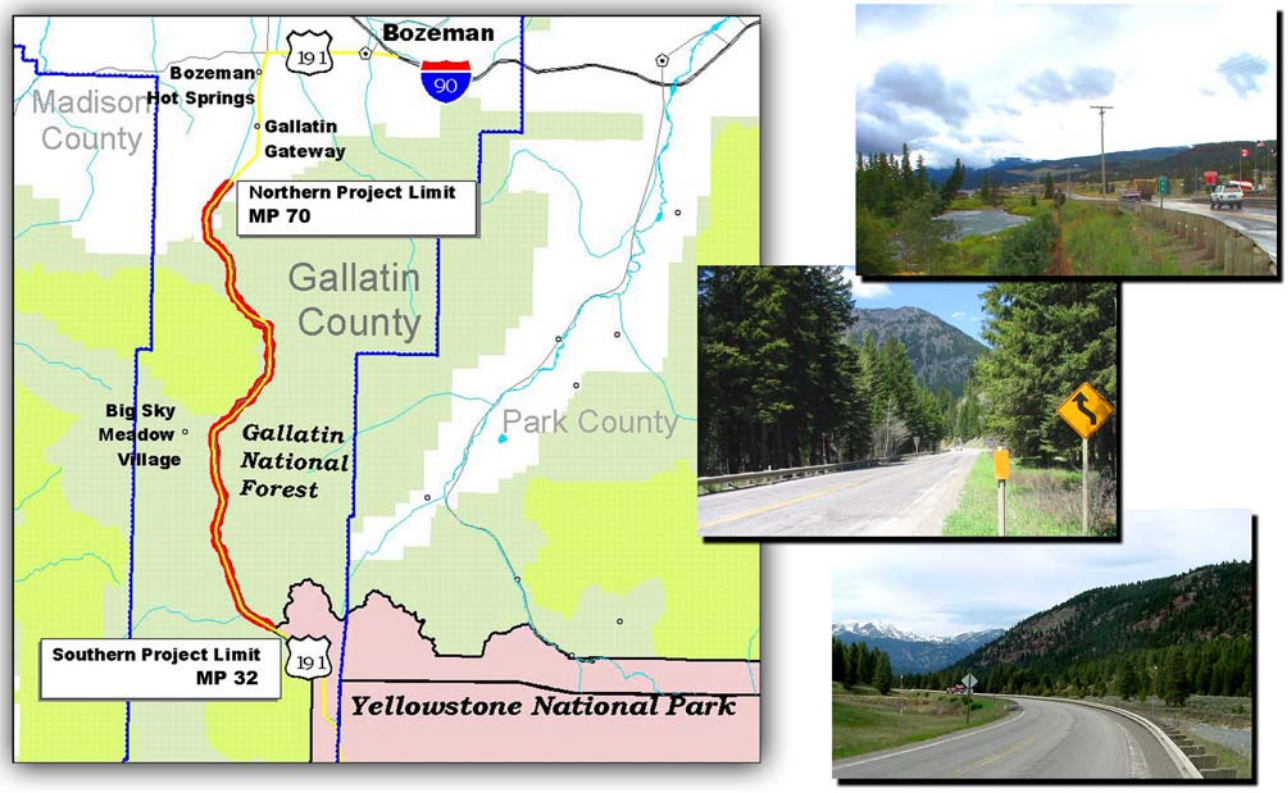
Finding of No Significant Impact

Gallatin Canyon: Slope Flattening/Widening

September 2006

STPHS 50-1(14)8
Control No. A544



Montana Dept. of Transportation

U.S. Department of Transportation
Federal Highway Administration

Finding of No Significant Impact (FONSI)

on the

Environmental Assessment

for

Gallatin Canyon – Slope Flattening/Widening

STPHS 50-1(14)8

CN A544

in Gallatin County, Montana

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.

by the

Montana Department of Transportation

and

U.S. Department of Transportation,
Federal Highway Administration

September 2006

FEDERAL HIGHWAY ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT

For

Project Number: STPHS 50-1(14)8

Project Name: Gallatin Canyon-Slope Flattening/Widening

Control Number: A54

In

Gallatin County, Montana

THE FEDERAL HIGHWAY ADMINISTRATION HAS DETERMINED THAT THE "PREFERRED" ALTERNATIVE FOR THIS PROJECT AS DESCRIBED ON PAGES 2-1 THROUGH 2-4 OF THE ENVIRONMENTAL ASSESSMENT APPROVED NOVEMBER 4, 2005 WILL HAVE NO SIGNIFICANT IMPACT ON THE HUMAN ENVIRONMENT. THIS *FINDING OF NO SIGNIFICANT IMPACT* IS BASED ON THE ATTACHED ENVIRONMENTAL ASSESSMENT WHICH HAS BEEN INDEPENDENTLY EVALUATED BY THE FEDERAL HIGHWAY ADMINISTRATION AND DETERMINED TO ADEQUATELY AND ACCURATELY DISCUSS THE NEED, ENVIRONMENTAL ISSUES, AND IMPACTS OF THE PROPOSED PROJECT AND APPROPRIATE MITIGATION MEASURES. IT PROVIDES SUFFICIENT EVIDENCE AND ANALYSIS FOR DETERMINING THAT AN ENVIRONMENTAL IMPACT STATEMENT IS NOT REQUIRED. THE FHWA TAKES FULL RESPONSIBILITY FOR THE ACCURACY, SCOPE, AND CONTENT OF THE ATTACHED ENVIRONMENTAL ASSESSMENT.

Theodore G. Burch 09/29/2006

Theodore G. Burch, Program Development Engineer — Date

Federal Highway Administration

Project Abstract and Location:

The project is located in Gallatin County, Montana. The purpose is to provide a transportation facility that improves the safety of travel on US191 between MP 32 and MP 70 at specific high accident locations in the corridor.

