ENVIRONMENTAL ASSESSMENT

for

STPP 69-1(9)22

Boulder-South

(CN 2019)

in

Jefferson County, Montana

January 2011

MONTANA DEPARTMENT OF TRANSPORTATION MDT

U.S. Department of Transportation Federal Highway Administration

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This document is prepared in conformance with the Montana Environmental Policy Act (MEPA) requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with National Environmental Policy Act (NEPA) requirements for an Environmental Assessment under 23 CFR 771.119, and Section 4(f) of the U.S. Department of Transportation Act under 23 CFR 771.135.

Submitted pursuant to 42 U.S.C. 4332(2)(c), 49 U.S.C. 303, Sections 75-1-201 & 2-3-104, M.C.A.,

and Executive Orders 11990, 11988, and 12898, by the

U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION

AND THE

MONTANA DEPARTMENT OF TRANSPORTATION

Submitted by: _____ Date: 1/20/11

Montana Department of Transportation
Environmental Services Bureau

Reviewed &
Approved
for Distribution: Jeffrey A Patten Date: 1/20/11

U.S. Department of Transportation
Federal Highway Administration

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Abstract: The proposed project is a highway safety project initiated by the Montana Department of Transportation (MDT). The Proposed Action is the rehabilitation/reconstruction and widening of approximately six miles of roadway. The Preferred Alternative improves roadway geometry and provides a total top width of 34 feet.

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EXECUTIVE SUMMARY

The proposed project is located in Jefferson County on Montana State Primary Route 69 (MT 69). It begins at mile post (MP) 31.8± and extends to the north approximately six miles, ending at MP 37.5± just south of Boulder. The proposed project would widen the existing MT 69 alignment from MP 31.8± to MP 37.5± and update the roadway design to current standards to address the lack of shoulders and steep side slopes.

Purpose and Need for the Proposed Action

The purpose of rehabilitation/reconstruction and widening of MT 69 is to improve safety for users of the project corridor while mitigating project impacts to the surrounding natural and built environments.

There is a need for this project due to the safety concerns in the Boulder corridor. Over the period January 1, 1998 through December 31, 2007 for the portion of MT 69 from MP 31.8± to MP 37.5±, the all-vehicle crash rate and the all-vehicle severity rate were respectively 44 percent and 17 percent greater than the statewide average for rural state primary highway systems. Additionally, the percentage of crashes involving trucks over this portion of MT 69 was approximately 27 percent greater than the percentage of crashes involving trucks for rural state primary highways over the same time period. There have been 23 injuries and one fatality during the period from 1998 through 2007.

Alternatives Evaluation and Identification of Preferred Alternative

The following two project alternatives were considered in this Environmental Assessment (EA):

- The **No Build Alternative** would essentially maintain existing conditions along the entire length of the project corridor by providing routine maintenance.
- The **Build Alternative** would involve rehabilitation/reconstruction and widening of the existing top width from 26.2± feet to 34± feet over the project limits.

Based on its ability to meet the project Purpose and Need, the Build Alternative is forwarded as the Preferred Alternative for improvements in the MT 69 corridor.

Three additional Build Alternatives were initially considered for this project in an Alternatives Analysis document completed in December 2009, including a Spot Improvements Alternative, an Eastern Alignment Alternative, and a Western Alignment Alternative. For the reasons articulated in the Alternatives Analysis, these three alternatives were eliminated from further consideration and were not carried forward into this EA. The Alternatives Analysis document is available from MDT upon request.

Based on public request, the Citizens' Alternative and two elevated structure alternatives were also considered, but were eliminated from further consideration as stand-alone alternatives due to their inability to address the safety concerns in the corridor and high cost, respectively. It should be noted, however, that some elements of these eliminated alternatives will be considered as part of the Build Alternative, including a pedestrian/bicycle facility and animal crossing measures.

Impacts and Mitigation

The following resources would not be permanently or temporarily impacted by this project:

- Land Use
- Community Resources
- Local and Regional Economies
- Environmental Justice
- NL&WCF – Section 6(f) Lands
- Hazardous Materials

Table ES.1 presents a summary of anticipated permanent impacts and mitigation strategies; more detailed descriptions of permanent impacts and mitigation measures are presented later in the document.

Table ES.1 Summary of Anticipated Permanent Impacts and Proposed Mitigation Measures

Resource	Permanent Impacts	Mitigation Commitments
Traffic	No permanent traffic impacts are anticipated.	No mitigation is proposed or required.
Access	Existing access points may be modified.	Access points would be perpetuated, and modifications would be negotiated with property owners.
Safety	No adverse safety impacts are anticipated; safety performance is expected to improve due to the wider paved surface and flatter side slopes.	No mitigation is proposed or required.
Pedestrians & Bicyclists	Removal of the currently non-functional pedestrian underpass will not result in an adverse impact to pedestrians or bicyclists. The project would provide a shoulder width suitable for bicycle use in accordance with American Association of State Highway and Transportation Officials (AASHTO) guidelines.	No mitigation is proposed or required.
Right-of-Way and Relocations	There would be private right-of-way acquisitions under the Preferred Alternative, although there would be no residential or business relocations.	Lands needed for right-of-way under the Preferred Alternative which are in private ownership would be acquired in accordance with both the *Uniform Relocation Assistance and Real Property Acquisition Act* of 1970 (P.L. 91-646), and the *Uniform Relocation Act Amendments* of 1987 (P.L. 100-17). Fencing and mailbox turnouts will be provided according to MDT policy.
Utilities	Utilities identified within the corridor are expected to be relocated. No adverse impacts to utilities are expected to occur.	No mitigation is proposed or required.

Resource	Permanent Impacts	Mitigation Commitments
Cultural / Archeological / Historic Resources	Although up to 300 feet of the three-mile-long State Ditch would be rechanneled, this work would result in **No Effect** because the ditch would continue to function in its historic capacity and there would be no change in the existing alignment of the ditch, its dimensions, setting, use, or appearance. The Little Boulder River Bridge does not meet current design standards and therefore would be replaced with another bridge in approximately the same location. This action would constitute an **Adverse Effect**.	No mitigation would be required for the State Ditch. Mitigation for the Little Boulder River Bridge is addressed under the Historic Roads and Bridges Programmatic Agreement.
Noise	No permanent noise impacts are anticipated as a result of the proposed project.	No mitigation is proposed or required.
Farmlands	Roadway widening would result in the conversion of approximately five acres of farmland classified as Prime Farmland if Irrigated to non-productive use near MP 33.6±.	No mitigation is proposed or required (Appendix B).
Abandoned Structures	The currently non-functional pedestrian underpass structure will be removed, and will not be replaced due to the existing high water table and accessibility issues in this location. The structure as it exists was non-functional prior to the proposed project. MDT will investigate irrigation crossings to determine if they need to be perpetuated or if they can be abandoned.	No mitigation is proposed or required.
Visual Resources	The project would result in the permanent loss of trees and other vegetation due to the widened roadway footprint and the need to improve safety and sight distance.	To soften the view shed, MDT will revegetate and replant trees in appropriate locations where a single line of trees within the construction limits must be removed.

Resource	Permanent Impacts	Mitigation Commitments
Floodplains	Existing hydraulic conditions would be maintained or improved throughout the corridor through the installation of new conveyance structures developed in coordination with appropriate resource agencies. Impacts from new conveyance structures would be designed to have no detrimental impact on the flood risk in the corridor.	No mitigation is proposed or required. MDT will secure and adhere to the floodplain permit.
Water Resources / Quality	In general, there would be an increase in the total surface area of paved road, which would decrease the overall permeability of substrate and increase the rate and quantity of surface water runoff from the roadway. The minor increase in paved surface area would result in a negligible increase in runoff in the watershed.	MDT will shift the alignment in the locations identified in Table 2.1 in order to avoid project-related encroachment of the road into the Boulder River. MDT will follow the Permanent Erosion and Sediment Control Design Guidelines (October 2010) in identifying appropriate permanent erosion and sediment control measures and determining which measures can practicably be incorporated into the design. MDT will design the bridge over the Little Boulder River to eliminate deck drainage directly into adjacent state waters.
Wetlands	The extent of unavoidable impacts to wetlands resources will be determined by the final alignment and construction limits. MDT estimates that total wetland impacts resulting from the project will be less than 20 acres. Final quantitative impacts will be determined once the final alignment and construction limits have been determined.	MDT will shift the alignment in the locations identified in Table 2.1 in order to minimize project-related encroachment of the road into adjacent wetlands. The project design team has made and will continue to make all practicable efforts to avoid and minimize wetlands impacts. MDT is required to mitigate for permanent wetland impacts, regardless of USACE jurisdiction under E.O. 11990 (No Net Loss). Consultation with the USACE will be necessary to determine acceptable mitigation sites.
Vegetation	The project would result in the permanent loss of trees and other vegetation due to the widened roadway footprint.	MDT will shift the alignment and use non-standard fill slopes in the locations identified in Table 2.1 in order to minimize project-related ground disturbance. MDT will re-seed disturbed soil and replant trees in appropriate locations.

Resource	Permanent Impacts	Mitigation Commitments
Wildlife and Migratory Birds	Widening of the road surface may reduce or alter some wetland habitats, thereby impacting birds, mammals, and amphibians that rely on this habitat for breeding, forage, or travel. These are anticipated to be sliver impacts on large wetland complexes that extend far beyond the highway corridor.	As documented in the list of commitments and considerations in Section 2.2, the Preferred Alternative will minimize the roadway footprint and associated impacts to existing wildlife habitat to the extent practicable. MDT will implement appropriate combinations of wildlife mitigation strategies, including wildlife friendly fencing and vegetation management facilitating at-grade crossings at desired locations with additional signing and barrier fencing around curves and in areas with limited roadside visibility. MDT is pursuing experimental application of an electro-mat feature in association with at-grade crossings for wildlife, facilitated by a combination of barrier and wildlife friendly fencing. MDT will continue to evaluate this technology for use within the Boulder-South corridor and incorporate it if appropriate. If overhead power lines are relocated during construction, they will be raptor-proofed in accordance with MDT policies.
Aquatic Species	Widening of the road surface may reduce or alter riparian vegetation along the river channel, which may disrupt the river channel dynamics and increase sedimentation during stormwater runoff events, thereby impacting aquatic species.	MDT will shift the alignment in the locations identified in Table 2.1 in order to avoid project-related encroachment of the road into the Boulder River.
Species of Concern	The project is not anticipated to adversely affect any Species of Concern.	No mitigation is proposed or required.
Threatened and Endangered Species	The project is not likely to adversely affect any Threatened or Endangered species or its habitat.	No mitigation is proposed or required.
Air Quality	No permanent air quality impacts are anticipated as a result of this proposed project.	No mitigation is proposed or required.

Table ES.2 presents a summary of anticipated temporary construction impacts and mitigation strategies; more detailed descriptions of temporary impacts and mitigation measures are presented later in the document.

Table ES.2 Summary of Anticipated Temporary Impacts and Proposed Mitigation Measures

Resource	Temporary Impacts	Mitigation Commitments
Traffic	Construction activities from the Preferred Alternative would likely cause temporary impacts to traffic flow, especially in relation to the removal of the existing bridge and construction of the new bridge crossing the Little Boulder River. MDT may consider a temporary closure, phased construction, or a temporary detour in order to accommodate construction activities, including blasting and bridge construction activities.	Traffic interruptions would be minimized to the extent practicable. Advance warning and detour signing would be in accordance with the Manual on Uniform Traffic Control Devices. Blasting activities would be conducted in accordance with the Controlled and Production Blasting guidelines contained in MDT's Special Provisions.
Right-of-Way and Relocations	Right-of-way in the form of an easement or construction permit would need to be obtained from the State of Montana, USFS, and BLM.	No mitigation is proposed or required.
Utilities	Utility relocations will be required and may result in temporary outages for utility customers.	Utility relocations would be coordinated with the lines' owners and done prior to this proposed project's construction. Notification of service interruptions due to these relocations would be the responsibility of these utility lines' owners.
Noise	Construction activities could occasionally result in noise due to the use of heavy machinery.	The contractor would be subject to all applicable laws and regulations and all requirements contained in the contract regarding noise pollution.
Abandoned Structures	Existing irrigation crossings would be temporarily impacted.	MDT will coordinate with ditch owners during construction to ensure there would be no disruption of irrigation service as a result of the project.
Visual Resources	Construction activities would result in the temporary loss of some vegetation.	Techniques would be employed, if practicable, to mitigate the visual impact of typical brush and tree clearing that would provide a random, meandering woodline edge, as opposed to a linear woodline edge. Disturbed areas would be reseeded with desirable vegetation. To soften the view shed, MDT will revegetate and replant trees in appropriate locations where a single line of trees within the construction limits must be removed to improve safety and sight distance.

Resource	Temporary Impacts	Mitigation Commitments
Floodplains	The proposed project would involve construction within the 100-year floodplain. A floodplain permit may be required for construction activities and temporary facilities associated with this project.	As necessary, the contractor will obtain the appropriate permit and adhere to the conditions.
Water Resources / Quality	There is potential for short-term water quality impacts due to increased erosion and sedimentation during construction activities. During construction, surface water runoff could be contaminated by spills of petroleum products, lubricants, and hydraulic fluid from construction equipment.	In accordance with MDT standard specifications, the contractor will be required to prevent or reduce water quality impacts caused by sediment or petroleum contaminated run-off. The construction contractor will obtain authorization under the construction General Storm Water Discharge Permit from DEQ and will prepare and adhere to their Storm Water Pollution Prevention Plan (SWPPP).
Vegetation	Construction activities would result in the temporary loss of some vegetation.	Techniques would be employed, if practicable, to mitigate the visual impact of typical brush and tree clearing that would provide a random, meandering woodline edge, as opposed to a linear woodline edge. The area will be replanted with desired species in accordance with current MDT construction specifications. To soften the view shed, MDT will replant trees in appropriate locations where a single line of trees within the construction limits must be removed to improve safety and sight distance.
Noxious Weeds	Construction activities could spread weed seed and/or roots to new areas.	All construction activities are required to comply with the Montana Noxious Weed Law; MDT Standard Specification 107.11.5, titled Noxious Weed Management; follow the requirements of the Noxious Weed Management Act, Title 7, Chapter 22, Part 21; other BMPs; and Jefferson County requirements. The area will be replanted with desired species in accordance with current MDT construction specifications.
Wildlife and Migratory Birds	Construction activities could temporarily disturb wildlife and migratory birds, although more mobile species such as adult birds, elk, moose, large carnivores, and other large and mid-size mammals generally move to adjacent habitats to avoid direct mortality from construction activities.	No mitigation is proposed or required.

Resource	Temporary Impacts	Mitigation Commitments
Aquatic Species	Potential impacts to fisheries resources may result from disruption of the river channel dynamics, removal of riparian vegetation along right-of-way, and sedimentation during the construction process and stormwater runoff events.	In accordance with MDT standard specifications, the contractor will be required to prevent or reduce water quality impacts caused by sediment or petroleum contaminated run-off. The construction contractor will obtain authorization under the construction General Storm Water Discharge Permit from DEQ and will prepare and adhere to their Storm Water Pollution Prevention Plan (SWPPP). Construction activities will be in compliance with the conditions of the SPA 124 (FWP) and the CWA 404 (USACE), which may include instream timing restrictions to minimize impacts to the fishery.
Species of Concern	It is not likely that this project will jeopardize the wolverine, western spotted skunk, or gray wolf. These species are highly mobile and will likely avoid human activity during construction. Potential impacts to westslope cutthroat trout may result from disruption of the river channel dynamics, removal of riparian vegetation along right-of-way, and sedimentation during the construction process and stormwater runoff events. With regard to the bald eagle, human activity may cause adults to abandon nest, exposing young to risk of mortality.	MDT and the contractor will follow permitting conditions, which may include timing restrictions that protect westslope cutthroat trout. To minimize impacts to actively nesting birds in the project area, contractors will follow suggested timing restrictions for activities likely to cause disturbance, including blasting, structure and vegetation removal. The large perching trees near the Boulder River will be avoided during the critical periods as defined in Table 3.7; however, it is unlikely that any of these trees will need to be cleared during this project.
Threatened and Endangered Species	No adverse impacts are anticipated.	No mitigation is proposed or required.
Air Quality	Construction activities could occasionally and temporarily result in road dust and combustion emissions due to the use of heavy machinery and generators.	In accordance with MDT Standard Specifications, the contractor will be required to operate all equipment to meet the minimum air quality standard established by federal, state, and local agencies.

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Abbreviations and Acronyms

± ..... approximately
AASHTO..... American Association of State Highway and Transportation Officials
ADA ..... Americans with Disabilities Act
BLM ..... Bureau of Land Management
BMPs ..... Best Management Practices
BRR ..... Biological Resources Report
CFR ..... Code of Federal Regulations
CWA ..... Clean Water Act
DEQ..... Montana Department of Environmental Quality
DNRC ..... Montana Department of Natural Resources and Conservation
DPS ..... distinct population segment
EA..... Environmental Assessment
E.O. ..... Executive Order
EPA ..... United States Environmental Protection Agency
ESA ..... Endangered Species Act
FHWA..... Federal Highway Administration
FPPA ..... Farmland Protection Policy Act
FWP ..... Montana Fish, Wildlife & Parks
MBEWG ..... Montana Bald Eagle Working Group
MCA ..... Montana Code Annotated
MDT..... Montana Department of Transportation
MEPA ..... Montana Environmental Policy Act
MFISH ..... Montana Fisheries Information System
MNHP..... Montana Natural Heritage Program
MP ..... Mile Post
MPDES..... Montana Pollutant Discharge Elimination System
mph ..... miles per hour
MT 69 ..... Montana State Primary Route 69
MSATs..... Mobile Source Air Toxics
NEPA..... National Environmental Policy Act
NL&WCF ..... National Land and Water Conservation Fund
NPDES ..... National Pollutant Discharge Elimination System
NRHP ..... National Register for Historic Places
NRIS..... Natural Resource Information System
NRM ..... Northern Rocky Mountains
PFRR..... Preliminary Field Review Report
RP ..... Reference Post
SAFETEA-LU ..... Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SHPO ..... State Historic Preservation Office
SSD ..... Stopping Sight Distance
SPA ..... Stream Protection Act
SWPPP ..... Storm Water Pollution Prevention Plan
TMDL..... Total Maximum Daily Load
USACE ..... United States Army Corps of Engineers
U.S.C. ..... United States Code
USFS..... United States Forest Service
USFWS ..... United States Fish and Wildlife Service
USGS ..... United States Geological Survey

1.0 Purpose of and Need for the Proposed Action

1.1 Project Description

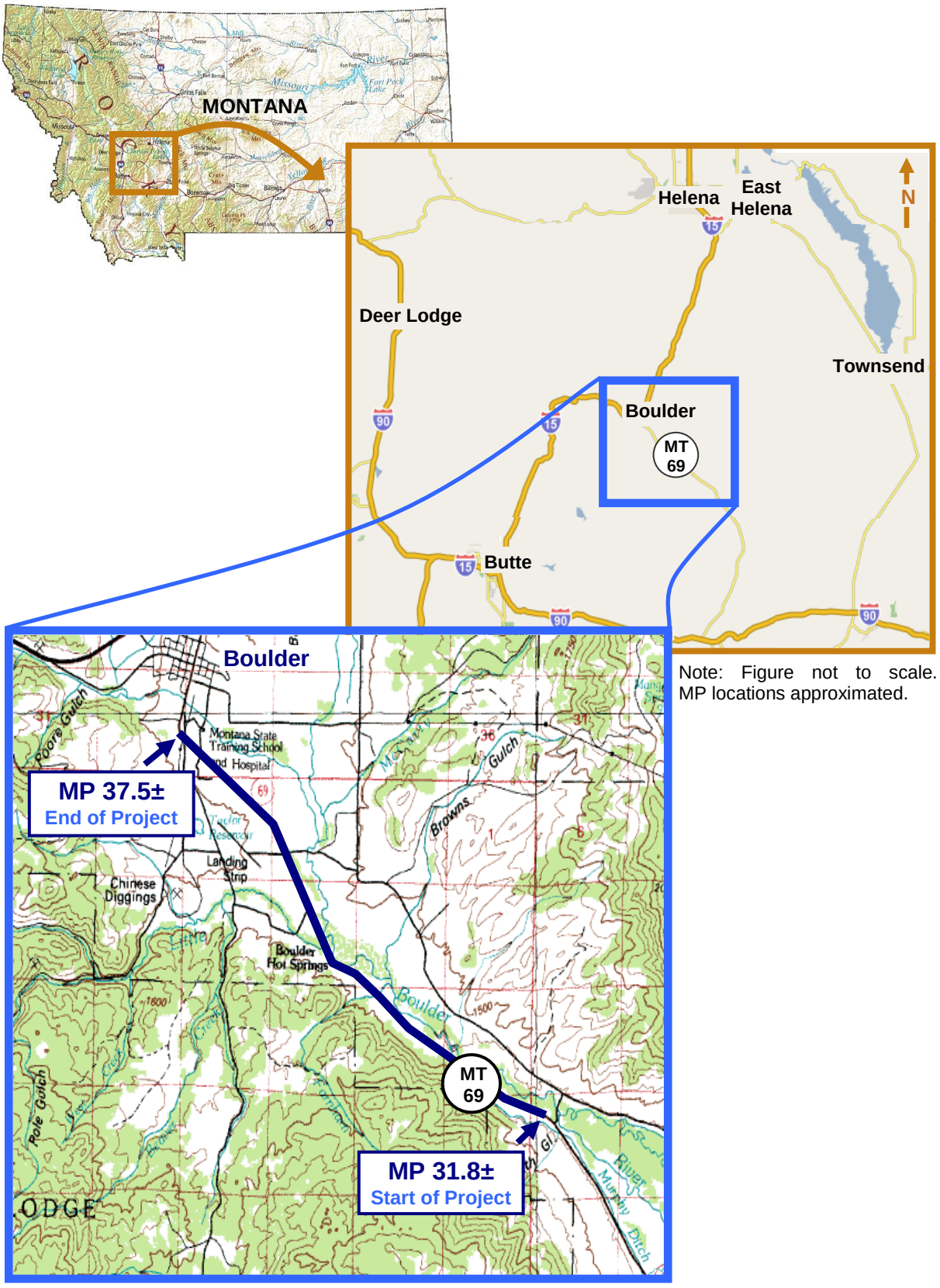
Proposed Project Area Description

The proposed project is located in Jefferson County on Montana State Primary Route 69 (MT 69). It begins at mile post (MP) 31.8± and extends to the north approximately six miles, ending at MP 37.5± just south of Boulder.

