gutters as for Lane Configuration A and one and one-half times the amount of carry-on spread over the wider roadway. All configurations assume sand is applied at a constant rate in all lanes. This table has been revised in the final EIS to use traffic volumes for the year 2020 and to use the CAL3QHC model.

Table F.7.7-7 2020 Worst Case Predicted Concentrations[1] at Intersections on Existing Alignment (Except Arlee, Ronan and Polson) ($\mu g/m^3$)

Intersection	Carbon Monoxide Concentrations				Relative PM_{10} Concentrations[2]			
	NAAQS 1-Hour ($\mu g/m^3$)	Predicted 1-Hour ($\mu g/m^3$)		Status	~~NAAQS 24-Hour ($\mu g/m^3$)~~	Predicted 24-Hour ($\mu g/m^3$)		
		CSKT Preferred Alternative No Action and Lane Configuration A	MDT Preferred Alternative Lane Configurations B, C and D			No Action	CSKT Preferred Alternative Lane Configuration A[3]	MDT Preferred Alternative Lane Configurations B, C, D[4]
MT 200 Ravalli	40,000	8,668	7,523	in compliance	~~150~~	107	75	69
Main Access St. Ignatius	40,000	6,951	5,691	in compliance	~~150~~	81	72	69
~~FASMTS~~ 212	40,000	9,698	3,516	in compliance		133	109	96
Division Street Pablo	40,000	15,652	9,584	in compliance	~~150~~	227	133	124
Clairmont Road Pablo	40,000	15,652	9,698	in compliance	~~150~~	227	133	124
Old US 93 North of Pablo	40,000	15,308	8,553	in compliance	~~150~~	236	135	125
MT 35	40,000	15,766	12,217	in compliance	~~150~~	108	97	91

GeoResearch, Inc., 1996 [1] The smallest time averaging periods have the most stringent NAAQS. CO concentrations are at their highest during the months of November through February. PM_{10} concentrations are at their highest in communities during the winter season. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Lane configuration A assumes all approaches are paved to the ROW and that curbs and gutters are installed in Arlee and Pablo. [4] Assumes paving and curbs and gutters as for Lane Configuration A and one and one-half times the amount of carry-on spread over the wider roadway. All configurations assume sand is applied at a constant rate in all lanes. This table has been revised in the final EIS to use traffic volumes for the year 2020 and to use the CAL3QHC model.

Table F.7.7-8 2020 Worst Case Predicted Concentrations[1] Arlee Alignments ($\mu g/m^3$)

Alignments	Carbon Monoxide Concentrations				Relative PM_{10} Concentrations[2]			
	NAAQS 1-Hour ($\mu g/m^3$)	Predicted 1-Hour ($\mu g/m^3$)		Status	~~NAAQS 24-Hour ($\mu g/m^3$)~~	Predicted 24-Hour ($\mu g/m^3$)		
		CSKT Preferred Alternative No Action and Lane Configuration A	MDT Preferred Alternative Lane Configurations B, C and D			No Action	CSKT Preferred Alternative Lane Configuration A[3]	MDT Preferred Alternative Lane Configurations B, C, and D[4]
No Action	40,000	8,210	-	in compliance	~~150~~	185	-	-
Existing Alignments	40,000	8,210	5,233	in compliance	~~150~~	185	123	115
Existing Alignment B Street Intersection	40,000	9,469	8,782	in compliance	~~150~~	183	122	113
Alignments 2, 3, 4 Community	40,000	2,829	2,714	in compliance	~~150~~	-	56	54
Alignments 2, 3, 4 B Street Intersection	40,000	3,401	2,829	in compliance	~~150~~	-	55	53
Alignments 2, 3, 4 Rural	40,000	5,691	4,661	in compliance	~~150~~	-	67	63

GeoResearch, Inc., 1996 [1] The smallest time averaging periods have the most stringent NAAQS. CO concentrations are at their highest during the months of November through February. PM_{10} concentrations are at their highest in communities during the winter season. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Lane configuration A assumes all approaches are paved to the ROW and that curbs and gutters are installed in Arlee and Pablo. [4] Assumes paving and curbs and gutters as for Lane Configuration A and one and one-half times the amount of carry-on spread over the wider roadway. All configurations assume sand is applied at a constant rate in all lanes. This table has been revised in the final EIS to use traffic volumes for the year 2020 and to use the CAL3QHC model.