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1.0 Coordination Process

The proposed action has been coordinated with the appropriate federal, state and local agencies in order to comply with the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA). The Notice of Availability for the Gallatin Canyon – Slope Flattening/Widening Environmental Assessment (EA) was published in several area newspapers and broadcast media on dates as follows:

Press Releases: press releases were distributed to the following radio stations:

KPKX – FM

KGLT – FM

Advertising: display ads were placed in three newspapers on the following dates:

West Yellowstone News (December 16, 2005 & January 6, 2006)

Lone Peak Lookout (December 15, 2005 and January 5, 2006)

Bozeman Daily Chronicle (December 11, 2005 and January 8, 2006)

Copies of the advertising notice and press release are contained in Appendix B. In addition, a postcard announcing the public hearing is included in Appendix B. The public review period began on December 7, 2005 and ended on January 27, 2006. Copies of the Environmental Assessment were available for review beginning December 7, 2005 at the following locations:

Bozeman Public Library, 220 East Lamme, Bozeman

Ophir School District and Library, 45465 Gallatin Road, Gallatin Gateway

Big Sky Post Office, Big Sky

West Yellowstone Public Library, 220 Yellowstone Avenue, West Yellowstone

MDT Butte District Office, 3751 Wynne, Butte

MDT Environmental Services Office, 2701 Prospect Ave., Helena

Gallatin County Offices, 311 West Main, Bozeman

Copies of the EA were available upon request from the Montana Department of Transportation (MDT) and the EA could be viewed at the MDT website address (http://www.mdt.mt.gov/pubinvolve/eis_ea.shtml). State and Federal agencies and local entities were provided with a copy of the EA. The distribution list is included in Appendix B. A complete version of the EA is included in Appendix D.

The Public Hearing for the EA occurred on Tuesday, January 10, 2006 at the Ophir School. The hearing was held from 7:00 PM to 9:00 PM and the presentation began at 7:15. The public hearing was attended by 126 persons. A copy of the sign-in sheet and the transcript is contained in Appendix A. 26 individuals offered comments at the public hearing. These comments and MDT responses are provided in Appendix A.

Subsequent to the public hearing, MDT received written comments from 3 representatives of Federal, State and local agencies as well as 43 individuals. The written comments received during the public comment period are provided in Appendix A, along with MDT responses. The comments indicated five primary concerns with the Preferred Alternative; 1) speed limit/enforcement, 2) traffic signal at MT 64, 3) turnouts, 4) commercial truck traffic, and 5) wildlife issues.

The first three issues are not being addressed as part of this project, but they are being addressed by MDT in separate studies. Excessive speed limits and lack of enforcement of the speed limits in the corridor were a major concern expressed by those who attended the public hearing and submitted comments on the EA. Since the Montana Legislature, per Section 61-8-303, MCA, sets the speed limit, changing the speed limit is not generally something MDT can implement on its own. However, per Section 61-8-309, MCA, the Transportation Commission may "determine upon the basis of an engineering and traffic investigation that a speed limit set by 61-8-303 is greater or less than is reasonable or safe under the conditions found to exist….on a segment of a highway less than 50 miles in length…" MDT will be undertaking the necessary investigations to consider a change in the statutory speed limit. Although speed limits will be evaluated in this corridor as part of a separate study, enforcement of speed limits in the corridor is outside of MDT's jurisdiction.

Residents of the Big Sky area also expressed the need for a traffic signal at the intersection of MT 64 and US 191 to improve safety and traffic flow at that location. This improvement has been evaluated by MDT and became a project in August, was let to contract in September and will be constructed in Fall 2006.

The public was also concerned with the availability of and signage for turnouts in the corridor and how the turnouts are used (or not used) by slower drivers. Existing turnouts in the corridor are primarily intended to provide recreational access to the river and are not designed specifically for use as pullouts for slower vehicles. These turnouts will be evaluated by MDT as part of a separate study to determine what improvements can be made.

Commercial truck traffic was also a common public concern. Public comments suggested restricting commercial truck traffic from US 191, but commercial trucks cannot be restricted from using US 191. US 191 is part of the National Highway System (NHS) and therefore is considered part of the National Network of roads. Federal regulations (23 CFR 658) do not allow states to deny reasonable access of vehicles to the National Network. Additionally, US 191 is a Federal-aid eligible highway and Surface Transportation Assistance Act (STAA) - dimensioned commercial vehicles may legally operate on all Federal-aid eligible highways under State and Federal law.

Wildlife issues related to wildlife crossing and implementation of mitigation measures to improve safety with respect to wildlife in the corridor were also of primary concern. Concerns related to bighorn sheep were identified by both agency and community representatives. MDT is coordinating with Montana Fish Wildlife and Parks (MFWP) regarding signage to warn drivers about bighorn sheep. MDT will also maintain existing wildlife paths beneath bridge structures and will design the new bridge structures so that

bridge beam elevation is comparable to the existing beams thus preserving the ability of wildlife to use these areas. Overpass or underpass structures for wildlife crossing were also suggested, but these measures are not feasible given the physical constraints in the canyon and the limited scope of this safety project. Other mitigation measures suggested to reduce animal / vehicle collisions included "break the beam" technology and deer reflectors and whistles. At this time, break the beam technology is still in the research and testing phase and has not yet been established as a reliable method for reducing animal / vehicle collisions. Deer reflectors and whistles have been tested and have not been proven as technologies that reduce animal / vehicle collisions.

The Finding of No Significant Impact (FONSI) and Revisions to the Environmental Assessment can be viewed at the MDT website address of http://www.mdt.mt.gov/pubinvolve/eis_ea.shtml. State, Federal, and local entities will be notified by letter that this FONSI has been signed.

2.0 Clarifications to the EA

This Addendum identifies clarifications to the Environmental Assessment released in December 2005. Only the sections that changed have been included. Text deleted is shown in strikeout font (for example, ~~project area~~). Text added is shown as underlined (for example, on the average).

Page S-1, Paragraph 1, Edit the last sentence as follows:

US 191 is a two-lane road, which winds through a narrow canyon roughly parallel to the Gallatin River. The current roadway was constructed under three projects between ~~1985 and 1987~~ 1955 and 1967 and has 3.6 m (12 ft) travel lanes, 0.8 m (2 ft) shoulders, no turn lanes, and substandard guardrails and steep side slopes in some locations.

Page S-6, Edit the text in the Mitigation column for Land Use – Private Land:

MDT will pay just compensation for any land taken for the project. No mitigation for changes to land use. See page S-8 for mitigation of right-of-way acquisition.

Page S-12, Edit the text in the Preferred Alternative column under Surface Water as follows:

Minimal additional impacts to Gallatin River and West Fork Gallatin River related to increased impervious surface area and stormwater runoff.