As shown in Figure 1-1, the proposed project is located within the following legal description(s):

Township	Range	Section(s)
5 N	3 W	18, 19
5 N	4 W	2, 3, 4, 10, 11, 13, 14, 24
6 N	4 W	32, 33

Figure 1-1 Project Area



Note: Figure not to scale. MP locations approximated.

Proposed Action

This proposed project would widen the existing MT 69 alignment from MP 31.8± to MP 37.5± and update the roadway design to current standards to address the lack of shoulders and steep side slopes.

The project's southern terminus at MP 31.8± will connect with the separate overlay and widen project over the southern portion of the corridor. The project's northern terminus at MP 37.5± is intended to tie into the recently completed Boulder-Main Street project, which included replacing the bridge over the Boulder River. Accordingly, MDT and FHWA have determined that these end points represent logical termini for this proposed project.

1.2 Purpose of the Proposed Action

The purpose of rehabilitation/reconstruction and widening of MT 69 is to improve safety for users of the project corridor while mitigating project impacts to the surrounding natural and built environments.

1.3 Need for the Proposed Action

There is a need for this project due to the safety concerns in the Boulder corridor. Over the period January 1, 1998 through December 31, 2007 for the portion of MT 69 from MP 31.8± to MP 37.5±, the all-vehicle crash rate and the all-vehicle severity rate were respectively 44 percent and 17 percent greater than the statewide average for rural state primary highway systems. Additionally, the percentage of crashes involving trucks over this portion of MT 69 was approximately 27 percent greater than the percentage of crashes involving trucks for rural state primary highways over the same time period. There have been 23 injuries and one fatality during the period from 1998 through 2007.

Single vehicle off-road accidents resulting in overturn are of particular concern in this corridor. Of the crashes that occurred during the period January 1, 1998 through December 31, 2007, nearly 73 percent (37 out of 51) involved single vehicles. Of these, 30 percent (11 out of 37) resulted in overturn. An additional crash involving two vehicles also resulted in overturn. Speed was indicated as a factor in six of the 51 total crashes and one-third of the rollover crashes over the reporting period.

Conflicts with wild and domestic animals is another cause of crashes in the project corridor. Of the crashes over the period January 1, 1998 through December 31, 2007, just over 21 percent (or 15 crashes out of 51 total crashes) involved collisions with animals. Of these 15 crashes, one-third (or 5 out of 15) involved domestic animals, while the remaining two-thirds (or 10 out of 15) involved wild animals.

Factors appearing to contribute to these types of crashes on MT 69 include narrow to non-existent shoulders, insufficient sight distance, periodic icing, and steep fill slopes throughout the project corridor.

In addition to the high incidence of crashes on MT 69, the roadway is overdue for rehabilitation. This means that the pavement surfacing and roadway base have begun to deteriorate and will continue to do so if no improvements are made.

1.4 Enhancement Opportunities

During a Public Scoping Meeting held on June 1, 2005, a public information meeting held on March 23, 2010, and Agency Coordination Meetings held on July 30, 2008, December 17, 2008, and November 20, 2009, meeting attendees expressed concern about potential impacts to the natural environment that may result from the proposed project. Specifically, meeting attendees noted potential for impacts to the Boulder River channel, water quality, wildlife and habitat, wetlands, floodplains, and fisheries and requested that the following efforts be considered:

- Maintain integrity of and minimize encroachment on river channel
- Minimize impacts to water quality
- Minimize impacts to riparian habitat and seek opportunities to improve wildlife movement across highway
- Minimize impacts to wetlands
- Minimize impacts to floodplains
- Minimize impacts to fisheries and improve/retain recreation access

These concerns are considered in Chapter 2 in the identification and development of mitigation measures that could be used to protect and enhance the surrounding area.

2.0 Alternatives

This chapter describes the alternatives that were developed for the proposed Boulder - South project and identifies the Preferred Alternative.

2.1 Development of Alternatives

Through public involvement activities and interdisciplinary coordination with federal, state, and local transportation officials and resource agencies, four Build Alternatives were developed and analyzed in an Alternatives Analysis completed in 2009. The Alternatives Analysis is incorporated into this Environmental Assessment (EA) by reference.

As documented in the Alternatives Analysis, rehabilitation/reconstruction and widening of the existing MT 69 alignment is the only reasonable and practicable alternative in this portion of MT 69 that is able to satisfy the project Purpose and Need. For the reasons articulated in the Alternatives Analysis and summarized in Section 2.4, the three other Build Alternatives were eliminated from further consideration.

Following completion of the Alternatives Analysis, only the No Build and a single Build Alternative have been forwarded for detailed analysis.

The **No Build Alternative** would essentially maintain existing conditions along the entire length of the project corridor by providing routine maintenance. There would be no improvement in safety since the roadway width and other geometric features would remain unchanged.

The **Build Alternative** would involve rehabilitation/reconstruction and widening of the existing MT 69 roadway. This alternative would widen the existing alignment over the portion of MT 69 from MP 31.8± to MP 37.5± and improve several non-standard features. Specifically, this alternative would provide updated shoulder widths and side slopes.

Under this alternative, the roadway's top width would be widened from the existing 26.2± feet to 34± feet. The MDT Route Segment Plan recommends a minimum top width of 32 feet for MT 69. Since 1996, it has been MDT policy to add two feet of width on reconstruction projects in order to provide sufficient width for a future overlay with standard slopes and still maintain Route Segment Plan width.

In an effort to minimize impacts to natural resources, MDT initially considered a 32-foot top width. It was determined that the savings in wetland impacts (less than one acre) were not substantial enough to justify the loss in safety benefits that would result from a narrower top width. Accordingly, a 34-foot top width was selected for this project.

Under the Build Alternative, the new roadway would generally conform to Non-National Highway System Primary Minor Arterial standards where practicable, including 6:1 inslopes, 10 feet of 20:1 ditch, and standard cut and fill slopes, although these standards would be evaluated

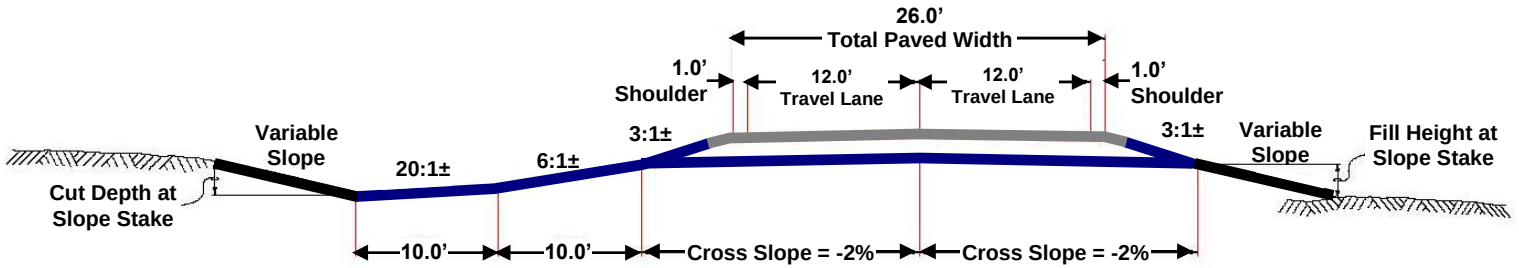
relative to environmental impacts in sensitive areas along the Boulder River corridor, and deviations from standards would be used where appropriate.

Figure 2-1 presents conceptual cross sections for the existing and proposed roadways in order to illustrate the wider shoulders and flatter side slopes of the proposed cross section as compared to the existing cross section. It should be noted that there is some variance in cross section elements on the existing roadway over the length of the project corridor. It should also be noted that the proposed cross section does not account for adjustments to the vertical elevation of the roadway; the necessity of a grade raise would be determined later in the design of the project.

Figure 2-2 presents four design options for a ten-foot wide pedestrian/bicycle facility that would run along the MT 69 alignment over a portion of the Boulder corridor yet to be determined. Design Option A would entail construction of a 10-foot wide shoulder adjacent to the travel lane. Design Option B would entail construction of a pathway directly adjacent to the shoulder. Under Design Option C, the pathway would be physically separated from the paved roadway surface, but would still be located on the fill slope within the project's construction limits. Design Options A, B and C would fall within the project construction limits and would not result in further impacts to natural resources beyond those disclosed in this document. Under Design Option D, a separated pathway would be located entirely outside the project's construction limits. A combination of Design Options A, B, and C may be appropriate over portions of the corridor to minimize impacts to resources and accommodate water body crossings; for the reasons discussed in Section 2.2 Design Option D will not be included as part of this project and would need to be pursued at the local level. It should be noted that these design options are not shown in Figure 2-1, which is only intended to illustrate the shoulder and side slope variations between the existing and proposed roadway.

Figure 2-1 Existing and Proposed Cross Sections

Existing Cross Section



Proposed Cross Section

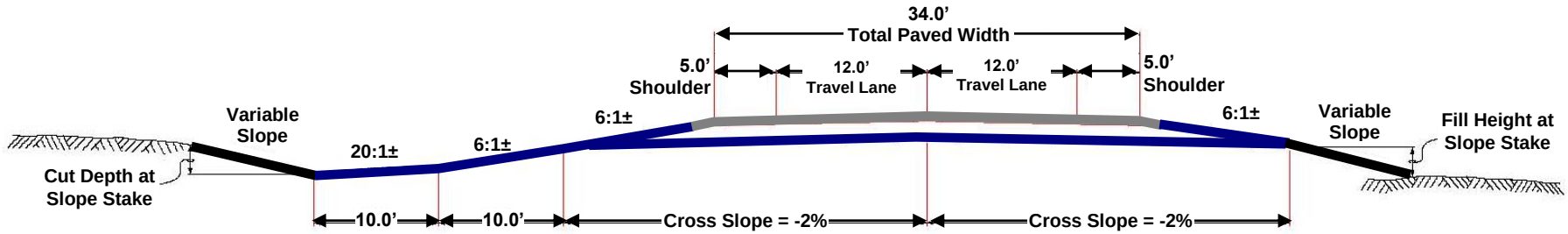
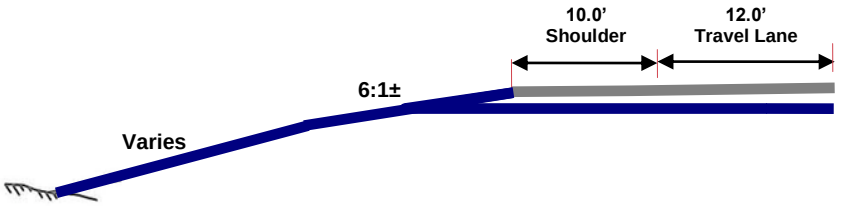
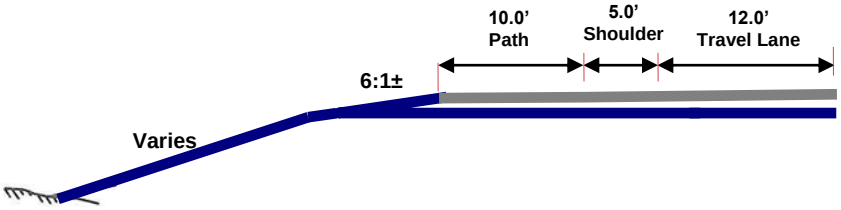


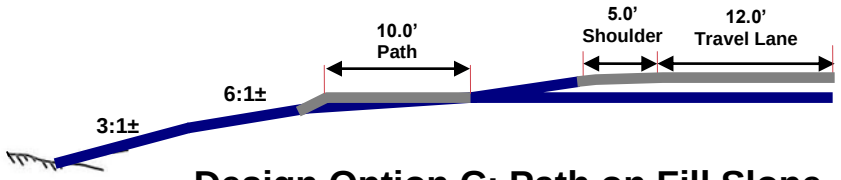
Figure 2-2 Pedestrian/Bicycle Facility Design Options



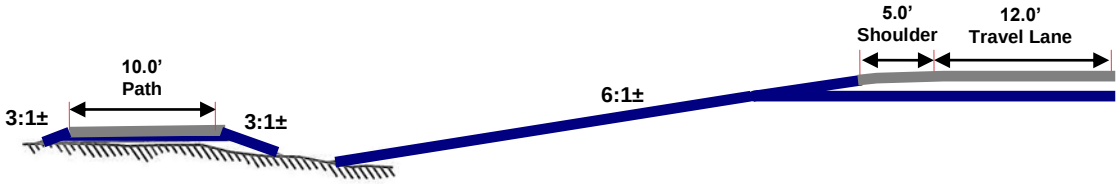
Design Option A: 10-foot Shoulder



Design Option B: Shoulder-Adjacent Path



Design Option C: Path on Fill Slope



Design Option D: Path Separated from Reconstruction

2.2 Alternatives Evaluation

Because the existing roadway would remain unchanged under the No Build Alternative, there would be no improvements to safety within the project corridor. In accordance with National and Montana Environmental Policy Act (NEPA/MEPA) requirements, the No Build Alternative was forwarded as a baseline for comparative analysis and as a viable option if the impacts from the Build Alternative appear to outweigh the benefits of the proposed project.

The Build Alternative would widen the existing roadway and improve non-standard features. As noted in the Alternatives Analysis document, the results of the safety and operational crash model developed for this project showed that a new roadway template including five-foot shoulders and side slopes flatter than 4:1 would result in a 41 percent decrease in crashes in the design year (2032) as compared to current conditions (2008). Accordingly, the Build Alternative meets the Purpose and Need for the proposed project and is carried forward for more detailed analysis.

Impact Minimization Efforts

Members of the public who attended the June 2005 Public Scoping Meeting and the March 2010 Public Information Meeting and resource agency representatives who attended the July 2008, December 2008, and November 2009 Agency Coordination Meetings expressed concern for natural resources through the Boulder River corridor, including the river channel, water quality, wildlife and habitat, wetlands, floodplains, and fisheries.

In an effort to minimize anticipated impacts, the Project Team is exploring refinements of the conceptual design for the Build Alternative. In some cases, the Project Team has committed to implementing certain minimization efforts, while other efforts will remain under consideration as the project progresses through final design. Commitments and considerations to reduce project-related impacts are listed below in Table 2.1.

Table 2.1 Minimization Commitments and Considerations

Minimization Commitments	Minimization Considerations

• Use non-standard fill slopes where appropriate in order to reduce the footprint of the roadway
  ○ Locations where non-standard fill slopes have been implemented include:
  ▪ MP 32.3 to 32.7 (ditch avoidance)
  ▪ MP 32.5 to 32.7 (river avoidance)
  ▪ MP 33.4 to 33.5 (ditch avoidance)
  ▪ MP 34.8 to 34.9 (ditch avoidance)
  ▪ MP 34.5 to 34.7 (river avoidance)
• Shift the alignment in order to avoid or minimize project-related encroachment of the road into the Boulder River and adjacent wetlands and ditches
  ○ Locations where alignment shifts have been implemented include:
  ▪ MP 32.3 to 32.4 (wetland avoidance)
  ▪ MP 32.5-32.7 (river avoidance)
  ▪ MP 34.8 to 34.9 (ditch avoidance)
  ▪ MP 34.5-34.7 (river, wetland, and pond avoidance)
  ▪ MP 36.0 to 36.5 (ditch avoidance)
• Incorporate pedestrian/bicycle facility within the project construction limits by using non-standard slopes in order to minimize impacts to adjacent areas.
• Minimize width of rock catchment ditches to the extent practicable to minimize footprint
• Use guardrail to allow steepened slopes in appropriate locations where the roadway closely parallels water bodies
• Implement revegetation plan that includes improved woody vegetation component adjacent to river in appropriate locations
• Use appropriate deck and rail design on the Little Boulder River bridge structure to reduce or eliminate deck drainage directly into the water body
• Implement appropriate combinations of wildlife mitigation strategies, including wing fencing, barrier fencing, wildlife-friendly fencing, signing, and vegetation management to encourage or discourage at-grade crossing movement in appropriate locations
• Size bridge structure and culverts appropriately to avoid or minimize encroachment into the active channel, facilitate floodplain connectivity, allow for bedload and natural sediment transport, and to pass aquatic organisms and wildlife, as appropriate
	• Install retaining walls or other stabilization structures where the roadway is immediately adjacent to the river's edge to reduce encroachment into the river channel
	• Install bioengineered bank stabilization measures in appropriate locations
	• Adjust roadway grades to reduce the roadway footprint
	• Use structure enhancements to provide wildlife crossing opportunities, including adjusting the dimensions of the bridge over the Little Boulder River and appropriately sizing culverts to allow small animal movement, where practicable
	• Install an animal detection system with flashing lights to warn drivers of animal movement in appropriate at-grade crossing locations
	• Construct berms, sediment control basins, catchment areas, or vegetated swales as appropriate to reduce water quality impacts

As a result of the minimization commitments noted above, the proposed Boulder – South project will not encroach into the Boulder River.

Design Options

As noted in Section 2.1, four design options for a pedestrian/bicycle facility are being considered in the Boulder corridor. Design Options A, B, and C fall within the construction limits of the Boulder – South rehabilitation/reconstruction project and therefore either a single independent option or a combination of the three options could be included as part of the project. Because of their location inside the project's construction limits, these three options would not result in any additional impacts to resources within the corridor and would not require any additional right-of-way above what would otherwise be needed for the project.

Design Option D would be located outside the project's construction limits and is considered outside the scope of the project. The Boulder – South project does not preclude independent consideration of Design Option D should the local community elect to pursue it as a separate project.

MDT is working with Jefferson County, the City of Boulder, and local pedestrian/bicycle groups to determine the most appropriate option as well as the extents of the facility, how the facility might be funded, and long-term maintenance arrangements.

2.3 Identification of the Preferred Alternative

Based on its ability to meet the project Purpose and Need and the associated mitigation opportunities identified above, the Build Alternative is forwarded as the Preferred Alternative for improvements in the MT 69 corridor. Design Options A, B, C and potential minimization efforts will continue to be considered as the project progresses. Again, it should be noted that Design Options A, B, and C would be located within the project construction limits and would not require any additional right-of-way.