Table F.7.7-9 2020 Worst Case Predicted Concentrations[1] Ronan Alignments ($\mu g/m^3$)

Alignments	Carbon Monoxide Concentrations				Relative PM_{10} Concentrations[2]			
	NAAQS 1-Hour ($\mu g/m^3$)	Predicted 1-Hour ($\mu g/m^3$)		Status	~~NAAQS 24-Hour ($\mu g/m^3$)~~	Predicted 24-Hour ($\mu g/m^3$)		
		CSKT Preferred Alternative No Action and Lane Configuration A	MDT Preferred Alternative Lane Configurations B, C and D			No Action	CSKT Preferred Alternative Lane Configuration A[3]	MDT Preferred Alternative Lane Configurations B, C, and D[4]
No Action	40,000	11,759	-	in compliance	~~150~~	271	-	-
Existing Alignments	40,000	11,759	8,897	in compliance	~~150~~	271	235	219
Existing Alignment Round Butte Road Intersection	40,000	18,972	15,308	in compliance	~~150~~	292	257	242
Alignments 2 One-Way Couplet	40,000	5,691	-	in compliance	~~150~~	-	148	-
Alignments 3, 4 Community	40,000	5,920	4,890	in compliance	~~150~~	-	116	111
Alignments 3, 4 Round Butte Road Intersection	40,000	10,156	8,553	in compliance	~~150~~	-	127	117
Alignments 3, 4 Rural	40,000	8,324	6,378	in compliance	~~150~~	-	66	62

GeoResearch, Inc., 1996. [1] The smallest time averaging periods have the most stringent NAAQS. CO concentrations are at their highest during the months of November through February. PM_{10} concentrations are at their highest in communities during the winter season. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Lane configuration A assumes all approaches are paved to the ROW and that curbs and gutters are installed in Arlee and Pablo. [4] Assumes paving and curbs and gutters as for Lane Configuration A and one and one-half times the amount of carry-on spread over the wider roadway. All configurations assume sand is applied at a constant rate in all lanes. This table has been revised in the final EIS to use traffic volumes for the year 2020 and to use the CAL3QHC model.

Table F.7.7-10 2020 Worst Case Predicted Concentrations[1] Polson Alignments and Intersections ($\mu g/m^3$)

Alignments		Carbon Monoxide Concentrations				Relative PM_{10} Concentrations[2,3]			
		NAAQS 1-Hour ($\mu g/m^3$)	Predicted 1-Hour ($\mu g/m^3$)		Status	~~NAAQS 24-Hour ($\mu g/m^3$)~~	Predicted 24-Hour($\mu g/m^3$)		
			CSKT Preferred Alternative No Action and Lane Configuration A	MDT Preferred Alternative Lane Configurations B, C and D			No Action	Lane Configuration A[3]	Lane Configurations B, C, and D[4]
No Action	N	40,000	9,813	-	in compliance	~~150~~	107	-	-
	O	40,000	10,958	-	in compliance	~~150~~	318	-	-
	P	40,000	6,836	-	in compliance	~~150~~	84	-	-
Existing Alignments	N	40,000	9,813	5,119	in compliance	~~150~~	-	95	87
	O	40,000	10,958	10,385	in compliance	~~150~~	-	275	258
	P	40,000	6,836	4,088	in compliance	~~150~~	-	81	81
Unsignalized Intersections		40,000	25,612	21,834	in compliance	~~150~~	312	272	253
First Avenue East Intersection		40,000	21,147	19,086	in compliance	~~150~~	339	297	281
Alignments 2, 3	N	40,000	8,897	6,607	in compliance	~~150~~	-	71	66
	O	40,000	10,500	7,981	in compliance	~~150~~		208	195
	P	40,000	6,836	4,088	in compliance	~~150~~	-	81	81
Unsignalized Intersections		40,000	16,224	13,591	in compliance	~~150~~	-	206	192
First Avenue East Intersection		40,000	17,369	16,453	in compliance	~~150~~	-	216	204
Alignments 2, 3	Rural	40,000	4,775	4,088	in compliance	~~150~~	-	55	53