Page S-12, Add the following text after the first paragraph in the Mitigation column under Surface Water:

MDT would adhere to Best Management Practices (BMPs), develop an erosion control and sediment plan prepared in compliance with the Montana Pollutant Discharge Elimination System (MPDES) regulations and adhere to permit conditions in the Montana Stream Protection Act ~~Permit~~ Notification (SPA 124) and COE 404 Permit. Where practicable, bridges will be designed to direct drainage off the ends of the bridge structures. Stormwater runoff directed from the bridge deck ends to outfall points would be filtered via natural vegetative buffer prior to the runoff stream entering the water body.

Page S-12, Add the following text after the last sentence in the Mitigation column under Water Body Modifications:

Culverts would be designed to accommodate fish passage to the extent practicable. MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value. Where culverts are to be added or replaced, they would be designed to accommodate fish passage to the extent practicable.

Page S-17, Replace the following text in the Mitigation column under Fisheries:

~~During final design, MDT would assess clear span bridge structures at Swan Creek and West Fork Gallatin. Riprap would be minimized.~~ MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value. Where culverts are to

be added or replaced, they would be designed to accommodate fish passage to the extent practicable.

Page S-18, Mitigation Column, Construction Impacts under Fisheries

Compliance with water quality permits; SPA 124 and COE 404 permit conditions including any timing restrictions on in stream work as a provision of the SPA 124 ~~Permit~~ Notification.

Page S-19, Mitigation Column, Construction Impacts under Threatened and Endangered Species, Paragraph 4 change SPA 124 Permit to Notification

Page 3-2, Paragraph 5, Edit the second sentence as follows:

Fuel consumption is a function of traffic characteristics including traffic flow, driver behavior, highway geometrics, vehicle fleet and climate. Construction activities would result in a short-term increase in energy consumption during the construction period. Long-term, the proposed improvements may have a negligible benefit and would not contribute to any long-term negative effects on energy.

Page 3-14, Paragraph 5, Add a new paragraph following paragraph 5 with the following text:

MDT would coordinate with the Ophir School District to discuss any concern the district may have regarding the safety improvements and right-of-way impacts.

MDT will pay just compensation for any land taken for the project. No mitigation for changes to land use. See page S-8 for mitigation of right-of-way acquisition. Refer to Section 3.3.3 Right-of-Way and Relocations for a discussion of mitigation for right-of-way acquisition.

Page 3-32:

Paragraph 2, Edit the first sentence as follows:

Six water bodies in the project area are listed in the Section 303(d) 2002 and 2004 reports. These include the Gallatin River; Storm Castle Creek; West Fork Gallatin River; Middle Fork, West Gallatin River; South Fork, West Gallatin River; and Taylor Fork.

Paragraph 3, Add the following text after the second sentence:

The river segment from Spanish Creek north to the Missouri River is assessed with impaired uses for cold water fishery - trout and primary contact (recreation).The probable causes include dewatering and flow alteration and the probable sources are identified as agriculture and crop-related.

Paragraph 3, Edit the third sentence as follows:

The segment of the Gallatin River from Spanish Creek south to the National Park boundary (~~that is~~ adjacent to the proposed improvement areas) has not been assessed

for aquatic life support, cold water fishery – trout, drinking water, or primary contact (recreation).These uses are scheduled to be assessed in 2006.

Page 3-34:

Paragraph 5, Edit the first sentence as follows:

Water quality for the segment of the Gallatin River from the National Park boundary to Spanish Creek ~~within the project area~~ has not been assessed for the 303(d) list, and there are no data suggesting the causes or sources of potential water quality impacts. However, water quality is considered fully supporting for agriculture and industrial uses, and biological monitoring by the Gallatin County Local Water Quality District indicates water quality degradation just north of the project area is only slight.

Paragraph 5, Add the following text after the last sentence:

The minor impacts to water quality of the Gallatin River that may result from this project would not be expected to impair the recreation or habitat values of the river. Water quality for the segment of the Gallatin River from Spanish Creek to the Missouri River is considered impaired for cold water fishery – trout and primary contact (recreation). As discussed above, without proper design and adherence to BMPs, bridge replacements can result in changes to sediment composition and transport rates which can cause flow alteration downstream. No permanent dewatering is associated with this project.

Page 3-35, Paragraph 3, Bullet 4, Change "Montana Stream Protection Act Permit" (SPA 124) to "Montana Stream Protection Act Notification".

Page 3-36:

Paragraph 7, Change "SPA 124 Permit"to"SPA 124 Notifications".

Following Paragraph 7 add the following text:

Where practicable, bridges will be designed to direct drainage off the ends of the bridge structures. Stormwater runoff directed from the bridge deck ends to outfall points would be filtered via natural vegetative buffer prior to the runoff stream entering the water body. MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value.

Where culverts are to be added or replaced, they would be designed to accommodate fish passage to the extent practicable.

Page 3-51:

Paragraph 1, Change (SPA 124) Permit to (SPA 124) Notification.

Add the following text at the end of the Mitigation section:

Additionally, the feasibility of clear spans for each of the crossings along with a minimum amount of riprap due to the natural stability and substrate composition of these tributaries at the confluence of the Gallatin River would be assessed. Where culverts are

to be added or replaced, they would be designed to accommodate fish passage to the extent practicable at any drainage known to have fisheries value.

Page 3-61, Paragraph 1, Change SPA 124 "Permit" to SPA 124 "Notification".

Page 3-63:

Paragraph, 5, Change SPA 124 "Permit" to SPA 124 "Notification"

Paragraph 5, Revise the following text

MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value. Where culverts are to be added or replaced, they would be designed to accommodate fish passage to the extent practicable. Fish passage would be maintained during construction activities. Compliance with water quality permits and notifications; SPA 124 ~~permit~~ notification and COE 404 permit conditions would be followed during construction including any timing restrictions on in stream work issued as a provision of the SPA 124 ~~permit~~ notification.

US 191 is a two-lane road, which winds through a narrow canyon roughly parallel to the Gallatin River. The current roadway was constructed under three projects between ~~1985 and 1987~~ 1955 and 1967 and has 3.6 m (12 ft) travel lanes, 0.8 m (2 ft) shoulders, no turn lanes, and substandard guardrails and steep side slopes in some locations.

Page 3-64, Paragraph 8, Change SPA 124 "Permit" to SPA 124 "Notification".