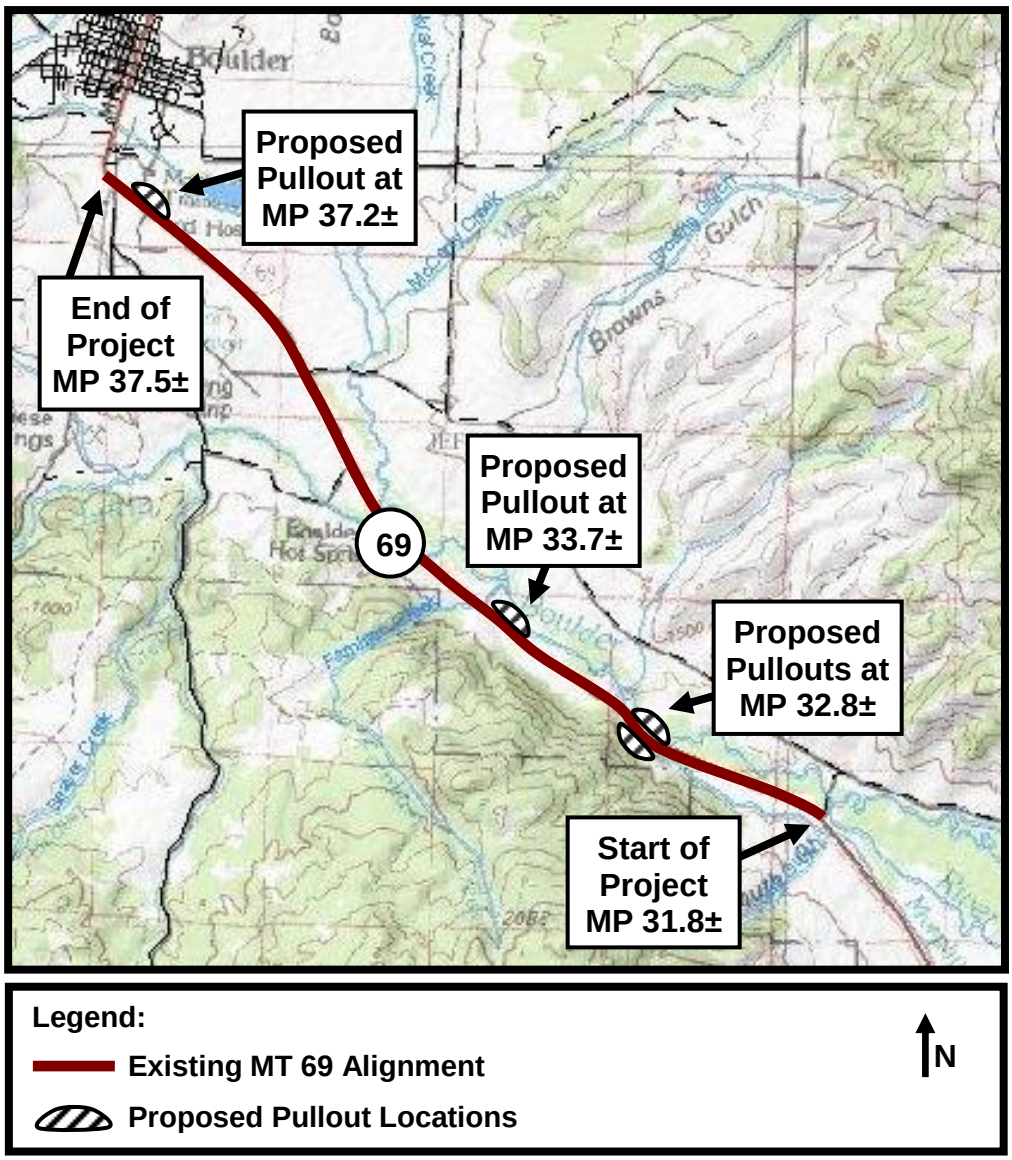
2.4 Alternatives Considered but Eliminated from Further Analysis

Alternatives Analysis

As noted previously, three additional Build Alternatives were initially considered for this project in an Alternatives Analysis completed in December 2009. These alternatives included a Spot Improvements Alternative, an Eastern Alignment Alternative, and a Western Alignment Alternative.

The Spot Improvements Alternative would include construction of several pullout locations through the corridor in order to provide opportunities for emergency and law enforcement stops. Additionally, the roadway would be resurfaced in order to extend the design life of the facility, but the existing travel width and side slopes would remain unchanged. Pullout locations proposed under this alternative are illustrated in Figure 2-3.

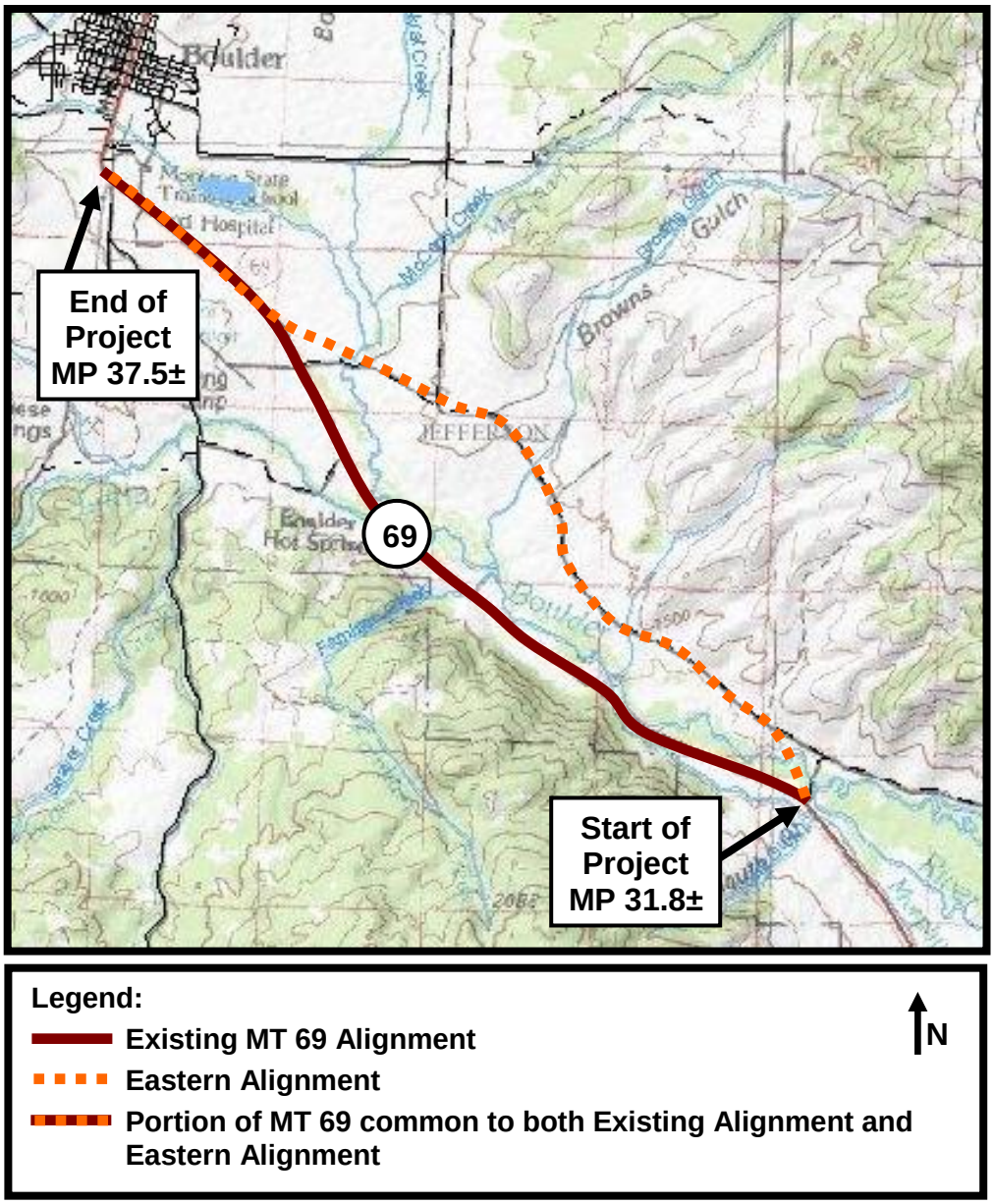
Figure 2-3 Spot Improvements Alternative



Note: Figure not to scale. MP locations approximated.

The Eastern Alignment Alternative would diverge from the existing alignment near MP 31.8± and generally follow an existing Jefferson County road alignment as much as practicable. It would rejoin the existing MT 69 alignment near MP 35.7±, and follow the existing MT 69 alignment from MP 35.7± to the project termini at MP 37.5±. The Eastern Alignment Alternative is illustrated in Figure 2-4.

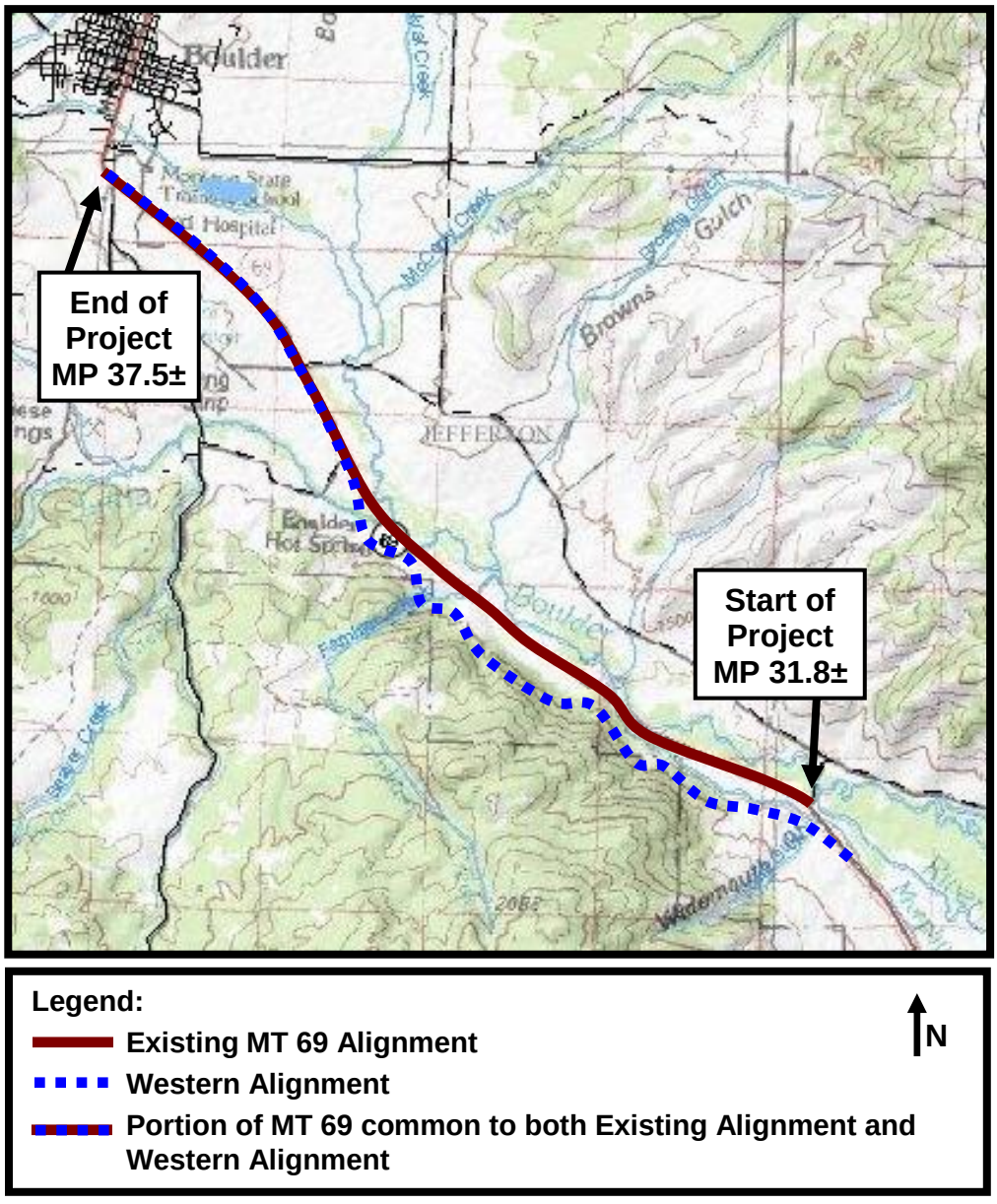
Figure 2-4 Eastern Alignment Alternative



Note: Figure not to scale. MP locations approximated.

A Western Alignment Alternative was developed that would diverge from the existing MT 69 alignment south of the project termini and generally follow the existing terrain to the west of the existing roadway outside the Boulder River floodplain. It would rejoin the existing MT 69 alignment near MP 35±, and follow the existing MT 69 alignment from MP 35± to the project termini at MP 37.5±. The Western Alignment Alternative is illustrated in Figure 2-5.

Figure 2-5 Western Alignment Alternative



Note: Figure not to scale. MP locations approximated.

As detailed in the Alternatives Analysis document, the Spot Improvements Alternative was eliminated based on its inability to address the safety concerns in the corridor. While the four proposed pullout locations may help facilitate enforcement efforts, speed limit enforcement is most successful when there are continuous shoulders along each side of a roadway. Even if

enforcement efforts were improved through the construction of pullout locations, speed limit enforcement alone likely would not appreciably affect the high incidence of crashes in the corridor given that speed was indicated as a factor in only six of the 51 total crashes and one-third of the rollover crashes over the period from January 1, 1998 through December 31, 2007. Further, a speed study conducted in February 2009 on MT 69 from the town of Boulder to MP 35.0 shows that 85 percent of vehicles traveled at or below 71 miles per hour (mph) over the portion of the corridor with a posted speed limit of 70 mph. Based on a safety and operational crash model developed as part of the 2009 Alternatives Analysis, the existing roadway is predicted to experience 29 percent more crashes in 2032 as compared to 2008 if no improvements are made to widen shoulders and flatten side slopes. The Spot Improvements Alternative would neither reduce the number of collisions with wild and domestic animals nor would it reduce the number of single vehicle crashes resulting in overturn, which are the primary safety concerns on MT 69. Accordingly, this alternative fails to meet the Purpose and Need of the project and has therefore been eliminated from further consideration.

New alignment alternatives were eliminated based on their impracticability and unreasonableness resulting from high cost, considerable constructability challenges, known and anticipated right-of-way acquisition difficulties, expressed community concerns, and political obstacles. The concept of a new alignment in the Boulder corridor was met with strong opposition from members of the public and local officials. Further, landowners adjacent to the existing county road noted they would be unwilling to voluntarily sell their land to MDT. In addition to public opposition, the eastern alignment would be approximately $7.5 million more costly than rehabilitation/reconstruction and widening of the existing roadway. A western alignment would be exponentially more costly at approximately $68.5 million and would be more difficult to construct given the rough terrain to the west of the existing alignment.

For the reasons articulated in the Alternatives Analysis, the Spot Improvements Alternative, Eastern Alignment Alternative, and Western Alignment Alternative were eliminated from further consideration.

Other Alternatives Proposed by Members of the Public

MDT also considered three additional alternatives that were proposed by members of the public during public meetings and through written comments.

The first of these has been termed the Citizens' Alternative and includes the following elements:

- A pedestrian walkway and bicycle facility along the highway's current route;
- Safe crosswalks at the Jefferson County Fairgrounds, Boulder Hot Springs, and other frequently utilized junctions;
- Retention of the valley's lush aspen and cottonwood;
- Underpasses or overpasses for elk, deer, moose, bear, pronghorn and other wildlife;
- A full-time truck weighing station;
- Lower speed limits for the safety of vehicles, trucks, pedestrians, ranchers and their equipment, bicycles, wildlife and livestock; and
- Strict enforcement of these lower speed limits.

Like the Spot Improvements Alternative considered in the Alternatives Analysis, the Citizens' Alternative alone would not address the crash history in the corridor. As noted previously, speed was indicated as a factor in only six of the 51 total crashes (approximately 12 percent) over the January 1, 1998 through December 31, 2007 reporting period and a 2009 speed study found that 85 percent of vehicles were traveling at or below the posted speed limit. Without changes to the roadway template, more crashes are anticipated over the planning horizon as compared to current conditions. Accordingly, the Citizens' Alternative has been eliminated from further consideration as a stand-alone alternative. It should be noted, however, that a number of the elements in the Citizens' Alternative are being considered as part of the Build Alternative, including a pedestrian/bicycle facility and animal crossing measures, and MDT has committed to replanting appropriate vegetation in areas disturbed by the project. It should also be noted that the wider shoulders proposed under the Build Alternative may facilitate greater speed limit enforcement, although these efforts are under the jurisdiction of the Montana Highway Patrol.

The second of these alternatives would involve an elevated structure spanning the length of the Boulder – South project corridor. This concept was proposed with the intent to completely avoid impacts to trees, the Boulder River, and associated wetland complexes that currently parallel the existing roadway, as well as provide for wildlife movement under the roadway. The proposal also includes the construction of a pedestrian/bicycle facility underneath the elevated highway. Based on a planning-level order of magnitude assessment, an elevated structure would cost approximately $30 million per mile of roadway as compared to approximately $1.5 million per mile of roadway for rehabilitation/reconstruction proposed under the Build Alternative, which includes the cost of resource mitigation efforts. Accordingly, the elevated structure alternative was eliminated from further consideration due to its substantial cost.

The third alternative would entail construction of an elevated wetlands bridge spanning approximately a half-mile segment of MT 69 near MP 34.5± in order to flatten a curve in this location, provide safer access to private approach roadways, avoid wetland and river impacts, provide a wildlife undercrossing opportunity, and allow pedestrian/bicycle use along what is currently the existing alignment. As with the elevated structure alternative, a wetlands bridge would be very costly at approximately $15 million for a half-mile span and was therefore eliminated from further consideration due to its substantial cost.

3.0 IMPACTS AND MITIGATION

This chapter contains information on potential social, economic, and environmental resource impacts resulting from the Preferred Alternative. This information was developed in cooperation with state and federal agencies and members of the general public. NEPA, MEPA, and the FHWA Technical Advisory (T6640.8A) outline specific areas of environmental concern to be addressed through environmental analysis.

It should be noted that no additional impacts beyond those disclosed in this chapter would result from a pedestrian/bicycle facility under Design Options A, B, and C since the facility would be located within the construction limits of the project. Design Option D would result in additional impacts, and is therefore not being considered for inclusion as part of this project.

3.1 Effects on Transportation System

Traffic

While this project would provide a wider paved surface as compared to the existing roadway, it would not increase the capacity of MT 69. Under the Preferred Alternative, MT 69 would remain a two-lane highway and would generally follow the existing alignment with some minor alignment modifications to accommodate widening while minimizing impacts to natural resources.

It should be noted that the speed limits for highways within the state are set by the Montana legislature and are detailed in Montana Code Annotated (MCA) § 61-8-303. Accordingly, this project would have no impact on the posted speed limit for MT 69, which would remain at 70 miles per hour (mph) during the daytime and 65 mph during the nighttime.

Impacts

No permanent traffic impacts are anticipated as a result of the proposed project. Temporary traffic impacts related to construction are discussed in Section 3.4.

Mitigation

No mitigation is proposed or required.

Access

There are a number of scattered rural ranch and residential access points along the portion of MT 69 within the study area.

Impacts

Existing access points may need to be modified in order to accommodate the widened roadway.

Mitigation

Access points would be perpetuated, and modifications would be negotiated with property owners.

Safety

The Preferred Alternative would result in a marked improvement in safety performance over existing conditions. As shown in Table 3.1, with no improvements the existing roadway is predicted to experience 29 percent more crashes in 2032 as compared to 2008. In comparison, the Preferred Alternative's new roadway template with flatter side slopes combined with wider shoulders is expected to result in a 41 percent reduction in crashes in 2032 as compared to the existing roadway in 2008.

Table 3.1 Results of Safety and Operational Crash Model

Parameter		Existing Roadway 1-foot Shoulder; Side Slopes Generally 3:1 (2008)	Existing Roadway 1-foot Shoulder; Side Slopes Generally 3:1 (2032)	Preferred Alternative 5-foot Shoulder; Side Slopes Flatter than 4:1 (2032)
Input Values	Average Annual Daily Traffic	900	1,170	1,170
	Lane Width (feet)	12	12	12
	Paved Shoulder Width (feet)	1	1	5
	Unpaved Shoulder Width (feet)	0	0	0
	Hazard Rating	5	5	2
Crash Comparison	Total Crashes (10 years)	36.4	46.9	21.2
	Total Crashes (10 years) Calibrated**	51.0	65.8	29.8
	Total Crashes (per year)	10.2	13.2	6.0
	Percent Change in Total Crashes (per year) Compared to Existing Roadway (2008)	NA	29% Higher	41% Lower

** Calibration Multiplier = 1.402 (Actual crashes/predicted crashes)
Source: MDT, 2009.

Again, it should be noted that although residents in the MT 69 corridor south of Boulder perceive that a majority of vehicles exceed the posted speed limit on MT 69, a 2009 speed study shows that 85 percent of vehicles traveled at or below 71 miles per hour (mph) over the portion of the corridor with a posted speed limit of 70 mph.

Impacts

No adverse safety impacts are anticipated as a result of the proposed project. The Preferred Alternative is expected to improve safety performance in the corridor by providing a wider paved surface and flatter side slopes.

Mitigation

No mitigation is proposed or required.