GeoResearch, Inc., 1996 [1] The smallest time averaging periods have the most stringent NAAQS. CO concentrations are at their highest during the months of November through February. PM_{10} concentrations are at their highest in communities during the winter season. [2] These values are suitable only for comparison with other relative PM_{10} concentrations presented in this document due to excessively high PM_{10} concentrations predicted by the CAL3QHC model. [3] Lane configuration A assumes all approaches are paved to the ROW and that curbs and gutters are installed in Arlee and Pablo. [4] Assumes paving and curbs and gutters as for Lane Configuration A and one and one-half times the amount of carry-on spread over the wider roadway. All configurations assume sand is applied at a constant rate in all lanes. This table has been revised in the final EIS using traffic volumes for the year 2020 and to use the CAL3QHC model. *CSKT preferred alternative is Lane Configuration A. MDT preferred alternative is combination of Lane Configurations A, B, C and D, mixed.

The cumulative impacts of increased ambient concentrations of CO and PM_{10} from increased traffic volume and those due to increased combustion of home heating fuels, particularly wood burning, are expected to occur with or without the proposed action. These expected increases are due to an increased population which is likely to occur with all alternatives including No Action. Any increase in population related to transportation improvement may result in additional emissions from traffic sources and from home heating fuels. Increased population is expected to decrease the amount of agricultural land and thereby reduce emissions from agricultural activities such as tilling and harvesting and wind erosion. The conversion of agricultural land to residential or business development will generate traffic which may increase emissions from paved and unpaved secondary roadways. The increase in traffic will be due primarily to a general increase in population, ~~not~~and to a much lesser degree to improvement of the highway. A small portion of the increased population may be due to commuters choosing to relocate to the study area. The severity of the effect on air quality depends on the traffic volume on these secondary routes, vehicle speeds, and roadway surfaces.

Mitigation

The PM_{10} control strategies discussed in the draft Technical Support Document (TSD)[28] for PM_{10} attainment on the Flathead Indian Reservation include: Street and highway sweeping on an average of once every five days; the use of "clean" sand which contains fewer smaller particles; and the use of alternative road applicants such as ~~the~~ chemical deicer~~, magnesium chloride coated with a polymer~~.[29]

The draft TSD recommends a combination of the aforementioned strategies to reduce PM_{10} concentrations by 43% and thus bring the area into compliance. The use of chemical deicer and clean sand since the winter of 1992-93 has resulted in no PM_{10} exceedences at these two monitoring sites ~~during 1992 and the first three quarters of 1993~~between January 1992 and April 1996.

An MOA for the Polson PM_{10} Non-Attainment Area has been developed among CSKT, the city of Polson, Lake County, MDT and USEPA. The MOA requires two control measures: 1) the application of only clean sand or chemical deicer to road surfaces and 2) sweeping and cleaning driving lanes, shoulder gutters and drop drains within the Polson city limits. These are current practices for MDT on US 93. A strategy is also presented to determine the frequency of street sweeping activities. Jurisdiction of the various agencies for specific streets within the Polson city limits has not been finalized. A similar MOA is anticipated for the Ronan PM_{10} non-attainment area. These strategies are also appropriate mitigation measures for the proposed action. In general, the most effective measures for controlling emissions from paved surfaces are those which prevent material from being deposited onto the surface such as paved approaches and curbs and gutters.

The most effective mitigation measures for gaseous vehicular emissions include new car emission standards and vehicle inspection and maintenance programs. Transportation measures typically play a minor role.[30] Transportation measures have their largest effect on CO emissions which are highest at points of congestion.

MDT will coordinate with CSKT measures for mitigation of emissions and concentrations for air quality.

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[28]U.S. Environmental Protection Agency, A Technical Support Document to the Confederated Salish and Kootenai Tribes Tribal Implementation Plan for Achieving Attainment of the PM_{10} Standard in Polson and Ronan, Montana, third draft, November 1991, prepared by Mark J. Komp.

[29]Komp, pp. 55-63.

[30]Federal Highway Administration Memorandum, July 11, 1983, Subject: Distribution of Report Transportation and Air Quality: A Review of the 1982 State Implementation Plans, from Jerry A. Reagan, Chief, Noise and Air Analysis Division, Federal Highway Administration Office of Environmental Policy.