Page 3-68, Add to proposed projects along U.S. 191:

Project Name	MDT#	CN#	Project Limits	Watershed	Project Description
Yellowstone Park – Big Sky	NH 50-2(44)31	4800	US 191, MP 31.2 [length - 27.0 km (16.8 mi)]	Missouri River	Pavement preservation
INTERSEC IMPROV-US191-MT64	STPHS-NH 50-1(14)50	2544003	U.S. 191 at MP 49.734	Missouri River	Traffic signal and turn lanes

Page 4-1:

Bullet 3, Change SPA 124 "Permit" to SPA 124 "Notification".

Add a new bullet point at the end of the permits list:

- For the improvement areas where the 100-year floodplain has been delineated and construction encroaches on the 100-year Floodplain, a Montana Floodplain and Floodway Management Act Floodplain Development Permit from Gallatin County Planning Department would be required.
- For any work below or above the Gallatin River, a Navigable Rivers Land Use License (LUL)/Easement will be required from the Area Manager of the DNRC Bozeman Unit.

3.0 Response to Comments and Questions on the EA

The public hearing for the Gallatin Canyon – Slope Flattening/Widening EA was held on January 10, 2006. A full copy of the transcript from the public hearing is included in Appendix A. During the public comment period, a total of 69 comments were received and are included in Appendix A. Responses to these comments are also included in Appendix A. Comments 39 through 68 were received during the public hearing presentation and many of these comments were responded to orally during the hearing. All other comments were received after the public hearing.

4.0 Summary of Impacts and Mitigation

4.1 Biological Opinion

The Biological Assessment for the project was accepted on June 1, 2004. The following determinations have been made.

US Fish and Wildlife Service (USFWS) concurs with the determination that the proposed project would not have the potential to cause an adverse effect, nor to jeopardize the continued existence of threatened bald eagle (*Haliaeetus leucocephalus*), threatened Canada lynx (*Lynx canadensis*), threatened grizzly bear (*Ursus arctos horriblis*), non-essential experimental gray wolf (*Canis lupus*), and candidate fluvial Arctic grayling (*Thymallus arcticus*) and, therefore, formal consultation is not required for these species. The USFWS bases its concurrence on information in the Biological Assessment, including project design features and the mitigation measures outlined in the Biological Assessment that would be implemented as part of this project to minimize effects to fish and wildlife species.

A copy of the Biological Assessment (BA) is on file with MDT Environmental Services.

4.2 Summary of Impacts

Table 1 summarizes the impacts of the No-Build and Selected Alternative for each of the impact topics discussed in the Environmental Assessment. The Selected Alternative improves safety of travel on US 191 between MP 32 and MP 70 by implementing safety improvements and improving roadway deficiencies at ten locations along the US 191 corridor. Proposed improvements under the Selected Alternative include construction of turn lanes, slope flattening, widening of shoulders, improving the clear zone, improving site distance, installing new and upgrading existing guardrail, and replacing two bridges.

Table 1. Summary of Impacts

Topic Area	No-Build	Selected Alternative
Access		
Access	No impact	Access to commercial property northwest of the West Fork Gallatin Bridge would be reconfigured in proximity to the existing location. Access to the private cabin east of US 191 and north of Swan Creek Road would be realigned onto Swan Creek Road. Would improve access to businesses, residences, and schools in the project corridor, as well as the recreational resources in these areas: Red Cliff Area, Big Sky Area, Karst Ranch Area, Swan Creek Area, Greek Creek Area, and Storm Castle Creek/Castle Rock Inn Area.
Traffic		
Traffic Operations	Traffic flow impeded by vehicles that are slowed or stopped in travel lanes for turn movements.	Improved traffic flow throughout the project corridor due to the provision of turn lanes.

Table 1. Summary of Impacts (continued)

Topic Area	No-Build	Selected Alternative
Safety		
Turn-Lanes	Existing safety issues continue.	Would reduce potential rear-end and left-turn collisions.
New and Upgraded Guardrail	Existing safety issues continue.	Would reduce the severity of off-road crashes.
Slope Flattening	Existing safety issues continue.	Would improve recovery area and reduce the number of off-road and over-turning crashes.
Widening of Shoulders	Existing safety issues continue.	Would improve recovery area and reduce the number of off-road and over-turning crashes.
Pedestrians and Bicycles		
New Bridge at the West Fork Gallatin River in the Big Sky Area	No impact	Bridge would include a multi-use path on the west side of the bridge to improve pedestrian access between the commercial facilities on the north side of the bridge and MT 64 to Big Sky.
Bike Path in Big Sky Area	No impact	Path would be impacted by roadway widening for safety improvements. Although the separation between the reconstructed multi-use path and the travel lanes may not be as wide as current conditions, it would be consistent with the American Association of State Highway and Transportation Officials (AASHTO) standards.
Land Use		
Federal Land	No impact	US Forest Service (USFS) land exists on both sides of most of the corridor. In the Karst Ranch improvement area, 0.02 ha (0.04 ac) would be converted to highway right-of-way to accommodate the proposed improvements. This land would be a linear strip along the existing highway right-of-way and the land use of the parcel as a whole would not change as a result of the improvements.
Private Land	No impact	Land from 15 private parcels in the Big Sky and Storm Castle Creek/Castle Rock Inn Areas would be converted to highway right-of-way. In all cases, the land area would be a linear strip adjacent to the existing highway right-of-way. In each case, the current land use of the parcel as a whole would not change as a result of the proposed improvements.
County Land	No impact	The proposed improvements in the Big Sky improvement area would convert 0.06 ha (0.15 ac) of land from the Ophir School District (District #72) to highway right-of-way. This land would be linear strip of land adjacent to the existing highway right-of-way and may impact the parking lot in front of the school. Consistent with Gallatin County Growth Policy.
Community Resources		
Population	No impact	No impact
Schools	No impact	The two Ophir School bus stops located south of MT 64 could be beneficially affected by shoulder widening in the Big Sky Area. Access would be maintained, and safe bus stops would be incorporated into the final design. Refer to Access and Construction Impacts section for additional discussion.
Emergency Services	Potential delays in emergency response as traffic volumes increase in corridor.	Widening the shoulders of US 191 in the improvement locations would improve movement of emergency equipment through the corridor by providing additional areas for cars to pull off and let emergency vehicles pass.