Pedestrians and Bicyclists

Pedestrian/bicycle traffic in the vicinity of the proposed project is currently limited, and the narrow paved width and lack of shoulders through much of the corridor may discourage pedestrian/bicycle use of the existing MT 69 facility. Area residents have submitted numerous comments requesting consideration of a separated bicycle facility as part of this project that would run parallel to MT 69, at a minimum, from the Boulder River Bridge south to the Boulder Hot Springs turnoff, with some requesting that the facility extend over the entire project limits between the Boulder River Bridge and the Elkhorn Road turnoff.

The Preferred Alternative would widen the MT 69 top width and include shoulders that are consistent with national standards to provide adequate space for bicycle and pedestrian use. In addition, MDT is considering design options for a pedestrian/bicycle facility parallel to MT 69 along with appropriate pedestrian crossings on MT 69. MDT is working with Jefferson County, the City of Boulder, and local pedestrian/bicycle groups to identify the best facility option, the appropriate extents of a facility, and possible funding and maintenance arrangements.

Impacts

No adverse impacts to pedestrians or bicyclists are anticipated as a result of the proposed project. The Preferred Alternative would improve pedestrian and bicycle facilities in the corridor by providing a shoulder width suitable for bicycle use in accordance with American Association of State Highway and Transportation Officials (AASHTO) guidelines.

Because the pedestrian underpass is currently non-functional, its removal would result in no adverse impact to pedestrians or bicyclists.

Mitigation

No mitigation is proposed or required.

3.2 Effects on Community

Land Use

Land within the immediate project area is primarily undeveloped, uncultivated wetland. Land uses within the broader MT 69 corridor include low-intensity agriculture, open lands, grazing, small forested areas, and dispersed home sites. The Boulder River lies to the east of the MT 69 alignment over the entire project area, with some portions of the roadway running directly adjacent to the river.

Impacts

Although some existing wetland areas would be converted to transportation uses, no broad changes in land use or development patterns are anticipated as a result of this proposed project.

Mitigation

No land use mitigation is proposed or required; wetland mitigation is discussed in Section 3.3.

Community Resources

There are no community resources (e.g., schools, churches, parks, municipal buildings, fire stations) within the construction limits for the Preferred Alternative.

Impacts

No impacts to community resources are anticipated as a result of this proposed project.

Mitigation

No mitigation is proposed or required.

Local and Regional Economies

Major industries in the Jefferson County area include education, health, and social services; public administration; retail trade; construction; and agriculture, forestry, fishing and hunting, and mining. A high percentage of the employed citizens of Jefferson County work outside their homes. Many residents of Jefferson County commute an average of over 22 minutes into surrounding communities for work.

Impacts

No adverse economic impacts are anticipated as a result of the proposed project. An improved roadway would facilitate safer and more efficient commutes for area workers.

Mitigation

No mitigation is proposed or required.

Environmental Justice

Under Title VI of the 1964 Civil Rights Act and related statutes, federal agencies are required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion.

Executive Order (E.O.) 12898 requires each federal agency to make achieving environmental justice part of its mission "by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations."

Impacts

Right-of-way impacts are evenly distributed throughout the corridor, and no residences or businesses would need to be acquired under the Preferred Alternative. Therefore, both the No Build Alternative and the Build Alternative are in accordance with E.O. 12898, and would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations. These alternatives also comply with the provisions of Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000(d), as amended) under the FHWA's regulations (23 CFR 200).

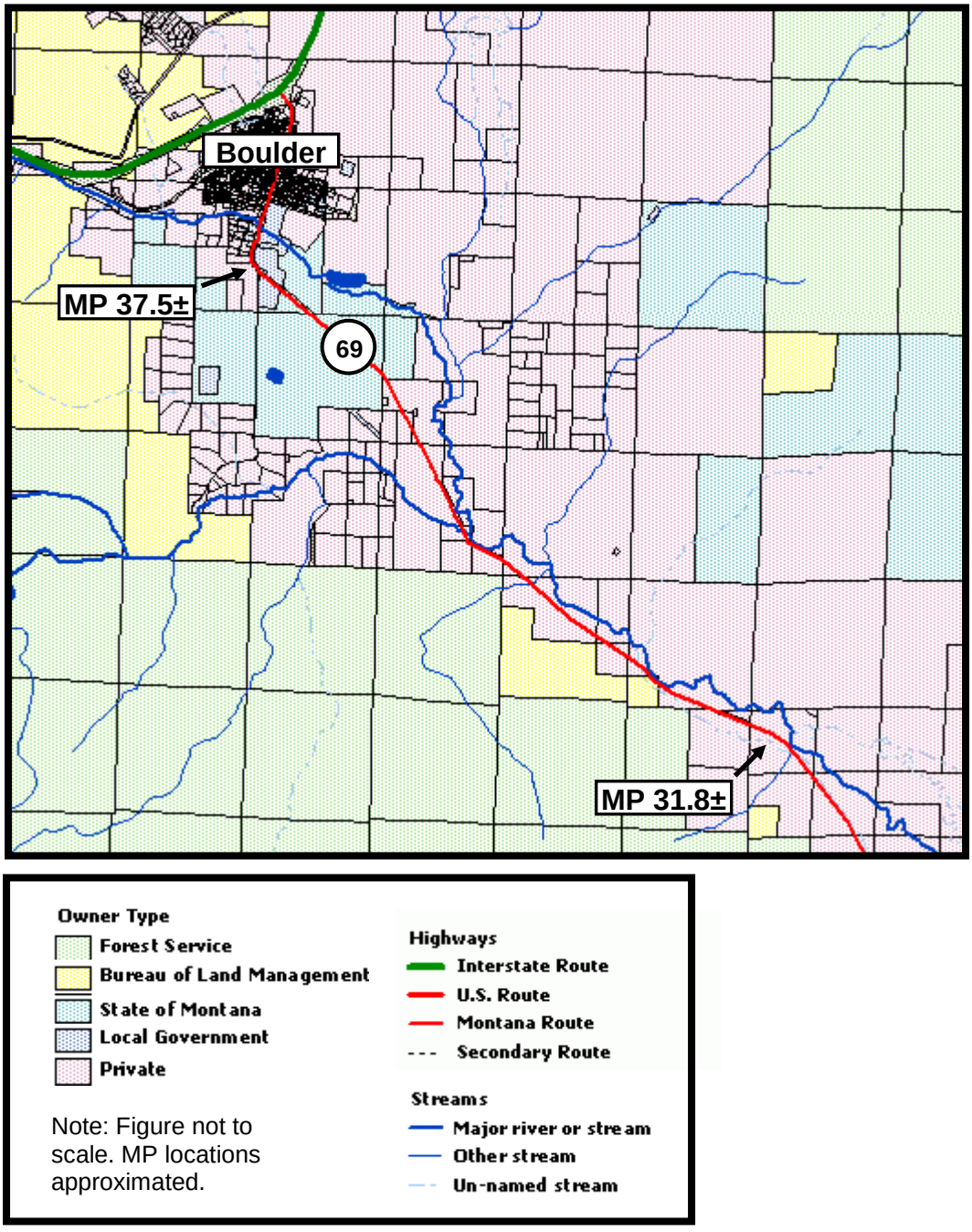
Mitigation

No mitigation is proposed or required.

Right-of-Way and Relocations

As illustrated in Figure 3-1, the project area is largely under private ownership, although there are interspersed land areas owned by the State of Montana, the U.S. Forest Service (USFS), and the Bureau of Land Management (BLM) directly adjacent or in close proximity to MT 69. New right-of-way and easements would need to be obtained from land owners for the proposed widening.

Figure 3-1 Land Ownership



Source: Natural Resource Information System (NRIS), 2010.

There are no residences or buildings within the construction limits for the Preferred Alternative, although a residence is located at the top of the rock outcropping located near MP 34±. An alignment shift into the rock face at this location may impact the privately-owned parcel, but relocation is not expected.

Impacts

There would be private right-of-way acquisitions under the Preferred Alternative, although there would be no residential or business relocations. Additionally, right-of-way in the form of an easement or construction permit would need to be obtained from the State of Montana, USFS, and BLM.

Mitigation

Lands needed for right-of-way under the Preferred Alternative which are in private ownership would be acquired in accordance with both the *Uniform Relocation Assistance and Real Property Acquisition Act* of 1970 (P.L. 91-646), and the *Uniform Relocation Act Amendments* of 1987 (P.L. 100-17). Compensation for right-of-way acquisitions would be made at "fair market value" for the "highest and best use" of the land. Fencing will be provided according to MDT policy. Because the shoulder width will be less than 6 feet, mailbox turnouts will be provided in accordance with MDT policy.

Utilities

A number of public utilities have been identified within this corridor. These utilities include water, electrical, and telecommunications transmission lines and natural gas pipelines.

Impacts

Utilities identified within the corridor may be impacted by the new right-of-way requirements for the proposed project.

Mitigation

Utility relocations would be coordinated with the lines' owners and done prior to this proposed project's construction. Notification of service interruptions due to these relocations would be the responsibility of these utility lines' owners. Disruptions are normally minor and are usually limited to the customers on the affected lines.

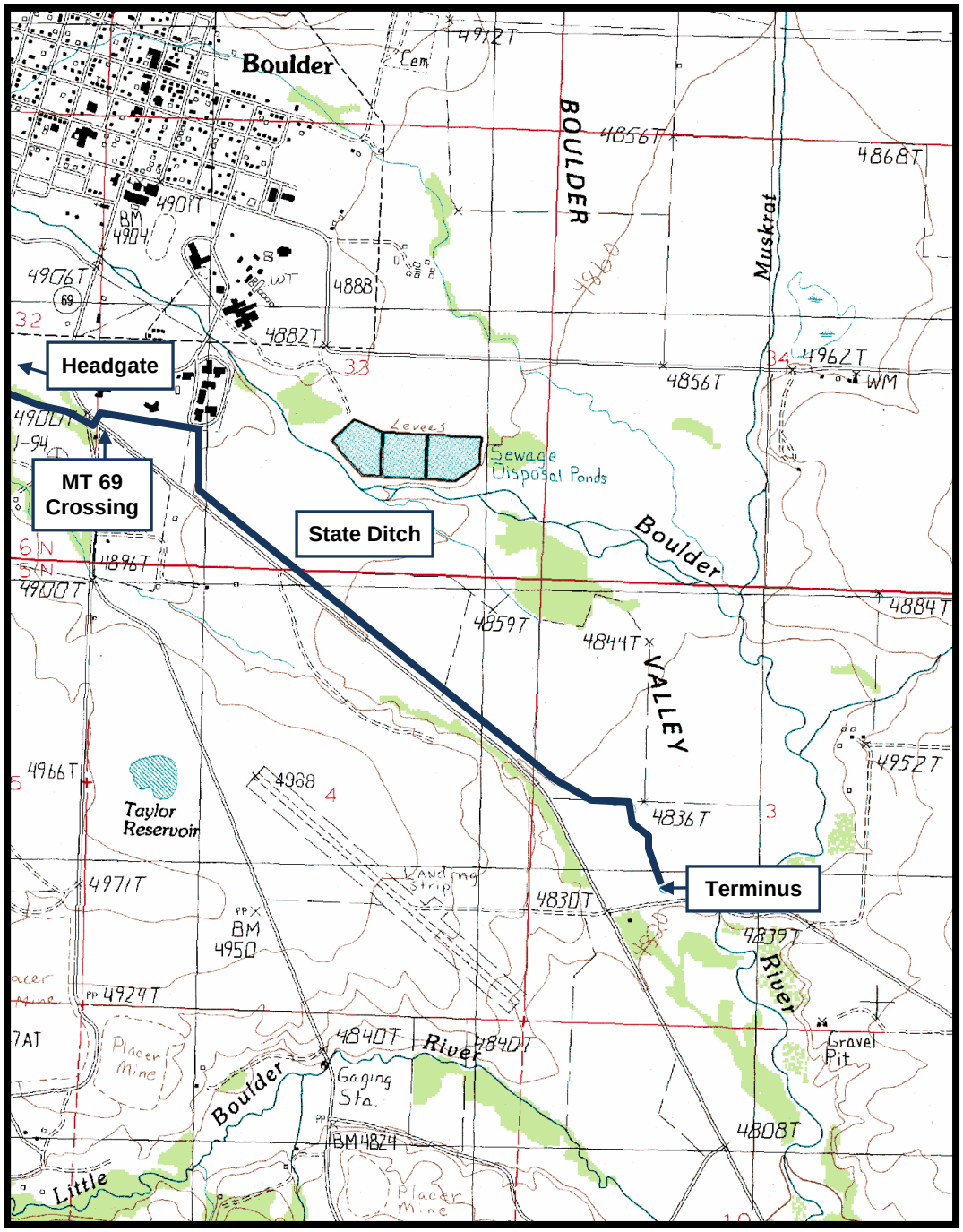
Cultural/Archeological/Historical Resources

On October 20 and 31, 2006, Frontier Historical consultants conducted an intensive-level cultural resource survey of the Boulder-South project area. As a result of the inventory, six historic sites were identified and recorded, including one previously recorded site. No prehistoric sites were located during the survey.

Sites recorded during the survey include the Wolny House (24JF1877), Rock Wall (24JF1878), Adit (24JF1879), State Ditch Bridge (24JF1880), State Ditch (24JF1881), and the previously recorded Little Boulder River Bridge (24JF0813). Of these, it was determined that only the State Ditch and the Little Boulder River Bridge are eligible for listing in the National Register for Historic Places (NRHP). The other sites either did not meet the criteria for eligibility or had diminished integrity, which precluded their consideration for the NRHP.

The State Ditch consists of a return flow irrigation collector and ranges from one to three feet in depth and from a few feet to approximately 12 feet in width. In its upper segments above Little Boulder Road, the ditch collects return flow from irrigated fields. It crosses under Little Boulder Road in a modern metal culvert. On the east side of Little Boulder Road, the ditch then crosses under MT 69 to the north via the State Ditch Bridge (24JF1880), as shown in Figure 3-2. The ditch runs east from MT 69 crossing to irrigate a small field associated with the farm of the Montana State Training School (now the Boulder River School and Hospital). From the east side of the school, it runs south and then parallel to the highway for approximately one mile. The ditch then curves away from the highway to its terminus. The site has good integrity and has not changed from its original function and appearance, with the exception of modern culverts placed under Little Boulder Road and MT 69. Further, the site has played an important role in local agriculture.

Figure 3-2 Location of State Ditch

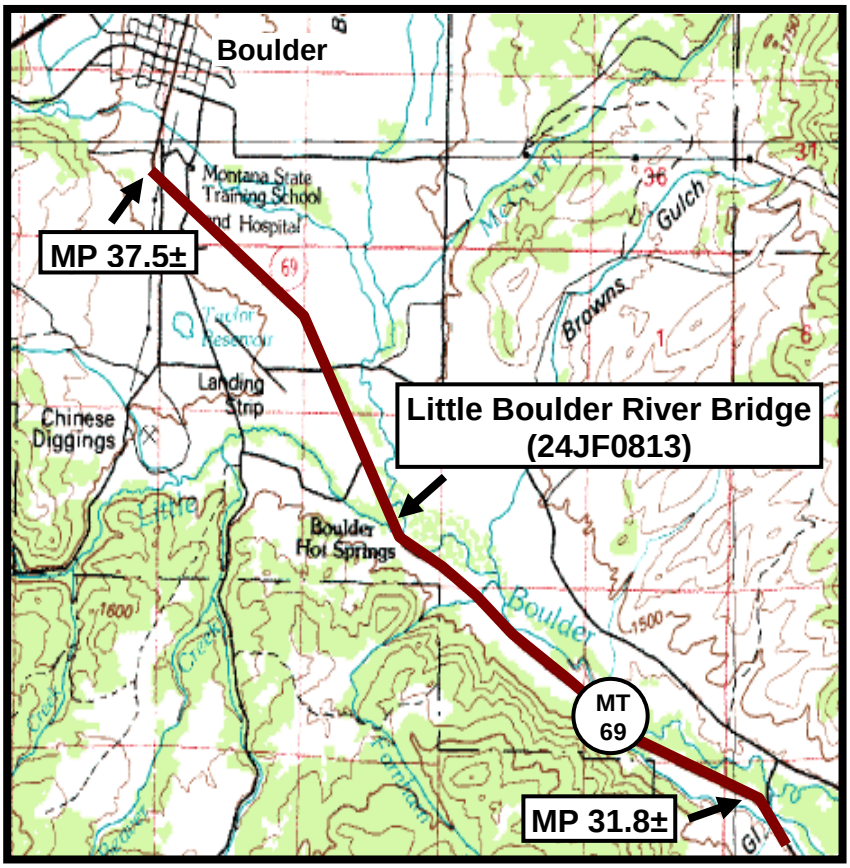


Source: Cultural Resource Inventory and Assessment, Boulder South, Jefferson County, 2007 and DOWL HKM, 2010.
Note: figure not to scale; location of state ditch approximated.

The Little Boulder River Bridge is a three-span timber bridge with an asphalt overlay and is located approximately 2.5 miles southeast of the town of Boulder, as shown in Figure 3-3. The

site has excellent integrity and is recommended to be eligible for listing in the NRHP as an example of a 1940s-era timber-stringer bridge.

Figure 3-3 Location of Little Boulder River Bridge



Note: Figure not to scale. MP locations approximated.

Impacts

Up to 300 feet of the three-mile-long State Ditch would be rechanneled under the Preferred Alternative. Based on coordination with SHPO, this would result in a **No Effect** determination because the ditch would continue to function in its historic capacity and there would be no change in the existing alignment of the ditch, its dimensions, setting, use, or appearance. SHPO concurrence is attached in Appendix A. A full description of the State Ditch is provided in Chapter 4 - Section 4(f) Resources.

The Little Boulder River Bridge does not meet current design standards. Accordingly, as part of this project the bridge would be replaced with another bridge in approximately the same location. This action would constitute an **Adverse Effect**. Further information is included in the Programmatic Section 4(f) Evaluation contained in Appendix B and in the Historic Roads and Bridges Programmatic Agreement contained in Appendix C.

Mitigation

No mitigation would be required for the State Ditch.

Mitigation for the Little Boulder River Bridge is addressed under the Historic Roads and Bridges Programmatic Agreement.

NL&WCF - Section 6(f) Lands

No National Land & Water Conservation Fund (NL&WCF) Act - Section 6(f) (16 U.S.C.460) properties have been identified within the vicinity of the proposed project. No acquisition of NL&WCF - Section 6(f) properties would occur, and there would be no impacts resulting from the Preferred Alternative.

Impacts

No impacts are anticipated.

Mitigation

No mitigation is proposed or required.

Noise

The proposed Build Alternative for this project will generally follow the existing MT 69 alignment, with only minor alignment modifications to accommodate widening and to bring the roadway up to current standards. Because the Build Alternative will not substantially alter the road alignment, the project does not qualify as a Type I project according to the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, and a detailed traffic noise analysis is not required according to MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual, June 2001*.

Impacts

No permanent noise impacts are anticipated as a result of the proposed project. Temporary noise impacts related to construction are discussed in Section 3.4.