Specifications on silt content for sanding material will use "200 mesh silt" with less than 10% silt content for sand. "Hardness" of sand typically isn't included in the specifications for sand. MDT and CSKT will consider developing a procedure to test sanding material stored at highway maintenance facilities.

MDT and CSKT will consider mitigation measures to ensure capability to accomplish "clean up" of the highway, especially after the winter season:

- Mitigation measures will consider dedication of equipment to the Flathead Indian Reservation to keep clean highway shoulders.
- Equipment may include increased use of automated "grasshopper brooms" outside communities.
- Consider procedures to apply water to the highway prior to sweeping, then to finish cleaning the highway with an Elgin sweeper.
- Consider a schedule that assures a three-year turnover for sand.
- Consider monitoring quality of sand in storage with a reporting system and a regular schedule for testing.

MDT will coordinate use of additional sweepers with local governments of communities located on the reservation.

MDT will consider measures to mitigate impacts on air quality during construction:

- Use of chemical suppressants, rather than reliance on spraying water, to suppress dust.
- Construction will use a series of shorter segments in phases, rather than one long segment of highway.
- All road surfaces will have pavement when the winter season suspends construction.
- MDT and CSKT will consider special provisions for construction contracts to address specific environmental concerns.

The increased emissions from residential wood burning can be mitigated through regulation of the types of stoves permitted to be used on the reservation and the limitation of burning during inversion episodes.

F.7.7.2. No Action

Carbon monoxide concentrations range from ~~2,667 to 12,150~~5,004 to 25,612 micrograms per cubic meter ($\mu g/m^3$), well within the NAAQS of 40,000 $\mu g/m^3$. The excessively high PM_{10} concentrations predicted for the open road segments of the highway ~~are one-half to two-thirds of~~ exceed the NAAQS at Arlee and from Ronan through Polson. ~~; however, PM_{10} concentrations are shown to exceed the NAAQS in the communities in the spring if winter sanding material has been allowed to accumulate on community streets. The use of chemical deicers reduces PM_{10} concentrations to 70% or less of the NAAQS.~~ While actual exceedences may or may not occur at these locations, the expected PM_{10} concentrations are two to three times higher than those expected on other segments of US 93.

Concentrations of Pb, NO_x and VOCs will generally follow the trends of the CO concentrations. Pb concentrations will continue to decrease as fewer vehicles use leaded gasoline.

F.7.7.3. Existing Alignment (Except Arlee, Ronan and Polson)

Lane configurations A (two-lane) and B, C, and D (four-lane) include wider shoulders, paved approaches on the rural segments and in the communities, and the installation of curbs and gutters in Ravalli and Pablo. These design options help prevent carry-on and erosion from depositing particulates onto US 93. Lane Configuration A (two-lane) is similar to No Action for CO impacts.

The CO concentrations shown in Tables ~~7.7-5, F~~.7.7-6~~,~~ and F.7.7-7~~, and 7.7-8~~ Lane Configurations B, C or D are approximately ~~one~~two-thirds of the concentration with No Action and Lane Configuration A and are less than ~~one-tenth~~15% of the NAAQS on the rural segments. Smaller reductions are predicted in Ravalli where the speed is posted at 45 mph regardless of the lane configuration. Small reductions are expected at intersections also with the highest predicted concentration being approximately 30% of the NAAQS at the intersection with MT 35.

For Lane configuration A (two-lane), the excessively high predicted PM_{10} concentrations are shown to be ~~one-half to two-thirds of~~less than the NAAQS on open road segments of the highway except between Pablo and Caffrey Road. These design options show an approximate reduction in the excessively high PM_{10} concentrations of 10 to 20% on the rural segments and 25 to 40% where curbs and gutters will be installed. ~~PM_{10} concentrations are predicted to exceed NAAQS in the communities if winter sanding material is allowed to accumulate, but is 70% of NAAQS or less when chemical deicers are used.~~

Excessively high predicted PM_{10} concentrations with lane configurations B, C, and D are predicted to be within the NAAQS on all segments and all intersections with the highest concentration again predicted to occur between Pablo and Caffrey Road.