Table 1. Summary of Impacts (continued)

Topic Area	No-Build	Selected Alternative
Community Resources (cont.)		
Recreational Facilities	No impact	Access to recreation facilities is improved at locations of proposed turn lanes. The extension of guardrail at the Swan Creek and Jack Smith bridges would eliminate access to two turnouts used unofficially for access to the Gallatin River.
Right-of-Way and Relocations		
Additional Right-of-Way	No impact	0.54 ha (1.32 ac)
Relocations	No impact	No relocations
Utilities		
Electric and Communication Facilities	No impact	Utility relocations may be needed.
Visual Resources		
Roadway User	No impact	Minimal impact to the visual character of the corridor. Would cause minor visual impacts at the West Fork Gallatin Bridge in the Big Sky Area because the new bridge would be more than double the existing width and at least 50 percent longer in order to accommodate the proposed improvements. These impacts would be experienced by those on or near the roadway as well as recreational users of the river.
Recreational User	No impact	Installation of slope stabilization structures at the Red Cliff, Big Sky, Karst Ranch, Swan Creek, Greek Creek, and Storm Castle Creek/Castle Rock Inn Areas would alter visual appearance of the riverbanks and be observable by river users. Tree removal may result in minimal degraded visual character at the Swan Creek Area, Greek Creek Campgrounds, the Red Cliff Campgrounds and the picnic area at the Red Cliff Campgrounds.
Contaminated Sites / Hazardous Materials		
Underground Storage Tanks (USTs)	No impact	There are 4 USTs adjacent to the proposed improvement areas that could be impacted if right-of-way is acquired at these locations.
Floodplains		
Encroachment	Continued transverse encroachment at six locations. Continued longitudinal encroachment at Karst Ranch.	Continued transverse encroachment at the same six locations as the No-Build Alternative. Continued longitudinal encroachment in the Karst Ranch Area and new longitudinal encroachment in the Jack Smith Bridge Area. There is also the potential for encroachment in the Moose Creek Area, but no floodplain mapping exists for this area.
Flood Surface Elevations	No impact	Would reduce flow velocities and scour potential over existing conditions at the West Fork Gallatin and Swan Creek bridges.
Water Quality		
Surface Water	No additional impact to the Gallatin River and the West Fork Gallatin River.	Minimal additional impacts to Gallatin River and West Fork Gallatin River related to increased impervious surface area and stormwater runoff.
Groundwater	No impact	No impact
Private Septic Systems	No impact	No information available
Ground Water Wells	No impact	No information available

Table 1. Summary of Impacts (continued)

Topic Area	No-Build	Selected Alternative
Water Body Modifications		
Water Body Modifications	No impact	At this level of design, channel modifications have not been identified. New or replaced culverts may impact fish passage.
Wetlands		
Jurisdictional	No impact	0.58 ha (1.45 ac) directly impacted after incorporating avoidance and minimization measures into initial design. Minimal indirect impacts resulting from sedimentation, degradation of water quality, increased water temperature, increase in non-native plant species, and hydrologic modifications.
Non-Jurisdictional	No non-jurisdictional wetlands were identified in the corridor.	No non-jurisdictional wetlands were identified in the corridor.
Vegetation		
Montana Species of Concern	No impact	No impact
Vegetation and Noxious Weeds	No impact	Minimal direct impacts as compared to the availability of similar vegetation that would remain throughout the project corridor. Minimal increases in noxious weeds.
Tree Removal	No impact	Tree removal would occur at six of the improvement areas (Red Cliff, Moose Creek, Swan Creek, Storm Castle Creek/Castle Rock Inn, and Spanish Creek) to accommodate safety improvements. The precise number and location of trees to be removed would be determined during final design.
Wildlife		
Montana Species of Concern	No impact	See Construction Impacts
Wildlife	Existing conditions with bighorn sheep mortality due to vehicles would continue.	Potential impacts to habitat. Continued mortality of bighorn sheep between MT 64 and Karst Ranch.
Fisheries		
Fisheries	No impact	Potential minor impacts to aquatic species from impacts to water quality due to increases in impervious area, removal of riparian vegetation, and changes in peak/base flows. Potential impediment of fish passage at new or replaced culverts.
Threatened and Endangered Species		
Bald eagle	No impact	May affect, but is not likely to adversely affect bald eagles.
Canada lynx	No impact	May affect, but is not likely to adversely affect Canada lynx.
Fluvial Arctic grayling	No impact	May affect, but is not likely to jeopardize the continued existence of the reintroduced population of the fluvial Arctic grayling.
Gray wolf	No impact	May affect, but is not likely to adversely affect gray wolves.
Grizzly bear	No impact	May affect, but is not likely to adversely affect grizzly bears.

Table 1. Summary of Impacts (continued)

Topic Area	No-Build	Selected Alternative
Construction Impacts		
Temporary Impacts during Construction	No impact	Increased noise, mobile source air emissions, fugitive dust (dust in air), soil erosion, sedimentation, and stormwater runoff; use of construction easements and staging areas; traffic delays; traffic congestion; potential for degraded roadway surface; potential for hazardous materials spills and construction debris; visual intrusions; disturbance of soils and vegetation; displacement of wildlife, migratory birds, and aquatic species from human-related disturbances and habitat loss or alteration; and potential fish mortality. Disruption of residential and business accesses, traffic operations, pedestrian/bicycle movements, emergency response, school-related transportation services, and utility service. Temporary impacts to floodplain functions and waterbodies at bridges. Short-term creation of direct and indirect jobs associated with construction.

4.3 Summary of Mitigation

Mitigation measures to minimize or reduce adverse transportation, social, economic, and environmental impacts were prepared for the Selected Alternative and are summarized in Table 2.

Table 2. Summary of Mitigation for the Selected Alternative

Topic Area	Type of Impact	Mitigation
Access		
Construction	Access to private properties and businesses along the corridor could be impacted during construction.	Access to private properties and businesses along the corridor will be maintained at all times.
Traffic		
Construction	May include temporary lane closures, delays, short-term travel on unpaved surfaces, and reduced travel speeds. The highway may be temporarily open to only one lane of traffic at some locations during construction.	The contractor will prepare a traffic control plan to minimize traffic disruption and will coordinate with emergency service providers and schools. Two lanes of traffic will be maintained to the extent practicable.
Pedestrians and Bicycles		
Bike Path in Big Sky Area	Path would be impacted by roadway widening for safety improvements. Although the separation between the reconstructed multi-use path and the travel lanes may not be as wide as current conditions, it would be consistent with the American Association of State Highway and Transportation Officials (AASHTO) standards.	The multi-use path between MT 64 and Ophir School will be re-constructed.
Construction	Impacts may include temporary closure of the bike/pedestrian path between MT 64 and Ophir School. Bicyclists along the corridor would experience short-term impacts from possible degradation of the roadway surface during construction.	Maintenance of pavement to the greatest extent practicable and additional pedestrian signage during construction will be provided.