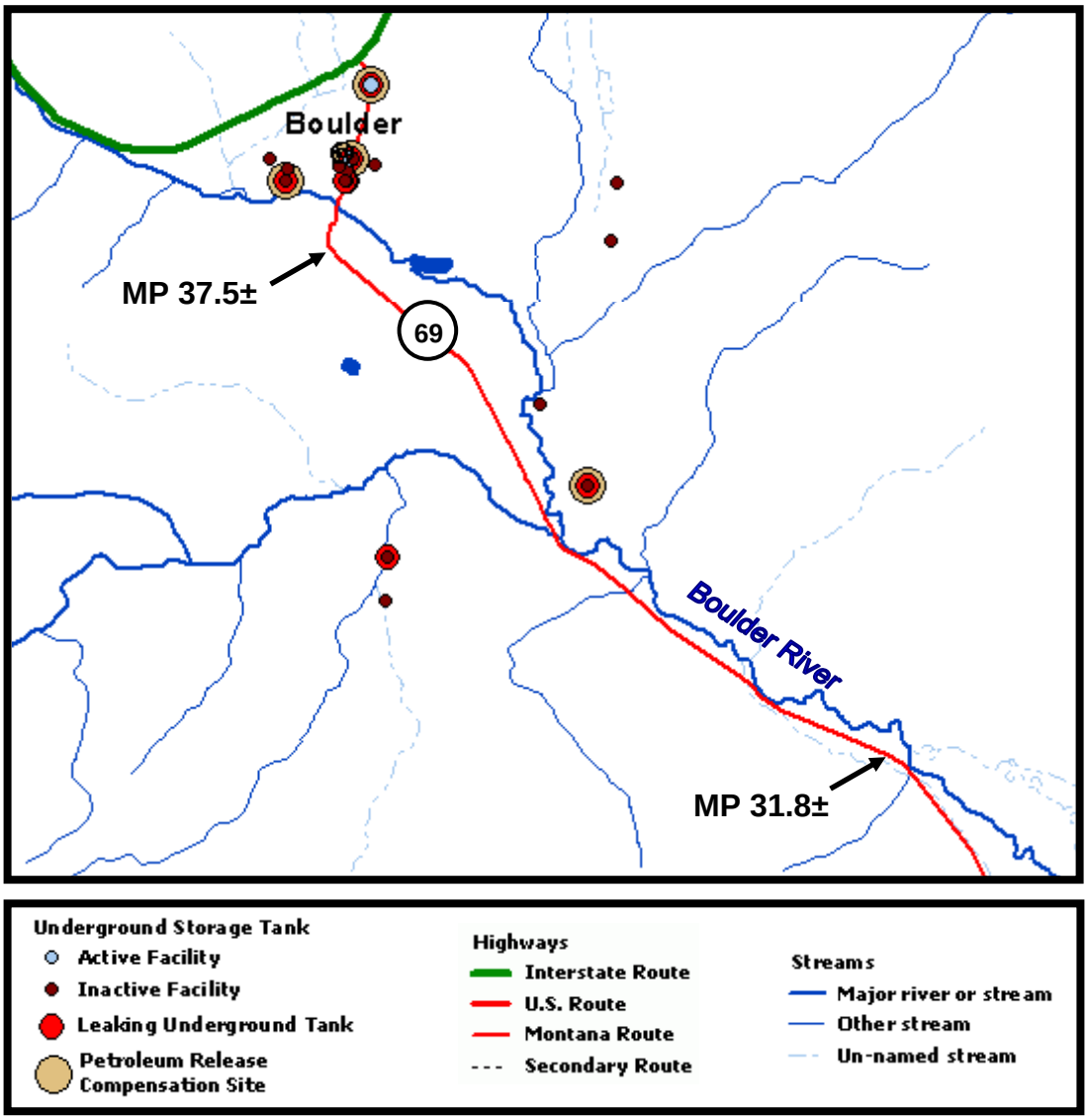
Mitigation

No mitigation is proposed or required.

Hazardous Materials

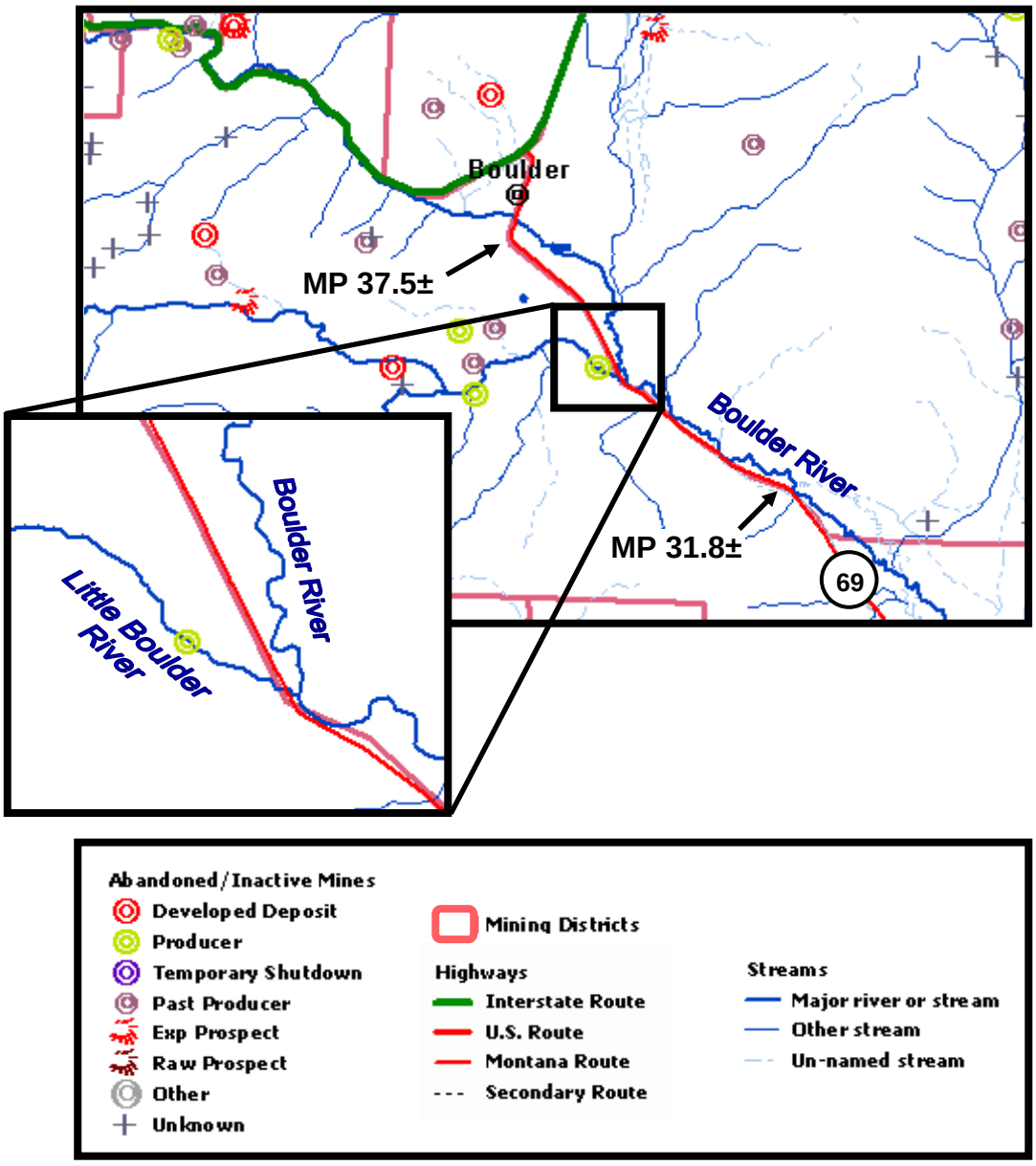
Based on an NRIS database search, there are no hazardous waste sites in the immediate project area. As shown in Figure 3-4, the closest leaking underground storage tank sites are located to the east of MT 69 across the Boulder River. There is an abandoned mine site located on the Little Boulder River, but this site is also outside the immediate project area, as shown in Figure 3-5.

Figure 3-4 Location of Underground Storage Tanks and Petroleum Tank Release Compensation Board Sites



Source: NRIS, 2009.
Note: Figure not to scale. MP locations approximated.

Figure 3-5 Abandoned and Inactive Mines



Source: NRIS, 2010.
Note: Figure not to scale. MP locations approximated.

Impacts

No impacts are anticipated.

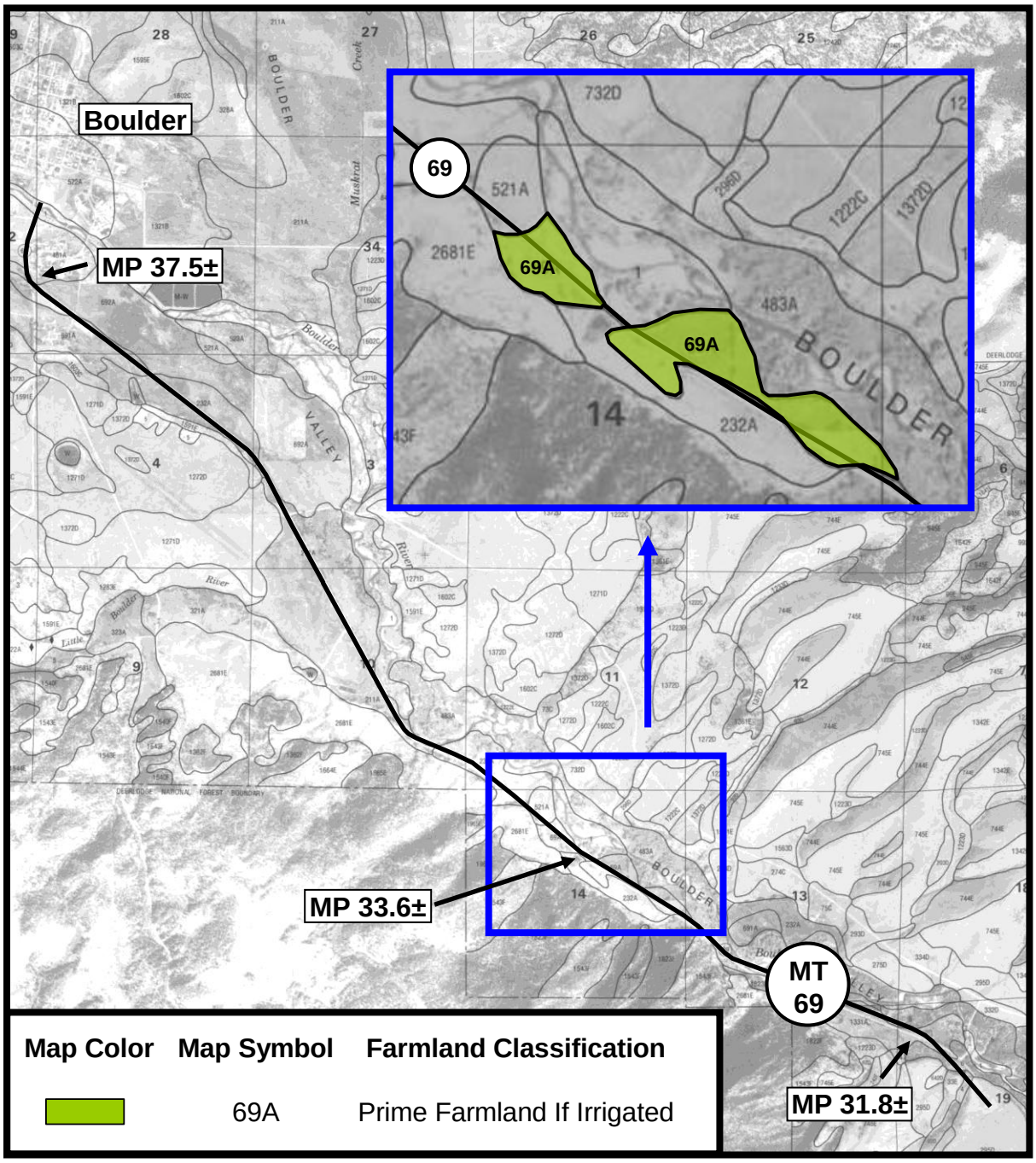
Mitigation

No mitigation is proposed or required.

Farmlands

Pursuant to the Farmland Protection Policy Act (FPPA), an inventory of farmland within the study area has been completed. According to a review of the soils mapping provided by the U.S. Department of Agriculture – Natural Resource Conservation Service, the project area contains two small areas of land classified as Prime Farmland If Irrigated located near MP 33.6±, as illustrated in Figure 3-6.

Figure 3-6 Prime Farmland



Source: Natural Resources Conservation Service, 2010.
Note: Figure not to scale. MP locations approximated.

Impacts

The proposed project would widen MT 69 from its existing top width of approximately 26.2 feet to a total top width of 34± feet. This widening would result in the conversion of approximately five acres of farmland classified as Prime Farmland if Irrigated to non-productive use near MP 33.6±.

Mitigation

In accordance with the FPPA, a Farmland Conversion Impact Rating Form has been completed for this proposed project. Both the Preferred Alternative and the No Build Alternative result in "Total Site Assessment Points" of less than 160; therefore, under the provisions of 7 CFR 658.4(c)(2), no further consideration for protection is necessary. A copy of the form is included in Appendix D. Best Management Practices (BMPs) will be used to limit disturbance, control erosion, and to re-vegetate disturbed areas within the construction limits.

Abandoned Structures

A structure located at MP 36.6± previously served as a pedestrian underpass leading to the Montana State Training School (now the Boulder River School and Hospital), but has since been abandoned and is generally filled with water through most of the year. In order to function as an undercrossing, the structure would require regular pumping to eliminate the standing water that naturally occurs due to the high water table. Due to the maintenance requirements that would be necessary to ensure functionality and the associated cost and safety considerations, it was determined that this structure would be removed as part of the project.

In addition to this structure, there are also a number of irrigation ditch crossings within the project area, some of which appear to be abandoned.

Impacts

The pedestrian underpass structure will be removed, and will not be replaced due to the high water table and accessibility issues in this location. Because the pedestrian underpass is currently non-functional, its removal would result in no adverse impact to pedestrians or bicyclists. There would also be impacts to existing irrigation crossings in the study area.

Mitigation

MDT will investigate irrigation crossings to determine if they need to be perpetuated or if they can be abandoned.

MDT will coordinate with ditch owners during construction to ensure there would be no disruption of irrigation service as a result of the Preferred Alternative.

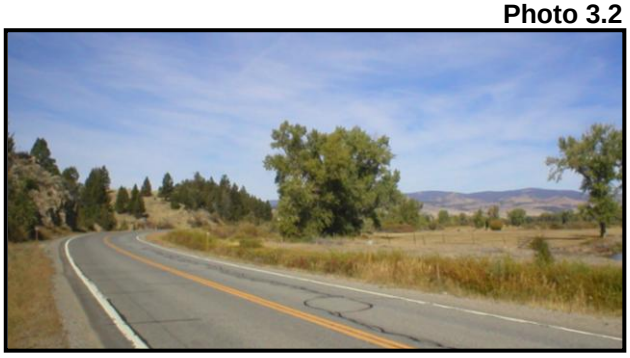
Visual Resources

The land on either side of MT 69 is heavily vegetated over much of the project area, as shown in Photo 3.1. Wooded hillsides dominate the view, with mountains visible on the horizon.

Photo 3.1

MT 69 also traverses more open areas that provide relatively expansive views, as shown in Photo 3.2.

Photo 3.2



Over some portions of the corridor, wetland areas are directly adjacent to the MT 69 alignment, as illustrated in Photo 3.3.

Photo 3.3

MT 69 parallels a deep rock cut over a portion of the project area, as shown in Photo 3.4.

Photo 3.4

The Preferred Alternative would largely follow the existing alignment, except for minor alignment shifts to minimize impacts to important resources.

Impacts

Construction would result in the loss of some vegetation, including trees and brush within the roadway clear zone. As a result, views would potentially be disrupted due to reconstruction and widening of the roadway and subsequent loss of trees and other vegetation along the current alignment.

Mitigation

Techniques would be employed, if practicable, to mitigate the visual impact of typical brush and tree clearing that would provide a random, meandering woodline edge, as opposed to a linear woodline edge. The disturbed area would be reseeded with desirable vegetation. It should be noted that natural regeneration of aspen and cottonwood is anticipated post-construction in locations where large stands now exist throughout the project corridor. An example of an aspen clone exists at MP 33.2; natural regeneration is anticipated in this location and replanting would likely not be needed. To soften the view shed, MDT will revegetate and replant trees in appropriate locations where a single line of trees within the construction limits must be removed. For example, a single row of trees that will be impacted by construction limits exists from MP 32.1 to 32.8. Replanting will be conducted in this location. MDT intends to replant trees in areas where single rows have been impacted and allow for natural regeneration in areas where clones exist in order to maintain the view shed, habitat diversity, and stabilization that trees provide.

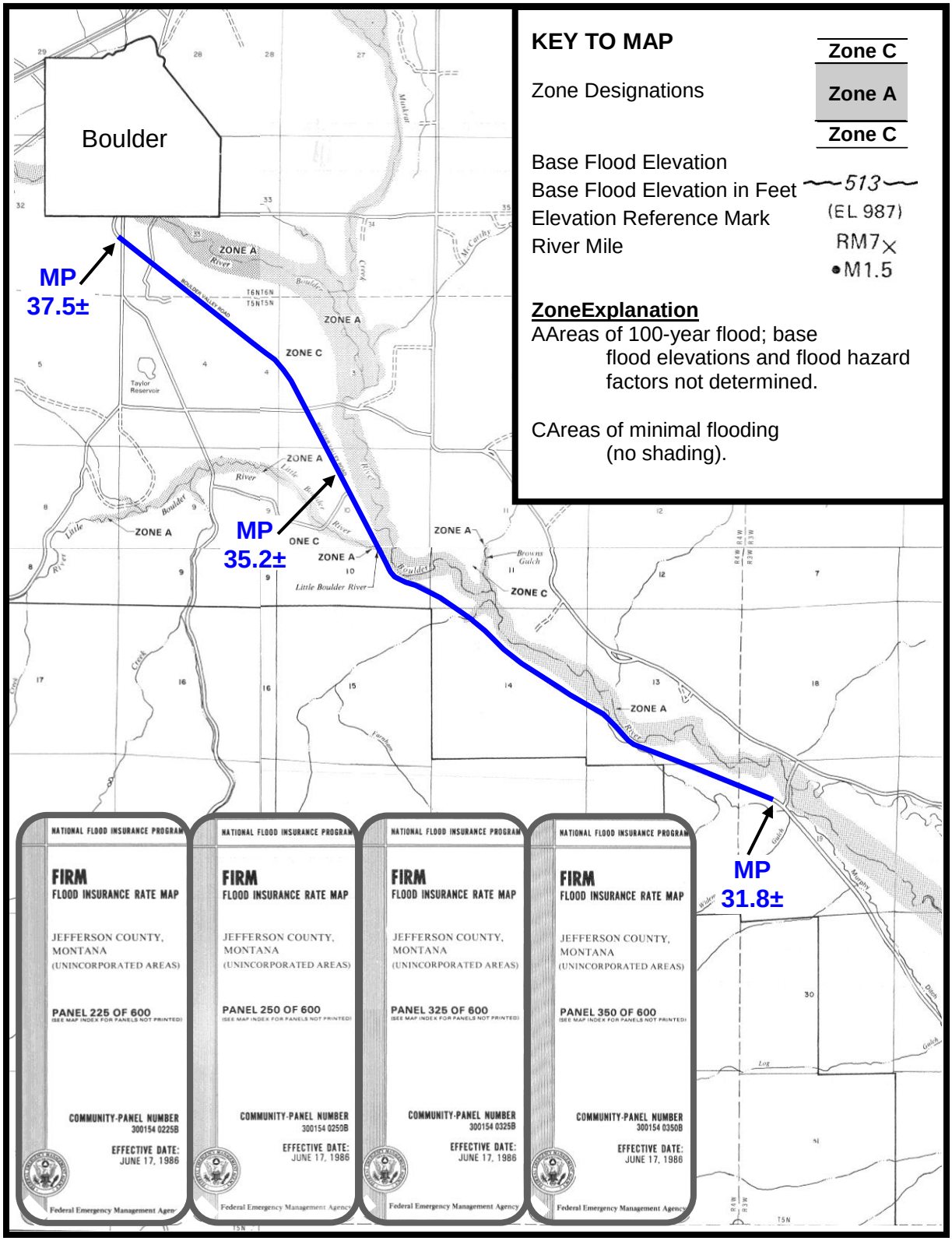
3.3 Effects on Natural and Physical Environment

Floodplains

E.O. 11988 and FHWA's floodplain regulation (23 CFR 650, Subpart A) require an evaluation of any proposed action to determine if any of its alternatives encroach on the base floodplain. The base floodplain is defined as the area that is encompassed by the 100-year floodplain.

As illustrated in Figure 3-7, the MT 69 alignment is either within or closely parallels the 100-year floodplain for the Boulder River over the portion of the corridor between MP 31.8± to roughly MP 35.2±. Roadway widening in this portion of the corridor would involve encroachments into the floodplain area.

Figure 3-7 100-Year Floodplain Mapping



Source: Federal Emergency Management Agency, 2010.
Note: Figure not to scale. MP locations are approximated.

Impacts

The proposed project would involve construction within the 100-year floodplain. Existing hydraulic conditions would be maintained or improved throughout the corridor through the installation of new conveyance structures developed in coordination with appropriate resource agencies. Impacts from new conveyance structures would be designed to have no detrimental impact on the flood risk in the corridor.

Mitigation

As necessary, MDT will obtain the appropriate permit and adhere to the conditions.

Water Resources/Quality

The main water bodies with potential to be impacted by the project include the main Boulder River, the Little Boulder River, three named and three unnamed perennial streams originating in the hills north of Bull Mountain. Progressing from the town of Boulder towards the south along the project alignment, the main perennial tributaries to the Boulder River include the Little Boulder River, unnamed perennial stream one, Farnham Creek (Goat Canyon), Killian Spring, unnamed perennial stream two, unnamed perennial stream three, and Rear Gulch. The Murphy Ditch is also a major aquatic feature and parallels the roadway on the southwestern side from the project's southern terminus to approximately MP 31.8. There are no intermittent or ephemeral drainages indicated on the U.S. Geological Survey (USGS) topographic map for the area (Boulder East, Montana 1996), nor were intermittent drainages observed during the field surveys conducted in 2005 or 2008.