Indirect impacts due to temporary emissions of PM_{10} from construction activities will occur wherever construction occurs. These emissions will vary for each segment and proposed action with larger increases expected for locations with new ~~route~~roadbed construction and smaller increases for segments with only minor roadway improvement. Temporary emissions from construction activities will be larger for Lane Configurations B, C, and D than for Lane Configuration A. Construction activities are expected to generate the gaseous pollutants SO_x NO_x VOCs, CO, and other organic gases, and particulate emissions, including PM_{10} from the asphalt plants, the associated gravel crushers, and earth moving equipment and activities. Travel on unpaved surfaces will generate PM_{10} emissions. Impacts will be limited to the construction period and will be localized to the segment(s) under construction at the time. ~~Most of the construction will occur during the summer months when lower concentrations than those shown in Tables 7.7-6, 7.7-7 and 7.7-8 are expected from traffic sources.~~

Construction emissions from traffic can be mitigated by watering or by chemical stabilization of the unpaved sections of roadway which are used to handle traffic and by daily sweeping of the paved sections which are subject to accumulation of particulate material tracked from unpaved areas. Emissions from asphalt plants will be controlled with scrubbers and according to the control measures in the required air quality permit. Emissions from gravel crushers can be controlled by covering conveyors and stockpiles and by wetting. Erosion control measures will also mitigate wind-blown dust from disturbed areas. Wetting can control dust generated by earth moving activities. Short sections and a limited number of areas with unpaved surfaces at any one time will reduce the construction related impacts.

F.7.7.4. Arlee, Ronan and Polson Alignments

Lane configuration A (two-lane) is not substantially different from No Action for traffic related impacts for CO. Wider shoulders and the installation of curbs and gutters in Arlee and in portions of Ronan and Polson where they do not currently exist are part of lane configurations A, B, C, and D. These design options will help reduce PM_{10} impacts. ~~However, e~~Construction related emissions are expected to have a greater impact in the communities than on the other highway segments due to the proximity of homes, businesses, and the general population density.

Paving approaches and the installation of curbs and gutters reduces the predicted PM_{10} concentrations by approximately 34% for Lane Configuration A and by approximately 38% for the four-lane configurations at Arlee. The excessively high predicted PM_{10} concentrations are less than the NAAQS for all lane configurations at Arlee. Such a dramatic reduction is not predicted at Ronan and Polson because curbs and gutters exist over most of the segment under No Action.

It is assumed that Arlee Alignments 2, 3 and 4 will route 80% of the traffic around the community. Table F.7.7-~~68~~ shows these alternate alignments will reduce ambient CO concentrations by approximately 4~~6~~5% in the community but will increase concentrations in the rural areas by approximately ~~80~~65% over the background concentrations. Alternate alignments will reduce the ~~spring~~ PM_{10} concentrations in the community ~~by approximately one-half to less than the NAAQS when winter sand is allowed to accumulate. No exceedences are predicted when a chemical deicer is used~~. PM_{10} concentrations will increase in the rural areas yet the excessively high predicted concentrations are ~~approximately one third~~ ~~it will be less than 50%~~ of the allowable NAAQS. For alternatives 2, 3 and 4, both CO and PM_{10} concentrations are in compliance in the rural areas~~;~~ and in the community~~, CO and PM_{10} are in compliance year round when sand is allowed to accumulate on winter streets in the community and 80% of the traffic is routed around the community~~.

Similar trends are predicted at the intersection of US 93 and B Street in Arlee.

Arlee Alignment 2 passes between the town of Arlee and the existing railroad tracks. The potential exists for larger cumulative impacts from the highway and the railroad locomotives when these sources are upwind of Arlee. Arlee Alignment 3 passes east of the schools and creates greater impacts on the school children than the other alignment routes. Children and the elderly are more likely to suffer ill effects from air pollution than is the general population. Large construction impacts for the longer route of Arlee Alignment 4 will be generated in the rural environment.

In Ronan, Alignment 2 will route all traffic through the community on a pair of one-way streets. This alternative reduces the ~~maximum ambient~~predicted concentration of CO and PM_{10} when compared to No Action, CO remains in compliance at less than ~~one-tenth~~15% of the NAAQS and the excessively high predicted PM_{10} ~~exceeds~~is within the NAAQS ~~by approximately 2 times during the early spring if sand is used to provide winter traction on the community streets and allowed to accumulate. The use of a~~when chemical deicer is used ~~reduces PM_{10} concentrations to approximately 40% of the standard.~~ Alignment 2 passes near the school and a residential center that houses senior citizens. Children and the elderly are more likely to suffer ill effects from air pollution than is the general population. Indirectly, one-way couplets may impact receptors in addition to those along each route by introducing additional traffic to cross-connecting routes.