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Land Use		
Federal Land	USFS land exists on both sides of most of the corridor. In the Karst Ranch improvement area, 0.02 ha (0.04 ac) would be converted to highway right-of-way to accommodate the proposed improvements. This land would be a linear strip along the existing highway right-of-way and the land use of the parcel as a whole would not change as a result of the improvements.	MDT will coordinate with the Gallatin National Forest (GNF), MFWP, and USFWS to discuss any concerns these agencies may have regarding the safety improvements. MDT will coordinate with the USFS to ensure that planned improvements on US 191 are consistent with planned improvements on GNF lands.
County Land	The proposed improvements in the Big Sky improvement area would convert 0.06 ha (0.15 ac) of land from the Ophir School District (District #72) to highway right-of-way. This land would be linear strip of land adjacent to the existing highway right-of-way and may impact the parking lot in front of the school.	MDT will coordinate with the Ophir School District to discuss any concern the district may have regarding the safety improvements and right-of-way impacts.
Construction	Temporary construction easements for grading, temporary access, or temporary construction staging would be needed from property owners and public agencies along the corridor. Upon completion of the project, the owners would have unrestricted use of these areas again.	There will be early notification of property owners and public agencies about construction. Staging areas on National Forest System Lands (NFSL) will be coordinated and approved by the USFS prior to construction.
Community Resources		
Construction	Could temporarily impact travel patterns and convenience along US 191. Fire and law enforcement response could be delayed as well as school buses and vehicles dropping off and picking up students at Ophir School.	Early notification of community service agencies, about construction activities in order to address potential construction impacts will be provided. The contractor will coordinate with emergency service providers and schools as necessary regarding the construction traffic management plan and will provide ongoing information during construction.
Right-of-Way and Relocations		
Additional Right-of-Way	0.54 ha (1.32 ac)	In order to minimize impacts to the commercial property northwest of the West Fork Gallatin River Bridge, guardrail was incorporated into the design to reduce the right-of-way required for the proposed improvements. As a result, the parking capacity of the commercial property will not be impacted by the proposed project. Right-of-way acquisition for this project will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646 as amended), (42 U.S.C. 4601, et. Seq.) and the Uniform Relocations Act Amendments of 1987 (P.L. 100-17).
Construction	Construction easements for grading, temporary access, or temporary construction staging would be needed from property owners and public agencies along the corridor.	Easements from private property owners will be obtained according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (cited above) to provide just compensation for and rehabilitation of temporary construction easements.

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Utilities		
Electric and Communication Facilities	Utility relocations may be needed.	Utility relocations will be coordinated with the utility owners prior to construction.
Construction	Local communities may experience temporary disruption to utility service for water, sanitary, electric, communications, and gas service during construction.	Temporary disruptions will be minimized through coordination with utility owners.
Visual Resources		
Roadway User	Would cause minor visual impacts at the West Fork Gallatin Bridge in the Big Sky Area because the new bridge would be more than double the existing width and at least 50 percent longer in order to accommodate the proposed improvements. These impacts would be experienced by those on or near the roadway as well as recreational users of the river.	At the West Fork Gallatin Bridge, mitigation will include appropriate aesthetic treatments to the bridge such as form liners to provide a texture to the outside of the concrete bridge barrier rails. Although these measures will improve the appearance of the bridge, the visual impacts of the increased size cannot be mitigated.
Recreational User	Installation of slope stabilization structures at the Red Cliff, Big Sky, Karst Ranch, Swan Creek, Greek Creek, and Storm Castle Creek/Castle Rock Inn Areas would alter visual appearance of the riverbanks and be observable by river users. Tree removal may result in minimal degraded visual character at the Swan Creek Area, Greek Creek Campgrounds, the Red Cliff Campgrounds and the picnic area at the Red Cliff Campgrounds.	Visual impacts related to the installation of slope stabilization structures will be dependent on the type of structure that is proposed. The need to incorporate aesthetic treatments to the design of these structures will be determined during final design and appropriate mitigation measures will be taken, if necessary, in consideration of recreational users. MDT has coordinated with the GNF regarding potential visual impacts to recreational and other sites due to tree removal. Once the final construction limits have been determined, MDT will stake the construction limits and mark the trees, which are within the clear zone. Once the construction limits have been staked MDT will meet on site with USFS staff and identify which trees will be removed. USFS staff will mark trees beyond the clear zone that they feel should be either cut or trimmed to enhance the view shed of the area. This will prevent the project from appearing as a "clear cut" as tree removal will be "feathered" in to match the natural look of the area. In the Greek Creek Area, MDT will install guardrail instead of establishing a clear zone by removing trees. This measure will improve the safety for drivers without impacting the viewshed of the area. In the Swan Creek Area, MDT will participate in revegetation to mitigate for the impacts caused by the temporary detour. Revegetation efforts will include planting willows and possibly other saplings.
Construction	Removal of existing vegetation from road slopes would be a large visual impact. New cut and fill slopes would be highly visible to users.	See Vegetation mitigation