As noted in Table 3.2, there are five named irrigation ditches within the vicinity of the project area. Irrigation ditches with return flow to a Water of the U.S. fall under the jurisdiction of U.S. Army Corps of Engineers (USACE). Jurisdictionality was determined through review of field notes, aerial photographs, and USGS mapping. Based on these sources, it appears that four of the five ditches in the project area deliver return water to the Boulder River. The ditch network in the valley is extensive and complex with many of the ditches feeding water into other ditches before they return water to the Boulder River. At least three of the ditches cross underneath MT 69, and will need to be addressed in the design of the new roadway.

Table 3.2 Named Ditches and Jurisdictional Status

Ditch Name (DNRC 2008)	Orientation	Source water (USGS 1996)	Return Water	Jurisdictional Status	Wetlands with surface connection
Evans	North-South	Un-named perennial stream (outside of project area)	no	No	WL 13
State	Parallel to MT 69	Evans ditch	Yes, Boulder River	Yes	WL 12
Frascht-Smith	Parallel to MT 69	Little Boulder River	Yes, via State ditch to Boulder River	Yes	WL 9, 10, 11, 12, 15, 16, 17
Killiam (also labeled Franchi)	Parallel to MT 69	Killian Spring and Goat Canyon	Yes, Boulder River	Yes	WL 5, 6, 7, 19, 21, 22
Jones-Nelson or McCauley Murphy	Meanders south of MT 69, but is generally parallel to MT 69	Fed by several perennial streams	Yes, Boulder River	Yes	WL 2,3,4

Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.

Much of the Boulder and Little Boulder River channels are relatively undisturbed by adjacent land use, which are limited to seasonal hay production, grazing, and limited crop production such as wheat. It is apparent from a review of the aerial photos that the main Boulder River channel has meandered considerably over time. The edge of the channel of the Boulder River maintains a healthy riparian community dominated by cottonwood trees and willows. The lands on the south side of the Little Boulder River near its confluence with the main Boulder River slope steeply down to the Little Boulder River channel. The lands on the north side of the Little Boulder channel are a mix of dense willow and shrub/scrub habitat and seasonally hayed agricultural land. Rip-rap placement is concentrated at bridge crossings and at points where the highway encroaches into the channel. The encroachments occur where the highway passes between the river channel and steep hillsides. The current rip-rap placement indicates the need to stabilize the channel in order to prevent erosion.

The portion of the Little Boulder River near the project area flows through a large undeveloped wetland adjacent to the Boulder Hot Springs. Review of aerial photos shows that the Boulder River meanders considerably across the existing floodplain. The riparian habitat along these meanders varies from open gravel and sand bars to mature cottonwood forests. Substrate is generally small cobble and gravel with some interstitial fines. Biologists observed undercut banks, large riffle and pool complexes, and mature riparian vegetation along much of the Boulder River channel. There are active beaver dams near the confluence of the Little Boulder and the main Boulder Rivers and evidence of past beaver activity in other parts of the project area.

Downstream of the City of Boulder, the floodplain widens and the Boulder River meanders through cottonwoods, aspen, and willows. Intensive hard rock mining in the drainage in the late 1800's and early 1900's left behind acid mine seeps and mill tailings which today still affect the

river and fishery below the town of Basin to the west. Portions of the Boulder River have been relocated due to mining, agriculture, and road and railroad building, and it has been subject to rip-rapping and channel restructuring. Flows in the river depend primarily on mountain snowpack, while a number of large springs add to the river in the lower valley.

The Montana Department of Environmental Quality (DEQ) is required by Section 303(d) of the Clean Water Act (CWA) to identify and prioritize those waters which do not support irrigation, fisheries, and recreation; or provide drinking water, stockwater and wildlife habitat. Total Maximum Daily Loads (TMDLs) are an assessment of the amount of pollutant a water body can receive and not violate water quality standards. The TMDL determines how much "pollutant load" a lake or stream can assimilate. There are several TMDL water quality impaired stream reaches in and around the project area. The Little Boulder River and the stretch of the Boulder River from the town of Basin to the town of Boulder are water quality impaired from highway construction, as well as other causes. The Boulder River stretches from the town of Boulder downstream to Cottonwood Creek and from Cottonwood Creek to the Jefferson River are also water quality impaired, with wetland and habitat alteration impairment as a major cause. Other impairments include metals, sediment, and flow alteration. The metals impairment is due to historical mining upstream of the project area near the town of Basin.

According to MDT maintenance personnel in Boulder, sand and occasionally magnesium chloride are used on the portion of MT 69 between Boulder and the Elkhorn Road turnoff in order to ensure safe winter driving conditions. Maintenance personnel estimate that approximately one-quarter to one yard of sand material is used per storm event on this stretch of roadway, depending on the storm severity. This material has the potential to enter adjacent state waters through stormwater runoff, thereby adversely impacting water quality.

Impacts

Through consultation, DEQ identified potential impacts to water quality as a major concern. DEQ noted that the water bodies crossed by the proposed project are considered impaired due to upstream historic mining and dewatering.

In general, there would be an increase in the total surface area of paved road related to widening and reconstruction under the Preferred Alternative. The increase in total road surface area decreases the overall permeability of substrate and increases the rate and quantity of surface water runoff from the roadway. The quality of runoff from roadways is impacted by vehicle-related contaminants, such as motor oil, grease, and tire rubber. In addition, surface water runoff is impacted by herbicides and pesticides that may be used in landscaped or maintained areas along the highway. The minor increase in paved surface area would result in a negligible increase in runoff in the watershed.

It should be noted that the use of winter maintenance materials is expected to be relatively minimal in this corridor, given the relatively flat roadway profile. Through the majority of the corridor, vegetated areas lie between the roadway and adjacent state waters, providing natural buffers to filter such materials.

Mitigation

MDT will shift the alignment in the locations identified in Table 2.1 in order to avoid project-related encroachment of the road into the Boulder River.

Actions that prevent sedimentation may prevent or reduce many of the direct and indirect impacts described above. These activities include those described under MDT's Standards and Specifications Section 107.11, titled "Environmental Protection," Section 208 titled "Water Pollution Control and Stream Preservation," and the requirements of the Montana Stream Protection Act (SPA 124). In accordance with MDT's standard specifications, the contractor will be required to prevent or reduce water quality impacts caused by sediment or petroleum contaminated runoff.

The Preferred Alternative may impact water quality through storm water runoff and erosion. Mitigation of these impacts is achieved through engineering controls such as the use of erosion and sediment control features, revegetation, as well as other BMPs. The Preferred Alternative would require a Storm Water Pollution Prevention Plan (SWPPP) and field monitoring/oversight to minimize temporary impacts to water quality due to construction. Water quality impacts would also be minimized through appropriate deck and rail design on the Little Boulder River bridge structure, which would reduce or eliminate deck drainage directly into adjacent state waters.

Resource agencies specifically requested consideration of berms, sediment control basins, catchment areas, or vegetated swales to ensure that stormwater runoff, sand, or other friction material is prevented from directly entering adjacent state waters. MDT has developed Permanent Erosion and Sediment Control Design Guidelines (October 2010) which include procedures for evaluating the need for permanent erosion and sediment control measures and determining which measures can practicably be incorporated into the design. Such measures are intended to reduce soil erosion and sediment deposition into adjacent waterways. MDT will follow these guidelines in determining appropriate control measures for this project.

Wetlands

Twenty-four wetlands were delineated during site visits in July 2005 and August 2008. Of these, 23 would be considered jurisdictional under the USACE 404(b) permitting guidelines because they border on or are directly connected to a Water of the U.S.

The project corridor is bordered by wetlands for almost the entire length. Maps showing each wetland's delineated extent and locations along MT 69 are included in Appendix E.

Wetland jurisdictional status is noted in Table 3.3 Wetlands are numbered progressing north from the southern end of the project on the west side of the road, up to the city of Boulder and then proceeding south along the eastern side of the road. Wetland 1 is located outside the project area, and is therefore not included in Table 3.3.

Table 3.3 Wetlands

Wetland Number	Total Delineated Acreage	Estimated Impact Acreage	Category	Jurisdictional Status	Source of Wetland Hydrology (See Table 3.2 for Ditch Source Water)
2	2.8	0.1	III	Yes	Murphy ditch connected to Boulder River
3	4.4	0.5	III	Yes	Irrigation seepage from Murphy ditch
4	1.1	0.3	II	Yes	Murphy ditch connected to Boulder River
5	1.6	0.4	III	Yes	Perennial un-named stream
6	13.6	0.7	III	Yes	Killiam/Franchi ditch and Goat Canyon Creek
7	1.8	0.1	III	Yes	Goat Canyon Creek
8	0.1	0.1	III	No	Roadside drainage, flow from uplands
9	9.2	0.1	III	Yes	Little Boulder River
10	8.0	0.6	III	Yes	Frascht-Smith ditch connected to Boulder River
11	3.4	0.5	III	Yes	Frascht-Smith ditch connected to Boulder River
12	2.3	0.8	III	Yes	Frascht-Smith ditch connected to Boulder River
13	1.5	1.4	III	Yes	Subsurface flow, roadside drainage, State Ditch connects to Boulder River
14	0.2	0.2	III	Yes	Subsurface flow and roadside drainage
15	5.9	1.2	III	Yes	Frascht-Smith and State ditches connected to Boulder River
16	2.4	0.5	III	Yes	Frascht-Smith and State ditches connected to Boulder River
17	3.7	1.1	III	Yes	Frascht-Smith and State ditches connected to Boulder River
18	1.4	0.5	III	Yes	Frascht-Smith ditch connected to Boulder River
19	13.3	3.6	III	Yes	Killiam/Franchi irrigation ditch connected to Boulder River
20	7.0	2.3	III	Yes	Goat Canyon Creek
21	1.4	1.0	III	Yes	Killiam/Franchi irrigation ditch connected to Boulder River
22	2.1	0.6	III	Yes	Killiam/Franchi irrigation ditch connected to Boulder River
23	1.1	0.00	III	Yes	Roadside drainage, subsurface flow
24	4.6	1.4	III	Yes	Old river channels with seasonal connection to Boulder River
25	0.1	0.0	III	Yes	Groundwater seepage or intercepted groundwater flow
TOTALS	**93.0**	**18.0**			

Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.

Category II - More common than Category I, providing habitat for sensitive plants or animals. These wetlands function at very high levels for fish/wildlife habitat, or are unique for a given region, or are assigned high ratings for many of the assessed functions and values. The total actual functional points for a Category II wetland must total 65% or greater of the possible.

Category III - These wetlands are more common, generally less diverse, and often smaller and more isolated than Category I or II wetlands. Category III wetlands can provide many functions and values, but will not have as high ratings as a Category I or II. Wetlands that do not meet criteria for Category I, II, or IV classification are considered Category III wetlands.

The total delineated wetland acreage is approximately 93 acres, nearly all of which is considered jurisdictional.

Impacts

The extent of unavoidable impacts to wetlands resources will be determined by the final alignment and construction limits. MDT estimates that total wetland impacts resulting from the project will be less than 20 acres. Final quantitative impacts will be determined once the final alignment and construction limits have been determined.

Mitigation

The project design team has made and will continue to make all practicable efforts to avoid and minimize wetland impacts. MDT will shift the alignment in the locations identified in Table 2.1 in order to minimize project-related encroachment of the road into adjacent wetlands.

The large wetland complexes bordering the project that are considered USACE jurisdictional will require permitting under the CWA Section 404(b). The permit application will be submitted to the USACE after wetland determinations and delineations are reviewed and construction limits are finalized through design.

MDT is required to mitigate for permanent wetland impacts, regardless of USACE jurisdiction under E.O. 11990 (No Net Loss). Current USACE guidance no longer recommends on-site mitigation as a first priority. Unavoidable wetland impacts may be mitigated at an established MDT Wetland Reserve or via in-lieu fee within Watershed #6 (Upper Missouri). Consultation with the USACE will be necessary to determine acceptable mitigation sites.

Vegetation

The project area is dominated by native plant communities intermixed with non-native species dominated pastures. The non-native grasses in the project area are species commonly seeded for agriculture in hay meadows and pastures. The project area also contains non-native weedy forbs that most likely invaded the site after human-caused disturbances.

Impacts

Direct impacts to plants resulting from this project include the removal of vegetation during the clearing and grubbing stages of construction and loss of habitat due to road widening and straightening. For some species (non-native weedy forbs), these impacts may be considered beneficial by reducing the seed source of undesired species in the area. Impacts to larger tree species such as cottonwoods and aspens may be substantial, depending on the final alignment, and could potentially affect numerous trees over the entire project area. It should be noted that natural regeneration of aspen and cottonwood is anticipated post-construction in locations where large stands now exist throughout the project corridor. An example of an aspen clone exists at MP 33.2; natural regeneration is anticipated in this location and replanting would likely not be needed. Recolonization will be influenced by final slopes and hydrological characteristics after the project is completed. Grass, forb, and shrub species recolonize relatively quickly, while natural re-establishment of other species may be slower.

Mitigation

MDT will shift the alignment and use non-standard fill slopes in the locations identified in Table 2.1 in order to minimize project-related ground disturbance. Construction activities are required to comply with BMPs and Jefferson County requirements. The area will be replanted with

desired species in accordance with current MDT construction specifications. MDT will re-seed disturbed soil and replant trees in appropriate locations where a single line of trees within the construction limits must be removed to improve safety and sight distance. For example, a single row of trees that will be impacted by construction limits exists from MP 32.1 to 32.8. Replanting will be conducted in this location. MDT intends to replant trees in areas where single rows have been impacted and allow for natural regeneration in areas where clones exist in order to maintain the view shed, habitat diversity, and stabilization that trees provide.

Noxious Weeds

During the June 29, 2005 site visit, five species of noxious weeds were found in the project area's existing alignment along MT 69 from MP 22.186 to MP 37.1, as detailed in Table 3.4.

Table 3.4 Noxious Weeds Observed within Project Area

Common Name	Scientific Name
spotted knapweed	*Centaurea biebersteinii*
Canada thistle	*Cirsium arvense*
leafy spurge	*Euphorbia esula*
Dalmatian toadflax	*Linaria dalmatica*
tall buttercup	*Ranunculus acris*

Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.

Impacts

Because the disturbed area would be reseeded with desirable vegetation, revegetation may replace noxious and weedy species, resulting in a beneficial impact on plant community composition and structure. If construction spreads weed seed and/or roots to new areas, weeds may impact additional lands.

Mitigation

All construction activities are required to comply with the Montana Noxious Weed Law; MDT Standard Specification 107.11.5, titled Noxious Weed Management; follow the requirements of the Noxious Weed Management Act, Title 7, Chapter 22, Part 21; other BMPs; and Jefferson County requirements. The area will be replanted with desired species in accordance with current MDT construction specifications.

Wildlife and Migratory Birds

Wildlife habitats in the project area are comprised mainly of riparian, wetland, and aspen pastureland and hayfield habitats.

The Biological Resources Report (BRR) prepared for the proposed project lists 34 species documented during June 2005 field surveys, including 28 avian species, five mammals, and one amphibian species.

The project area is located within unique habitat features that attract wildlife from both low and high elevation areas surrounding the river corridor. The wetlands, riparian zone, and mosaic of meadows, cropland, and forests provide a variety of life history needs and seasonally significant habitats for many species.

A high-use wildlife crossing area was observed just north of MP 33 where forest cover borders the road on both sides, and an irrigation ditch corridor (Murphy Ditch) on the western side facilitates travel parallel to the road. Deer, elk, and moose adult and fawn/calf tracks and pellets were observed on both sides of the highway, with the highest concentrations on the west side approximately 330 feet southeast of the fence corner. Coyote tracks and scat were also observed on both sides of the highway. Travel routes were concentrated along the ditch right-of-way and fence line, and appeared to form a network of trails that connected a series of crossing points. The Wetland 4 area has several characteristics that combine to create a good wildlife crossing zone, and many of these characteristics are found in other parts of the project area. On the southwest side of the road, an irrigation ditch provides a good travel corridor between the steep rock cliff and the road, and the Boulder River provides similar benefits on the east side. The Boulder River corridor provides good browse, water, cover, and travel habitat to access prominent tributaries draining the uplands to the northeast, such as Browns Gulch.

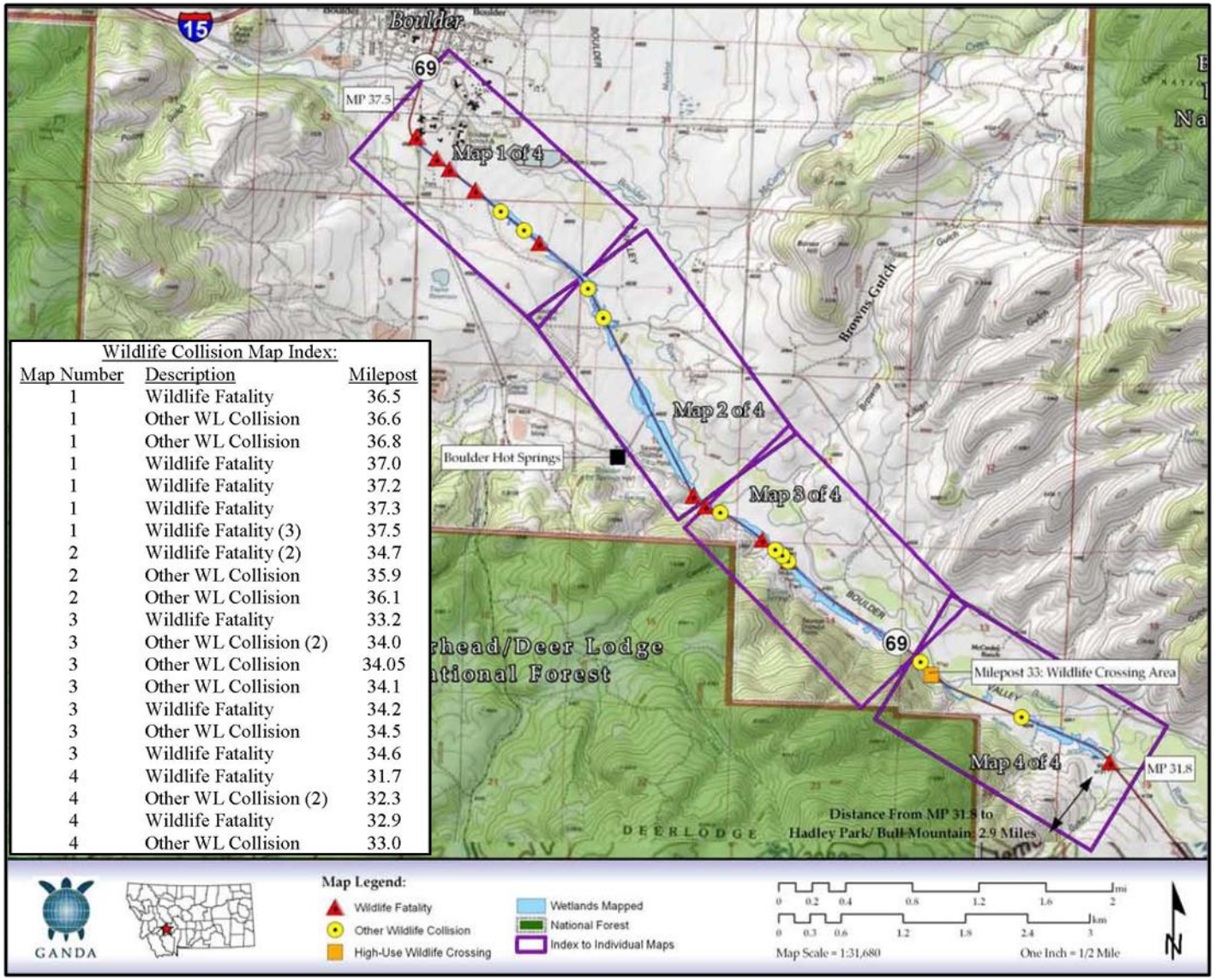
Vehicle collisions with wildlife and domestic animals occur within the project corridor potentially resulting in injury or death to wildlife. Not all incidents are documented due to lack of reporting to law enforcement; injured animals may also die outside of the road corridor and remain unreported. In cases where reports are filed and carcasses are found, two sources of reliable data are available to assess impacts within the project area: highway patrol crash report records and MDT maintenance records of road-kill carcass removal. The data are interpreted and presented somewhat differently because collision reports do not confirm death of the animal, nor do they identify date, sex, time of day, or species.