It is assumed that Ronan Alignments 3 and 4 will route 60% of the traffic around the community. Table F.7.7-~~79~~ shows that ~~n~~either of these alternatives will reduce the CO concentrations by approximately 45 to 50% (depending on the lane configuration) and the PM_{10} concentrations by approximately 50% in the community. The excessively high predicted PM_{10} concentrations are within the NAAQS in the community and in the rural areas ~~change the status of the air quality in either the community or the rural areas.~~ These alternatives will reduce ambient concentrations of both pollutants in the community and will increase them in the rural areas. The rural areas will remain ~~in compliance~~well below the NAAQS for both CO and PM_{10}.

Similar trends are observed at the intersection of US 93 and Round Butte Road (MTS 211) in Ronan.

Three highway segments (N,O, and P) lie within the Polson area. Segment O represents the community while Segments N and P are considered rural highways. Alignments 2 and 3 are expected to reduce traffic by 40% on Segment N, by 30% on Segment O and not to affect traffic levels on Segment P. (Sections 6.1 and 7.1)

CO impacts on the existing alignment for any lane configuration fall within the allowable NAAQS with the highest concentrations (approximately 55 to 65% of the NAAQS) predicted at the unsignalized intersections in Polson. A

wider lane configuration results in less in congestion and lower CO concentrations. Predicted CO concentrations on the rural segments near Polson are approximately 10 to 25% of the NAAQS, depending on the lane configuration.

The excessively high predicted PM_{10} concentrations fall within the NAAQS on the rural segments near Polson with four-lanes reducing the predicted concentration by approximately 10% or less. The predicted PM_{10} concentrations in the community are approximately the same or slightly higher at the intersections than in the free flowing traffic areas.

Impacts related to Polson Alignments 2 and 3 are not substantially different from each other with the southern portion of both alternate alignments being identical and the western portion of Alignment 2 passing east of the rodeo grounds while the western portion of Alignment 3 passes west of the airport. ~~CO concentrations are less than 25% of NAAQS for all alignments on all segments in the Polson area.~~ Alignment 2 or 3 reduces CO concentrations in the community by approximately 4% for the existing lane configuration and by approximately 23% for a wider lane configuration~~15 to 20%, depending on the lane configuration of Segment O~~. All alignments and all lane configurations show the excessively high predicted PM_{10} concentrations to be less than ~~66% of~~the NAAQS at all locations except on Segment O. A wider lane configuration reduces the predicted concentration by approximately 6% on Segment O and the bypass reduces the predicted concentration by approximately 24%. ~~Exceedences on Segment O are limited to the scenario which allows winter sanding material to accumulate on community streets. The use of a chemical deicer and clean sand, as is the current practice on US 93 in Polson reduces PM_{10} concentrations to 70% of NAAQS.~~ It is assumed that sand will be used during the winter on the rural Segments N and P in the Polson area and chemical deicer usage will be ~~limited to~~used on Segment O.

Impacts in the rural area due to a bypass will include increased CO and PM_{10} concentrations. The predicted CO concentration is approximately 10 to 12% of the NAAQS, depending on the lane configuration used. The excessively high predicted PM_{10} concentration is approximately one-third of the NAAQS and less than the predicted impact on any other segment of the highway for all alternatives.

Some impacts cannot be quantified by the screening level modeling effort. These include increased emissions in the communities as congestion increases. Limited parking will result in vehicles idling while waiting for a parking space or driving in a repetitive pattern looking for a parking space. Increased idling emissions will result as vehicles wait to access US 93. Traffic signals also have the effect of increasing gaseous emissions as traffic flow is interrupted. PM_{10} emissions also increase because the reduced traffic speeds do not flush particulates out of the driving lanes as effectively. If sanding material is applied where vehicles must stop, this material will be ground to respirable particulates when the roadway is dry. The use of additional chemical deicer does not impact air quality. Flashing traffic signals will create smaller impacts than will stop and go traffic signals. Slightly elevated roadways over pedestrian underpasses aid in the dispersion of vehicular emissions. Vehicular underpasses provide a tunnel where gaseous emissions may tend to accumulate.