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Contaminated Sites / Hazardous Materials		
Underground Storage Tanks (USTs)	There are 4 USTs adjacent to the proposed improvement areas and could be impacted if right-of-way is acquired at these locations.	These USTs will be relocated if necessary.
Construction	No contaminated soils were identified in the project area. However, if contaminated soils are encountered, ground disturbance from staging activities is generally shallow and would not be expected to have substantial effects on hazardous materials sites. Removal of bridges and pavement would result in construction debris.	If contaminated soils are encountered within or near the construction staging areas a remediation/reclamation plan will be developed, if needed, in consultation with the Montana Department of Environmental Quality (MDEQ). Construction debris from removal of bridges and pavement will be handled as per MDT's Standard Specifications for Road and Bridge Construction.
Noise		
Construction	Potential for temporary increases in noise levels due to construction.	Consideration will be given to limiting certain types of construction after dark. However, limiting all construction to daylight hours is not feasible or practical and can result in delays to the construction schedule. Contractors will adhere to MDT specifications and local ordinances. Advance notice of construction will be provided to the GNF and area businesses and residences.
Floodplains		
Encroachment	Continued transverse encroachment at the same six locations as the No-Build Alternative. Continued longitudinal encroachment in the Karst Ranch Area and new longitudinal encroachment in the Jack Smith Bridge Area. There is also the potential for encroachment in the Moose Creek Area, but no floodplain mapping exists for this area.	Impacts to the floodplain will be minimized by following standard stream crossing design criteria and avoiding direct impacts on stream channels whenever practicable. Measures under consideration to minimize harm to floodplains include slope stabilization structures and clear span bridges. To minimize impacts, design of this project will be in compliance with Federal-Aid Highway Program Manual (FHPM) 6-7-3-2 "Location and Hydraulic Design of Encroachments on Flood Plains" (also referenced as 23 CFR 650 A) and Executive Order 11988, Floodplain Management. Coordination with the Gallatin Floodplain Administrator will be required to obtain a Floodplain Development Permit for locations where the floodplain has been delineated.
Flood Surface Elevations	Would reduce flow velocities and scour potential over existing conditions at the West Fork Gallatin and Swan Creek bridges.	
Construction	Temporary impact on functions.	
Water Quality		
Surface Water	Minimal additional impacts to Gallatin River and West Fork Gallatin River related to increased impervious surface area and stormwater runoff.	MDT will adhere to Best Management Practices (BMPs), develop an erosion control and sediment plan prepared in compliance with the Montana Pollutant Discharge Elimination System (MPDES) regulations and adhere to conditions in the Montana Stream Protection Act Notification (SPA 124) and US Army Corps of Engineers (COE) 404 Permit.
Private Septic Systems	No information available	If septic systems are within the final right-of-way and are affected by the project, they will be relocated in accordance with MDT procedures.
Water Quality (cont.)		
Groundwater Wells	No information available	If ground water wells are within the final right-of-way and are affected by the project, they will be relocated in accordance with MDT procedures.

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Construction	Construction impacts could increase erosion and stormwater runoff.	MDT will prepare SWPPP that includes the identification of BMPs to control erosion and stormwater runoff and comply with permit requirements.
Water Body Modifications		
Water Body Modifications	At this level of design, channel modifications have not been identified. New or replaced culverts may impact fish passage.	All work will be performed in accordance with state and federal guidelines regarding water quality and permit conditions. Culverts will be designed to accommodate fish passage to the extent practicable. MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value.
Construction	The area at or near each bridge may be impacted by construction activities.	MDT will incorporate a SWPPP and BMPs in the proposed construction projects. Disturbed stream banks will be revegetated to reduce erosion. The construction contractor will be required to follow all state and federal guidelines regarding water quality.
Wetlands		
Jurisdictional	0.58 ha (1.45 ac) directly impacted after incorporating avoidance and minimization measures into initial design. Minimal indirect impacts resulting from sedimentation, degradation of water quality, increased water temperature, increase in non-native plant species, and hydrologic modifications.	Slope stabilization structures, such as retaining walls, will be considered to minimize fill into wetlands and waters of the U.S. (Gallatin River). MDT will coordinate with the COE and the USFWS during the Section 404 permit review process. If it is determined that there are no possible mitigation options on-site, MDT will use an off-site mitigation area. One mitigation site option is the Jack Creek Ranch near Ennis, Montana in the Madison River drainage area of the Upper Missouri Watershed approximately 32 air-km (20 air-mi) west of the Gallatin Canyon project area. The project will comply with the permit conditions. Ground disturbance will be minimized and disturbed areas will be reclaimed and revegetated utilizing MDT standard specifications.
Construction	Potential for increased sedimentation, erosion, and introduction of pollutants. Wetland N would be impacted by a temporary detour route that would be necessary to maintain traffic during the replacement of the Swan Creek Bridge.	MDT will comply with the COE 404 permit conditions. MDT will incorporate a SWPPP and BMPs into construction projects. Temporary impacts to wetlands will be restored in accordance with MDT standard specification or permit conditions.

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Vegetation		
Vegetation and Noxious Weeds	Minimal direct impacts to vegetation as compared to the availability of similar vegetation that would remain throughout the project corridor. Minimal increases in noxious weeds.	Disturbed areas within MDT right-of-way or construction easements will be reclaimed and revegetated utilizing MDT standard specifications. The Contractor will coordinate with the Gallatin County Weed District to ensure compliance with the Gallatin County Weed Plan. The following mitigation measures will be taken on NFSL to prevent the introduction or spread of noxious weeds: • Workers will park their vehicles in weed-free areas that are identified with flagging or signs. • All of the contractor's heavy equipment will be washed prior to entering and leaving the work area. • Reseeding of disturbed areas within MDT right-of-way or construction easements on NFSL will be done with seed mixes reviewed by the MDT agronomist and the Forest Service and certified as weed-free. • Weed suppression will be completed prior to construction and then following construction for a period of up to three years in disturbed areas within MDT right-of-way or construction easements.
Tree Removal	Tree removal would occur at six of the improvement areas (Red Cliff, Moose Creek, Swan Creek, Storm Castle Creek/Castle Rock Inn, and Spanish Creek) to accommodate safety improvements. The precise number and location of trees to be removed would be determined during final design.	MDT will continue to coordinate with the GNF regarding the potential removal of trees near recreational and other sites in the project corridor. Early coordination between GNF and MDT staff has resulted in a number of mitigation measures intended to minimize the impact to vegetation in the project corridor. These measures are discussed under Visual Resources.
Construction	Temporary vegetation loss and modification of vegetation communities from fuel spills and soil compaction as a result of construction access and activities. Ground disturbance could increase potential for noxious weeds.	Disturbed areas within MDT right-of-way or construction easements will be reclaimed and revegetated utilizing MDT standard specifications. To reduce the spread of noxious weeds at open water or wetland sites during construction, the contractor will comply with relevant permit conditions that may require cleaning equipment (power wash with soap) prior to leaving or entering the project corridor to preclude the transfer of seeds into other areas.
Wildlife		
Montana Species of Concern	See Construction impacts	See Construction mitigation