Crash data for the period of January 1, 1997 through December 31, 2006 was assessed with regard to animal-vehicle collisions. Of the crashes reported over this period, nearly 35 percent (or 19 out of 55 total crashes) involved animals. Of these 19 crashes, 37 percent (or 7 out of 19) involved domestic animals, while the remaining 63 percent (or 12 out of 19) involved wild animals. Five of 12 (42 percent) occurred between MP 34.0 and MP 34.5, and 4 of 12 (30 percent) occurred between MP 35.9 and MP 36.8.

The MDT roadkill database contained 19 records over a 9 year period between MP 32.9 and MP 37.5. The information contained in the database is not inclusive of all possible incidents of animal/vehicle collisions in the area because not all incidents are reported. The MDT Animal Incident Reporting System is an opportunistic collection and reporting system. As a result, there is no guarantee that the information being provided is accurate or statistically valid.

This sample size is too small to analyze statistically, however it does demonstrate that mule deer suffer the highest proportion of large mammal fatalities (11 out of 14 records, or 79 percent). One large carnivore, a mountain lion, was killed just south of the project area at MP 31. Other wildlife species included skunks, rabbits, and beaver. Based on roadkill data, two segments of the project area appear to have higher kill rates than the rest of the project area. Five mortalities occurred within MP 34 (36 percent), and six within MP 37 (43 percent) at the northern end of the project area. The two databases overlap near MP 34, but indicate different cluster areas at MP 36 (collisions) and MP 37 (roadkill). Figure 3-8 shows locations of collisions and road-kills.

Figure 3-8 Animal-Vehicle Collisions and Roadkill Locations



Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.
Note: Individual maps from this map index are included in the BRR prepared for this project.

Impacts

Widening of the road surface may reduce or alter some wetland habitats, thereby impacting birds, mammals, and amphibians that rely on this habitat for breeding, forage, or travel. These are anticipated to be sliver impacts on large wetland complexes that extend far beyond the highway corridor.

The acreage loss for each habitat type depends on specific design features, such as shoulder widths, and on minimization of construction activities within the project area. Shrub and tree recovery depends on the plant species; it may take several years for the species to become re-established along the expanded right-of-way. Grass and forbs will begin to recover immediately and re-establish over subsequent growing seasons.

The project area is bordered by the Deerlodge National Forest to the west, and a riparian buffer and agricultural lands to the east. Therefore the project area will not be subject to an increase in development often associated with highway improvements.

Mitigation

As documented in the list of commitments and considerations in Section 2.2, the Preferred Alternative will minimize the roadway footprint and associated impacts to existing wildlife habitat to the extent practicable.

MDT will implement appropriate combinations of wildlife mitigation strategies, including wildlife friendly fencing and vegetation management facilitating at-grade crossings at desired locations with additional signing and barrier fencing around curves and in areas with limited roadside visibility. MDT will negotiate wildlife fencing options with adjacent landowners and install appropriate wildlife fencing combinations as negotiated or on MDT right-of-way to facilitate wildlife movement within the highway corridor. MDT will consider wider shoulders cleared of vegetation, which can improve sight distance for both wildlife and drivers throughout much of the corridor, while incorporating tree planting to provide cover to encourage animal movement at desirable locations.

MDT is pursuing experimental application of an electro-mat feature in association with at-grade crossings for wildlife, facilitated by a combination of barrier and wildlife friendly fencing. MDT will continue to evaluate this technology for use within the Boulder-South corridor and incorporate it if appropriate.

If overhead power lines are relocated during construction, they will be raptor-proofed in accordance with MDT policies.

MDT will consider structure enhancements to provide wildlife crossing opportunities, including adjusting the dimensions of the bridge over the Little Boulder River to enhance underpass crossing and appropriately sizing culverts to allow small animal movement, where practicable. With the exception of the Little Boulder River, underpass crossings are not feasible due to the high water table and low road grade throughout this corridor. Elevating the road grade to accommodate underpasses is not feasible because it would increase the fill footprint, resulting in increased wetland, irrigation, river, and vegetation impacts, and would require additional right-of-way acquisition. MDT has also determined that wildlife overpass crossing facilities are not

feasible in this corridor due to high cost, additional right-of-way needs, and associated impacts to wetland, irrigation, river, and vegetation resources in the corridor.

Aquatic Species

The Boulder and Little Boulder Rivers support several native fish species as well as brook, brown, and rainbow trout, as detailed in Table 3.5.

Table 3.5 Fish Species Documented in Boulder and Little Boulder Rivers

Common name	Scientific name	Abundance[a]	
		Little Boulder	Main Boulder
longnose dace	*Rhinichthys cataractae*	common	rare
white sucker	*Catostomus commersonii*	rare	rare
longnose sucker	*Catostomus catostomus*	rare	rare
mottled sculpin	*Cottus bairdii*	abundant	rare
mountain whitefish	*Prosopium williamsoni*	rare	rare
brown trout	*Salmo trutta*	common	common
brook trout	*Salvelinus fontinalis*	common	rare
rainbow trout	*Oncorhynchus mykiss*	common	rare/common
westslope cutthroat trout[b]	*Oncorhynchus clarkii lewisi*	rare	NA

[a]MFISH notes that the information on abundance for all species in these streams is extrapolated based on surveys conducted in 1976, 1994, and 2003.
[b]Most likely limited to upper reaches of the North Fork Little Boulder River, outside of the project area (MNHP 2008).
Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.

Several small trout were observed in shallow areas of the Boulder River, and in ditches near their confluences with the Boulder River. No population estimates or quantitative surveys were conducted. Fish habitat in the Boulder River appeared to be of good diversity and quality. In 2005, filamentous algae coated rocks and substrate in some parts of the river. Water temperatures were much warmer in the main Boulder than in the tributaries, which probably contributed to the proliferation of algae in the Boulder River. Substrate in the tributaries and in the Little Boulder River was predominately clean and the water was much cooler. The tributaries are probably important refuges for trout when summer water temperatures climb in the main Boulder River.

All of the species listed in Table 3.5 and described in this section are assumed to occur in the project area, although many species are more common in the Little Boulder River than in the Boulder River. While these species have the potential to occur, some species such as westslope cutthroat trout and other salmonids have a low probability of occurring in the project area during the typical summer construction season because of elevated stream temperatures and dewatering, particularly in the Boulder River.

Impacts

Widening of the road surface may reduce or alter riparian vegetation along the river channel, which may disrupt river channel dynamics and increase sedimentation during stormwater runoff events, thereby impacting aquatic species.

Mitigation

MDT will shift the alignment in the locations identified in Table 2.1 in order to avoid project-related encroachment of the road into the Boulder River. Actions that prevent sedimentation and

restrict construction timing may prevent or reduce impacts to aquatic species. Construction activities will be in compliance with the conditions of the SPA 124 (FWP) and the CWA 404 (USACE), which may include instream timing restrictions to minimize impacts to the fishery.

Species of Concern

The term "Species of Concern" includes species that are at-risk or potentially at-risk due to rarity, restricted distribution, habitat loss, and/or other factors. The term also encompasses species that have a special designation by organizations or land management agencies in Montana, including BLM Special Status and Watch species; USFS Sensitive and Watch species; U.S. Fish and Wildlife Service (USFWS) Threatened, Endangered and Candidate species. Federally listed species are discussed in detail in a later section.

Table 3.6 lists animal species of concern which may occur in the project area.

Table 3.6 Animal Species of Concern in Project Area

Common name	Scientific name	Potential Impacts	Last Observed	Environmental Baseline / Occurrence in Project Area
bald eagle	*Haliaeetus leucocephalus*	Nesting bald eagles are sensitive to human disturbance and may abandon nests prior to hatching. Young may leave nest due to disturbance.	2008	Spring and fall migrant, nesting in project area.
gray wolf	*Canis latrans*	Minimal to none. Species is highly mobile and will likely avoid human activity during construction. Crossing mitigation may reduce chance of vehicle collisions.	2006	Resident in area. No known den sites or occupied pack territories.
wolverine	*Gulo gulo*	Minimal to none. Very low percentage of suitable habitat occurs in project area. Species is highly mobile and will likely avoid human activity during construction. Crossing mitigation may reduce chance of vehicle collisions.	2006	Resident in area. No known den sites.
western spotted skunk	*Spilogale gracilis*	Minimal. Animal is very rare in Montana, and has not been seen in the project area since 1995. If present, some temporary loss of foraging or cover habitat may occur during construction.	1995	Very rare in Montana. No known den sites.
westslope cutthroat trout	*Oncorhynchus clarkii lewisi*	Minimal. Species collected upstream in North Fork Little Boulder River. Species has a low probability of occurring in the project area during the typical summer construction season because of elevated stream temperatures and dewatering, particularly in the Boulder River. There is some potential for this species to occur in the project area.	NA	Migratory species; may reside in the Little Boulder River for some portions of the year. Species not documented in the area.

[1]Key to rankings: G = Global rank based on range-wide status, S = State rank based on status of species in Montana.
Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009; MNHP, 2010.

Bald Eagle

The bald eagle was federally delisted from the ESA on August 9, 2007 by the USFWS, but is still protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Therefore management guidelines taken from the Montana Bald Eagle Working Group (MBEWG) Bald Eagle Management Guidelines (2009) and the National Bald Eagle Management Guidelines (USFWS 2007) are discussed in this section.

The MBEWG defines Nest Site Management Zones as concentric circles expanding from an active nest and notes that visual buffers within ¼ mile of nest sites should not be removed. During field surveys conducted on May 28, 2008, an active bald eagle nest was identified along the main channel of the Boulder River on the east side of the highway opposite the Boulder Hot Springs property approximately 0.11 miles from MT 69 and visible from the road at MP 34.3±. Due to the relative proximity of the nest, a portion of the project is located in an area defined as Zone I, or the area within a ¼ mile (400 m) radius of an active nesting site. One chick was observed sitting on the edge of the nest, and both adults were viewed at different times. This occurrence was not included in the MNHP database and has been submitted for inclusion.

Other Species of Concern

The 2005 MNHP database searches documented two wildlife species of interest, which are located near the proposed project area. A great blue heron (*Ardea herodias*) rookery with eighty-six birds was located south of Clark Gulch, on the east side of MT 69, in large cottonwoods on the floodplain. A mountain plover (*Charadrius montanus*) occurrence documented attempted breeding in 1994 near Cabin Gulch on the east side of MT 69. However, these sites are outside of the current project boundaries and are unlikely to be affected by the project as currently described.

Impacts

Minimal impacts to the wolverine, western spotted skunk, and gray wolf are anticipated as a result of this project. These species are highly mobile and will likely avoid human activity during construction; further, animal crossing mitigation measures may reduce chance of vehicle collisions. With regard to the bald eagle, human activity may cause adults to abandon nest, exposing young to risk of mortality. Impacts to westslope cutthroat trout are similar to those described for other aquatic species.

Mitigation

Actions recommended for other aquatic species may also protect westslope cutthroat trout, including prevention of sedimentation and restricted construction timing.

Table 3.7 provides guidance on timing to avoid disturbing nesting bald eagles with human activity. Disturbance can include blasting, heavy machinery operations, road construction activities, and human noise and movement. Additional information can be found in the MBEWG (2009) guidelines.

Table 3.7 Sensitivity of Nesting Bald Eagles to Human Activity

Phase	Activity	Inclusive Dates	Sensitivity to Human Activity	Comments
I	Nest Building / Courtship	Feb 1 - April 15	Most sensitive	Most critical period manifested by nest abandonment. Nest site tenacity is weakest in new breeding areas.
		December 1 – December 31	Moderately sensitive	
II	Egg Laying / Incubation	Feb 15 - May 31	Most sensitive	Human activity of even limited duration may cause desertion, not only of nest sites, but also of long established breeding areas. Flushed birds leave eggs unattended. Eggs are susceptible to cooling, loss of moisture, overheating, and predation.
III	Hatching / Rearing	May 1 - Aug 15	Moderately sensitive	As hatching approaches most birds become tenacious to clutches. Generally uncommon to abandon a nest after young have hatched. First half of nesting period, unprotected young are most susceptible to elements.
IV	Fledging	June 15 - Aug 15	Least sensitive	Nestlings may miss feedings which may affect survival of young birds. Risk to young prematurely leaving nest due to disturbance.
V	Wintering / Migration	October 1 – April 15	Least sensitive	

Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009; MBEWG, 2009.

Based on the guidelines listed in Table 3.7, some construction activities, including structure and vegetation removal, may be subject to timing restrictions. The large perching trees near the Boulder River will be avoided during the critical periods as defined in Table 3.7; however, it is unlikely that any of these trees will need to be cleared during this project.

Threatened and Endangered Species

There are two Threatened and Endangered Species that may occur within the project area, as presented in Table 3.8.

Table 3.8 Threatened and Endangered Species with Potential to Occur in Project Area

Common name	Scientific name	Potential Impacts	Habitat	General Reasons for Decline	Last Observed	Environmental Baseline / Occurrence in Project Area
Canada lynx	*Lynx canadensis*	Minimal to none. Very low percentage of suitable habitat occurs in project area. Species is highly mobile and will likely avoid human activity during construction. Crossing mitigation may reduce chance of vehicle collisions.	The Elkhorn, Boulder, and Highland mountain ranges have relatively continuous habitat for this species.	Human-caused mortality, habitat loss and fragmentation	2003	Resident in area. No known den sites.
Ute ladies'-tresses	*Spiranthes diluvialis*	Habitat disturbance and hydrologic alteration due to construction.	Meandered wetlands and swales in broad, open valleys, at margins with calcareous carbonate accumulation	Land use and alteration of habitat	NA	Known to occur in Jefferson County

Source: Biological Resources Report for the Boulder South, Highway 69 Project, 2009.

Canada Lynx

Canada lynx exist near the project area and were last documented by MNHP in 2006. MNHP notes that Canada lynx are found in the Elkhorn Mountains, east of the project area. No critical lynx habitat exists in the project area. The adjacent Beaverhead/Deerlodge National Forest has no documented occupancy of lynx in the forest.

Suitable habitat in the project area is limited and lynx presence would likely consist of transitory animals. Direct mortality from project construction itself is not expected. Direct and indirect effects to lynx may occur through highway mortality, and through possible riparian and wetland habitat loss. Riparian and scrub/shrub wetland habitats are important to lynx because they provide foraging, breeding and cover habitat for their primary prey, snowshoe hare. Lynx may avoid the area during construction activities, and no known dens exist in the area.

No lynx road kills have been reported, and there are no known den sites in the project area. Lynx have large home ranges in this region due to low snowshoe hare densities. Low snowshoe hare densities lessen the impact of loss of riparian and wetland habitats in the project area. Based on this information minor project impacts are expected, and therefore the project is **not likely to adversely affect Canada lynx or its habitat.**

Ute ladies'-tresses

Potential habitat for Ute ladies'-tresses (*Spiranthes diluvialis*) was identified in the project area during botanical surveys performed in 2005. In early August 2008, the project corridor was surveyed and over 250 plants were catalogued. Through consultation with MNHP and the botanist who originally identified the species, it was determined that the plants within the Boulder – South project area are not Ute ladies'-tresses, but are the more common hooded ladies'-tresses (*Spiranthes romanzoffiana*). It is unlikely that both species inhabit the Boulder site as they are seldom found growing together, but a mixed population cannot be entirely ruled out.

Given this possibility, road construction has the potential to directly impact plants by crushing, displacing soil and plants, or smothering with slash or soil. Road construction would also render potential habitat unavailable for colonization or use.

Although the 250 individual plants were identified as *S. romanzoffiana*, it is not inconceivable that the populations observed might be mixed and contain some *S. diluvialis* individuals. Based on this conclusion, minor project impacts are expected and therefore the project is **not likely to adversely affect Ute ladies'-tresses or its habitat.**

Air Quality

The proposed project is located in an unclassifiable/attainment area of Montana for air quality under 40 CFR 81.327, as amended. As such, this proposed project is not covered under the U.S. Environmental Protection Agency (EPA)'s Final Rule of September 15, 1997 on Air Quality Conformity.

The EPA has also identified a group of 21 mobile source air toxics (as set forth in EPA's final rule, *Control of Emissions of Hazardous Air Pollutants from Mobile Sources*) and extracted six

priority Mobile Source Air Toxics (MSATs) considered to be priority transportation toxics. This project will not result in meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the No Build Alternative. Consequently, this effort is exempt from analysis for MSATs.

Impacts

No permanent air quality impacts are anticipated as a result of this proposed project. Temporary air quality impacts related to construction are discussed in Section 3.4.

Mitigation

No mitigation is proposed or required.

3.4 Construction Impacts

No Build Alternative

Impacts

There would be no construction impacts resulting from the No Build Alternative.

Mitigation

No mitigation is proposed or required.

Transportation

Impacts

Construction activities from the Preferred Alternative would likely cause temporary impacts to traffic flow, especially in relation to the removal of the existing bridge and construction of the new bridge crossing the Little Boulder River. MDT may consider a temporary closure, phased construction, or a temporary detour in order to accommodate construction activities, including blasting and bridge construction activities.

Mitigation

Traffic interruptions would be minimized to the extent practicable. Advance warning and detour signing would be in accordance with the Manual on Uniform Traffic Control Devices. Blasting activities would be conducted in accordance with the Controlled and Production Blasting guidelines contained in MDT's Special Provisions.

Community

Impacts

Construction activities from the Preferred Alternative could cause temporary inconveniences to area residents and tourist travelers. These could occasionally result in longer travel times, detours, temporary closures, and noise and dust due to the use of heavy machinery.

Mitigation

Traffic interruptions would be minimized to the extent possible. Advance warning and detour signing would be in accordance with the Manual on Uniform Traffic Control Devices.

The project's contractor would be subject to all applicable laws and regulations and all requirements contained in the contract regarding noise pollution. Dust control would also be implemented by using either water or another approved dust-suppressant.

Natural/Physical Environment

Impacts

Temporary impacts to wildlife may include loss of some habitat within the vicinity of the construction zone. The project may also temporarily affect individual species through noise, vibration, human activity, and construction location and equipment. Loss of nesting, foraging, and cover habitat may occur from either direct removal of habitat for the road alignment and side slopes, or from temporary vegetation clearing for construction staging activities.

Effects vary by species and type of habitat occurring in the project area. During construction activity, more mobile species such as adult birds, elk, moose, large carnivores, and other large and mid-size mammals generally move to adjacent habitats to avoid direct mortality from construction activities. Some less mobile species or individuals may suffer direct mortality from construction activities. The habitats within the project area that may be disturbed during project construction are currently subject to relatively low levels of human development and recreational disturbance. These habitats extend far beyond the highway corridor, and refuge habitat will be available for occupation by the more mobile species moving away from the disturbance of construction activities.

There is potential for short-term water quality impacts due to increased erosion and sedimentation during construction activities.

During construction, surface water runoff could be contaminated by spills of petroleum products, lubricants, and hydraulic fluid from construction equipment.

Construction activities could occasionally and temporarily result in road dust and combustion emissions due to the use of heavy machinery and generators.

As noted previously, MDT may consider a temporary detour to accommodate construction activities. If agreeable to the County, it may be possible to utilize the County Road system from Hubbard Lane to White Bridge Road as a detour. If so, minimal temporary impacts would result to the land areas immediately adjacent to the County road system. If this detour is not feasible, a more localized detour at the Little Boulder River Bridge may be required. A localized detour would require a temporary bridge structure crossing the Little Boulder River and is anticipated to result in approximately 0.7 acres of temporary impacts to adjacent areas.

Mitigation

To minimize impacts to actively nesting birds in the project area, contractors will follow suggested timing restrictions for activities likely to cause disturbance, including blasting, structure and vegetation removal. The large perching trees near the Boulder River will be avoided during the critical periods as defined in Table 3.7; however, it is unlikely that any of these trees will need to be cleared during this project.

The construction contractor will obtain authorization under the construction General Storm Water Discharge Permit from DEQ and will prepare and adhere to their Storm Water Pollution Prevention Plan (SWPPP) and temporary facilities permits. In general, BMPs would be used to minimize the effect of sedimentation and/or run-off during the roadway construction periods.

Asphalt plants and gravel crushers that may be required for roadway construction for the Preferred Alternative may require air quality permits to be obtained by the contractor. The contractor will be required to operate all equipment to meet the minimum air quality standards established by federal, state, and local agencies. The location of any new staging, crushing or borrow sources will require review for cultural and biological resource impacts.

3.5 Cumulative Impacts

Other Recent and Pending Actions

- *Basin – Boulder*
  This mill/fill seal and cover project is located on I-15 from RP 157.7 to 163.1 and was let to contract in February 2009. Project completion is estimated for summer of 2010.
- *Elkhorn Road South*
  This roadway reconstruction project is located south of the Boulder – South project on MT 69 from approximately RP 22.3 to RP 31.8 and was let to contract in January 2010. Project completion is estimated for summer of 2011.
- *JCT S-359 – North*
  This seal & cover project is located on Montana Highway 69 from approximately RP 6.1 to RP 22.3 and is anticipated to be let to contract for the 2011 construction season.

Each of the above projects has safety enhancement and improved operations as key objectives. Their implementation could have positive cumulative effects on safety, but it is unlikely that they would have cumulative environmental impacts because of their distance from one another. There are no other projects in the area that would contribute to cumulative impacts when considered in conjunction with the proposed project.

Impacts

The Preferred Alternative would not increase roadway capacity and therefore would not induce land use changes or promote unplanned growth. Reconstruction of the roadway will likely result in positive impacts on safety performance for area residents, tourist travelers, and service and emergency vehicles. These improvements could not be provided under the No Build Alternative.

4.0 SECTION 4(f) IMPACT DETERMINATIONS

Section 4(f) was created when the US Department of Transportation was formed in 1966. It was initially codified in the US Code at 49 U.S.C. 1653(f) (or Section 4(f) of the USDOT Act of 1966). Later that year, 23 U.S.C. 138 was added. In 1983, Section 1653(f) was reworded and recodified at 49 U.S.C. 303. These two statutes have no real practical distinction and are still commonly referred to as "Section 4(f)."

Section 4(f) declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that "[t]he Secretary [of Transportation] shall not 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, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park area, refuge, or site) unless:

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.

Congress amended Section 4(f) in 2005 when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes FHWA to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance alternatives typically required in a Section 4(f) Evaluation. Section 6009 amended 23 U.S.C. 138 to state:

> The requirements of this section shall be considered to be satisfied and an alternatives analysis not required if the Secretary determines that a transportation program or project will have a *de minimis* impact on the historic site, parks, recreation areas, and wildlife or waterfowl refuges. In making any determination, the Secretary shall consider to be a part of the transportation program or project any avoidance, minimization, mitigation, or enhancement measures that are required to be implemented as a condition of approval of the transportation program or project. With respect to historic sites, the Secretary may make a finding of *de minimis* impact only if the Secretary has determined in accordance with the consultation process required under Section 106 of the National Historic Preservation Act that the transportation program or project will have no adverse effect on the historic site or there will be no historic properties affected by the transportation program or project; the finding has received written concurrence from the State Historic Preservation Officer; and the finding was developed in consultation with the parties consulted under the Section 106 process.

4.1 Coordination

As discussed in the EA for this proposed project, two historic NRHP-eligible properties would be impacted by the Preferred Alternative. As stated in the *Guidance for Determining De Minimis Impacts to Section 4(f) Resources* (FHWA 2005), SHPO must concur in writing with the Section 106 "no effect" determination and must be informed that FHWA intends to make a *de minimis* finding based on the Section 106 effect determination. Consulting parties under Section 106 must also be informed of the *de minimis* finding. On August 12, 2008, MDT submitted an initial letter to SHPO requesting concurrence with the determination of "no effect" for the State Ditch and noting that the Little Boulder River will be treated under the terms of the Historic Roads and Bridges Programmatic Agreement. On May 7, 2010, MDT submitted a second letter to SHPO requesting concurrence with a revised determination of "no effect" based on an updated understanding of project impacts to the State Ditch. SHPO concurred with the "no effect" determination on the State Ditch (see correspondence in Appendix A). FWHA subsequently made a *de minimis* finding with respect to the State Ditch.

In their letter dated July 8, 2010, the National Park Service (NPS) advised that Historic American Engineering Recording (HAER) documentation would not be necessary for the Little Boulder River Bridge (see correspondence in Appendix A).

There would be no parks, recreation areas, or wildlife or waterfowl refuges that would be converted to a transportation use by the Preferred Alternative.

4.2 Proposed Action

The proposed action is a rehabilitation/reconstruction and widening project on an approximately six-mile portion of MT 69 south of the town of Boulder. The work may include widening of the roadway, signing and pavement markings, facilities for pedestrians and bicyclists, and wildlife crossing measures. The purpose of the proposed project is to improve safety for users of the project corridor while mitigating project impacts to the surrounding natural and built environments.

4.3 Section 4(f) Properties

There are two properties in the Boulder-South corridor that are NRHP-eligible and protected by Section 4(f), including the historic State Ditch and Little Boulder River Bridge. Table 4.1 identifies each property and the location, eligibility for protection, and the determination of effect for each resource. Figures 4-1 and 4-2 illustrate the location of each protected property and the anticipated area of impact.

Table 4.1 Properties Protected by Section 4(f)

Property	Location	Site No.	Type of Structure	Eligibility	Effect
State Ditch	MP 37.2±	24JF1881	Ditch	Individually	No Effect
Little Boulder River Bridge	MP 34.6±	24JF0813	Bridge	Individually	Adverse Effect

Figure 4-1 Proposed Impacts to State Ditch

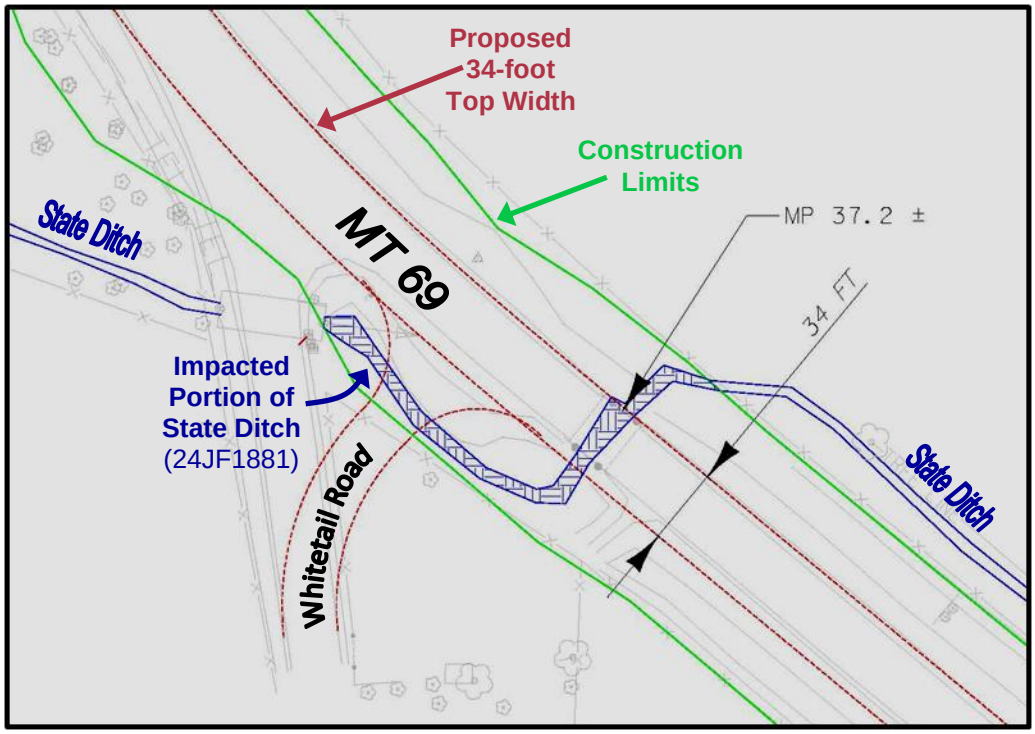
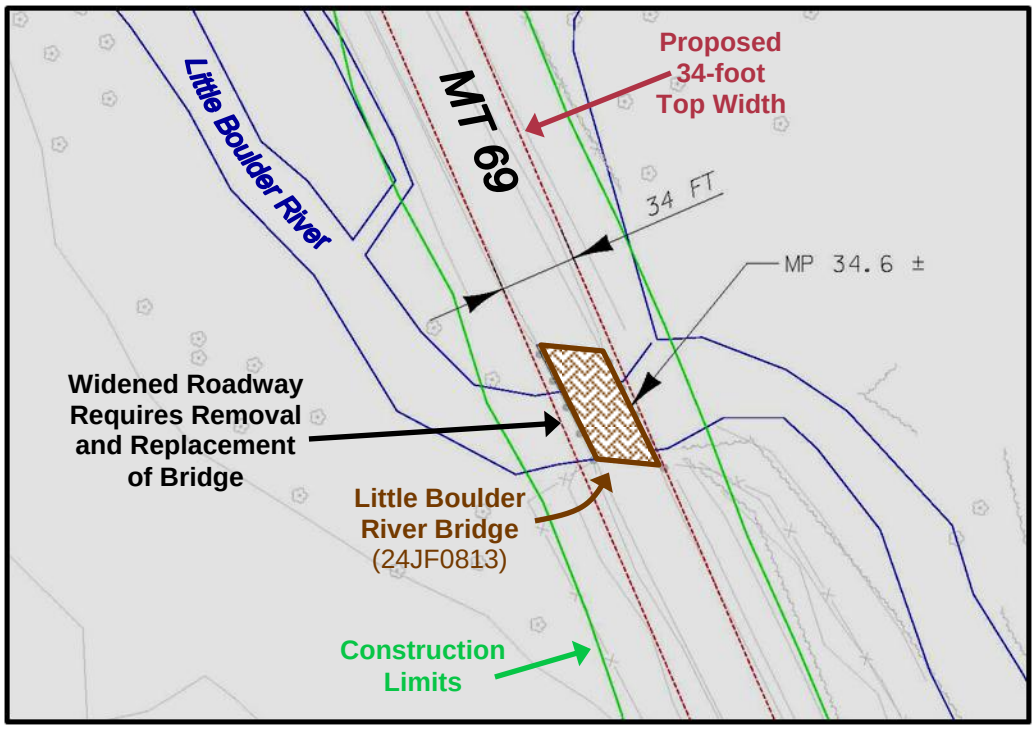


Figure 4-2 Proposed Impacts to Little Boulder River Bridge



State Ditch

Impacts to the State Ditch are limited to right-of-way encroachments necessary for the installation of wider shoulders. The encroachment will require rechanneling up to 300 feet of the State Ditch. The ditch would continue to function in its historic capacity and there would be no change in the existing alignment of the ditch, its dimensions, setting, use, or appearance as a result of the project. Accordingly, no mitigation would be required for the State Ditch.

MDT has coordinated the proposed impacts to this property with SHPO (see correspondence in Appendix A).

Little Boulder River Bridge

The Little Boulder River Bridge does not meet current standards and has a low design load, and will therefore need to be replaced in accordance with the Historic Roads and Bridges Programmatic Agreement contained in Appendix C. Because this structure cannot remain in its current location, removal of the bridge constitutes a "use" of this Section 4(f) property. A Programmatic Section 4(f) Evaluation for the Little Boulder River Bridge is included in Appendix B.

MDT has coordinated the proposed impacts to this property with SHPO, ACHP, and NPS (see correspondence in Appendix A and Programmatic Agreement in Appendix C).

5.0 PERMITS AND AUTHORIZATIONS

The proposed action would be in compliance with both the water quality provisions of 75-5-318 MCA for Section 318 authorizations and stream protection under Sections 87-5-501 through 509 MCA, inclusive. An on-site review of the proposed project area would be conducted with representatives from regulatory agencies if necessary. Comments, suggestions, and/or conditions resulting from review of existing data and/or on-site inspections would be documented, included in the proposed project's files, and taken into account in the final design specifications.

The proposed action would require the following permits or authorizations under the CWA (33 U.S.C. 1251-1376, as amended):

- A Section 402/Montana Pollutant Discharge Elimination System (MPDES) authorization from the DEQ's Permitting & Compliance Division. The Build Alternative would require new right-of-way and require an MPDES construction phase permit, which is issued in response to the 1987 re-authorization of the CWA. The CWA requires EPA to institute a National Pollutant Discharge Elimination System (NPDES) permitting program for storm drainage systems or to approve the state's programs. EPA approved Montana's program in 1987.

  Obtaining the MPDES permit requires development of a SWPPP that includes a temporary erosion and sediment control plan. The erosion and sediment control plan identifies BMPs as well as site-specific measures to minimize erosion and prevent eroded sediment from leaving the work zone.

- Section 404 Permit and SPA 124 notification. The project may affect the Boulder River, a Water of the U.S., as well as wetlands. A 404 permit from the USACE would be required for wetland fill in addition to fill into the Boulder and Little Boulder rivers, ephemeral and intermittent drainages, and some affected irrigation ditches. A SPA 124 Notification to FWP would be required for impacts to the Boulder and Little Boulder rivers and affected ephemeral and intermittent drainages. BMPs would be followed to prevent dirt and debris from entering the stream where adjacent to construction activities. Necessary permits and notifications would be required prior to the commencement of disturbance to jurisdictional waters.

- Floodplain Development Permit within a designated 100-year floodplain. A floodplain development permit would be required because work would be conducted in the floodplain.

All work would also be in accordance with the Water Quality Act of 1987 (P.L. 100-4), as amended.

6.0 COMMENTS AND COORDINATION

6.1 Agency Coordination

State and federal regulatory agencies were asked to participate in the EA process in order to foster communication, identify and resolve issues, and provide timely and constructive comments on draft work products. Letters were sent to the following regional, state, and federal resource agencies as a notification that FHWA, in cooperation with MDT, propose to reconstruct a portion of MT 69.

- Department of Natural Resources and Conservation (DNRC)
- BLM
- USACE
- USFWS
- DEQ
- Montana Fish, Wildlife & Parks (FWP)
- EPA
- USFS
- Jefferson County Board of Commissioners
- City of Boulder

Through these letters, MDT requested each agency's participation in identifying concerns that would need to be addressed through the environmental review process. Copies of interagency correspondence are included in Appendix F of the Alternatives Analysis document and are incorporated by reference.

An initial Agency Coordination Meeting was scheduled with the regulatory agencies with jurisdiction, interest, or expertise on issues within the study corridor. This meeting was held on July 30, 2008 and consisted of a presentation of the Purpose and Need for the proposed project, the alternatives to be considered, and the proposed methodologies to be used for the environmental analyses. Representatives were present from DEQ, FWP, USACE, USFWS, EPA, BLM, and Jefferson County. DNRC and the City of Boulder declined to participate in the project.

A second Agency Coordination Meeting was held on December 17, 2008. The intent of this meeting was to discuss agency concerns regarding the Alternatives Analysis and the BRR documents. Representatives from DEQ, FWP, USFWS, EPA, BLM, and Jefferson County attended the meeting. Written comments received from agencies regarding these technical documents and other matters are included in Appendix F of the Alternatives Analysis document and are incorporated by reference.

A third Agency Coordination Meeting was held on November 20, 2009 to discuss the revised Alternatives Analysis document. Representatives from USFWS, USACE, FWP, and DEQ attended the meeting. Written comments received from agencies following this meeting are included in Appendix F of this EA.

6.2 Public Involvement

Public Meetings

A public scoping meeting was conducted under the NEPA/MEPA process for this proposed project and held at the Jefferson High School on June 1, 2005 at 6:30 p.m. The meeting format included a formal presentation and a question/comment period. The purpose of the meeting was to introduce the project and gather public opinion regarding issues and concerns related to transportation in the MT 69 corridor. The southern (MP 22.3 to MP 31.8±) and northern (MP 31.8± to MP 37.5±) portions of the proposed project and two alignment alternatives for the northern portion were presented at the public meeting. One alignment option involved reconstruction of the existing MT 69 alignment, and one involved construction of a new alignment on the east side of the Boulder River following an existing Jefferson County road as much as practicable. Aerial photographs illustrating the proposed centerline of the existing alignment and the alternate alignment alternatives were displayed around the room. Approximately 100 people attended the meeting and the majority of those in attendance expressed their disapproval of any new alignment east of the river. A transcript of the meeting is included in Appendix B of the Alternatives Analysis document and is incorporated by reference.

The meeting location was accessible under the Americans with Disabilities Act (ADA). Contact information was obtained from attendees by having a dedicated greeter who welcomed citizens to the event, ensured sign-in, distributed a project newsletter, and provided a brief project overview. Participants were encouraged to provide written comments via a comment sheet. Comments received at and following the meeting are included in Appendix C of the Alternatives Analysis document and are incorporated by reference.

Members of the public were invited to comment on the Purpose and Need for the project. A newspaper advertisement was published in the Boulder Monitor announcing the availability of the Purpose and Need statement on the project web site and inviting public comments. No written public comments were received during the public comment period from September 10, 2008 to October 10, 2008 with regard to the project Purpose and Need.

A Public Information Meeting was held on March 23, 2010 at the Jefferson High School in Boulder. The meeting location was accessible under ADA. The meeting format included a presentation with questions and comments provided throughout the presentation. The purpose of the meeting was to discuss the status of the project, present the alternatives eliminated during the Alternatives Analysis process completed in 2009, provide an update on the EA, and gather public input. Sixty-five members of the public signed in for the meeting. Numerous written comments were received during the comment period.

Additional Public Involvement Events

A Public Hearing will be conducted to obtain comments on this Environmental Assessment during the public review and comment period. Notice of availability of this document and notice for the Public Hearing have been published in the *Boulder Monitor*. Public Hearing notices have been sent to the project mailing list, and the notice has been posted on the project website at www.mdt.mt.gov/pubinvolve/boulder/

Comments on this EA may be submitted electronically on MDT's website at www.mdt.mt.gov/pubinvolve/boulder/ or at the Public Hearing, or by writing to MDT at:

Tom S. Martin, P.E.
Environmental Services Bureau Chief
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001
Email address: tomartin@mt.gov

Written comments are due by the date indicated in the Distribution Letter attached to this EA. A formal Public Hearing will also be conducted in Boulder during the 30-day public review period. A project overview will be provided and attendees will be invited to provide formal comments for the public record.

7.0 LIST OF PREPARERS

Reviewer/Affiliation	Role	Education and Experience
Lloyd H. Rue, P.E., P.T.O.E. Program Development Engineer FHWA	Lead Agency	B.S. Civil Engineering, M.S. Civil Engineering. 24 years experience in geometric design, traffic engineering, and safety.
Brian Hasselbach Right-of-Way and Environmental Specialist FHWA	Lead Agency	B.S. Civil Engineering, B.S. Biology, M.S. Environmental Studies. 11 years of experience with highway engineering, environmental engineering, and program/project management.
Jeff Patten Operations Engineer FHWA	Lead Agency	B.S. Construction Engineering Technology – Over 15 years of professional experience in highway engineering, construction and program/project management.
Joe Olsen, P.E. Butte District Engineering Services Engineer MDT	Lead Agency	B.S., Geological Engineering. Over 23 years experience in highway planning, engineering and design; construction; and both project and program management/development.
Gabe Priebe, P.E. Consultant Project Engineer MDT	Lead Agency	B.S., Civil Engineering, B.A., Mathematics. 10 years experience in construction, highway engineering, planning-level safety analysis and project management.
Tom S. Martin, P.E. Bureau Chief, Environmental Services MDT	Lead Agency	B.S. Civil Engineering - Over 17 years experience in design and management of transportation facilities.
Heidy Bruner, P.E. Engineering Section Supervisor MDT	Lead Agency	B.S. Environmental Engineering, approximately 13 years environmental engineering design and management.

Preparer/Affiliation	Role	Education and Experience
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8.0 DISTRIBUTION LIST

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Attn: Todd Tillinger, Montana Program Manager
Deborah Blank, Project Manager

U.S. Department of the Interior
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Montana Field Office
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Helena, MT 59601
Attn: R. Mark Wilson, Field Supervisor
Anne Vandehey, Wildlife Biologist

U.S. Forest Service
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Montana Department of Natural Resources & Conservation
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Montana Department of Environmental Quality
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Montana Environmental Quality Council
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Office of the Governor
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Attn: Brian D. Schweitzer, Governor

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Montana State Historic Preservation Office
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P.O. Box 201202
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Attn: Dr. Mark Baumler, Historian

Montana State Library
1515 East 6th Avenue, P.O. Box 201800
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Attn: Roberta Gebhardt, Collections Management Librarian

Montana Transportation Commission
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Local Agencies

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201 Centennial
P.O. Box H
Boulder, MT 59632-0249
Attn: Thomas Lythgoe, Chair

City of Boulder
304 N. Main
Boulder, MT 59632
Attn: Gary Craft, Mayor

9.0 LIST OF SOURCES/DOCUMENTS

Big Sky Acoustics, LLC. *Traffic Noise Analysis*. 2008.

Frontier Historical Consultants. *Cultural Resource Inventory and Assessment, Boulder South, Jefferson County, STPP 69-1(9)22, Control No. 2019*. 2007.

Garcia and Associates. *Biological Resources Report for the Boulder South, Highway 69 Project, Project # STPP 69-1(9)22, Control # 2019, Work Type 140*. 2008.

DOWL HKM. *Alternatives Analysis for STPP 69-1(9)22, Boulder-South, (CN 2019), in Jefferson County, Montana*. 2009.

Copies of these reports are available at:

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