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Wildlife (cont.)		
Wildlife	Potential impacts to habitat. Continued mortality of bighorn sheep between MT 64 and Karst Ranch.	Removal of habitat will be minimized or avoided to the greatest extent practicable. The opportunity to enhance wildlife movement at the new bridge locations will be addressed by the proposed clear span structures at West Fork Gallatin River and Swan Creek crossings. The new structures will be longer than the existing structures, thereby maintaining and improving the opportunity for wildlife movement at these locations. The necessity for bighorn sheep crossing signs with yellow caution lights between MT 64 and Karst Ranch to alert drivers to the potential for bighorn sheep on the roadway will be investigated with MFWP. If warranted, MDT will install these signs under a separate maintenance contract.
Construction	Could impact the survivorship of species, such as amphibians, that rely on water bodies. Some brief temporary displacement of wildlife populations may occur during construction. Use of loud equipment or explosives near ungulate winter range during the Spring (March - May) could impact bighorn sheep, moose and elk, which are particularly vulnerable during this time of the year. Potential for disturbance to Peregrine falcons (a Montana Species of Concern) during nesting period due to blasting or use of aircraft during construction. Power lines may be constructed or modified. Potential for impact during construction to migratory bird species if bridges, trees, shrubs or other woody vegetation occupied by active bird nests are removed.	BMPs will be incorporated into construction projects to minimize water quality impacts. To minimize the potential for construction-related impacts to bighorn sheep, moose and elk, timing restrictions during the spring for construction activities and/or blasting within one mile of ungulate winter range will be considered by MDT based on recommendations from the GNF and MFWP. If necessary, a special provision will be included in the bid package to address construction activities within one mile of a known raptor nest during the spring. The GNF has specifically identified active falcon and eagle nest locations and the necessary spring timing restrictions to MDT for these purposes. If power lines are constructed or modified, they will be raptor-proofed in accordance with MDT policies. MDT will stake the construction limits prior to initiating any construction activity that will result in the potential removal of trees. All trees to be removed will be flagged and the removal of such trees will be coordinated on-site with the GNF. A special provision will be included in the construction bid package to address this issue. The GNF will provide any known locations of active nests prior to construction. If necessary, a special provision regarding the protection of actively nesting birds will be included in the bid package.
Fisheries		
Fisheries	Potential minor impacts to aquatic species from impacts to water quality due to increases in impervious area, removal of riparian vegetation, and changes in peak/base flows. Potential impediment of fish passage at new or replaced culverts.	During final design, MDT will assess clear span bridge structures at Swan Creek and West Fork Gallatin. Riprap will be minimized. MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value. Where culverts are to be added or replaced, they would be designed to accommodate fish passage to the extent practicable.

Table 2. Summary of Mitigation for the Selected Alternative (continued)

Topic Area	Type of Impact	Mitigation
Fisheries (cont.)		
Construction	Potential disruption of rainbow, brown and Westslope cutthroat trout spawning period in Swan Creek and West Fork Gallatin during in-stream work associated with bridge replacements. Potential temporary adverse effects due to habitat disruption, blockage of fish passages, and increase in sediment and turbidity levels.	Compliance with water quality requirements; Montana Stream Protection Act (SPA) 124 notification and COE 404 permit conditions would be followed during construction including any timing restrictions on in stream work issued as a provision of the SPA 124 notification. BMPs and a SWPPP will be incorporated. Erosion control measures will be installed and maintained throughout construction. Fill of any kind into the Gallatin River or its tributaries will be minimized. Fish passage will be maintained during construction activities.
Threatened and Endangered Species		
Bald eagle	May affect, but is not likely to adversely affect bald eagles.	See Construction mitigation
Canada lynx	May affect, but is not likely to adversely affect Canada lynx.	See Construction mitigation
Fluvial Arctic grayling	May affect, but is not likely to jeopardize the continued existence of the reintroduced population of the fluvial Arctic grayling.	No mitigation necessary
Gray wolf	May affect, but is not likely to adversely affect gray wolves.	See Construction mitigation
Grizzly bear	May affect, but is not likely to adversely affect grizzly bears.	See Construction mitigation
Construction	Temporary displacement of bald eagles due to noise and visual disturbance. Removal of riparian habitat that may be used as foraging habitat or movement corridors for bald eagles, lynx, grizzly bears and gray wolves. Possible fish mortality and temporary displacement of fluvial Arctic grayling individuals if present due to sedimentation as a result of work in and near water bodies. Human activities at construction sites and construction personnel camping sites could attract bears.	The GNF will provide MDT with the location of any known bald eagle nests within one mile of the project corridor. If necessary, a special provision regarding the protection of actively nesting birds will be included in the bid package. If power lines are constructed or modified, they will be raptor-proofed according to MDT policies. Re-planting or supplemental planting of riparian vegetation. BMPs and erosion control measures will be installed and maintained throughout construction. Conditions of the SPA 124 notification will be adhered to. A special provision will be included in the bid package to address minimizing the potential to attract bears and other wildlife to the project area during construction.
Air Quality		
Construction	Temporary construction impacts would include short-term increases in fugitive dust and mobile source emissions from construction equipment and traffic delays.	Contractors will be required to adhere to all state and local regulations and to BMPs to minimize fugitive dust and mobile source emissions. To minimize the amount of additional vehicle emissions, a construction traffic control plan will be developed to limit disruption to traffic.

5.0 Selection of Preferred Alternative

MDT proposed improvements at ten locations on National Highway (NH) Route 50/ US 191 between mile post (MP) 32 and MP 70 in Gallatin County, Montana. The net length of proposed construction within this 61.2 km (38 mi) long project corridor is 9.7 km (6 mi).

Based on the Gallatin Canyon - Slope Flattening/Widening EA and the summary of public and agency comments and responses, the Federal Highway Administration (FHWA) has selected the Preferred Alternative, which is described in the attached EA. Figure 1 shows the safety improvement locations of the Selected Alternative.

Proposed safety improvements include turn lanes, slope flattening, widening of shoulders, improving clear zones, improving site distance, new and upgraded guardrail, and two bridge replacements. The locations of these safety improvements are summarized in Table 3.

The Selected Alternative achieves the purpose and need for this project as described in the attached EA.

The Code of Federal Regulations, 23 CFR 771.119 (i), states; "If, at any point in the EA process, the Administration determines that the action is likely to have a significant impact on the environment, the preparation of an Environmental Impact Statement (EIS) will be required." No significant impacts were identified due to the proposed project, and therefore, the Preferred Alternative was selected for this project. The impacts of both the Selected Alternative and No-Build Alternative are summarized in Table 1 of this document.

Figure 1. Proposed Safety Improvement Locations

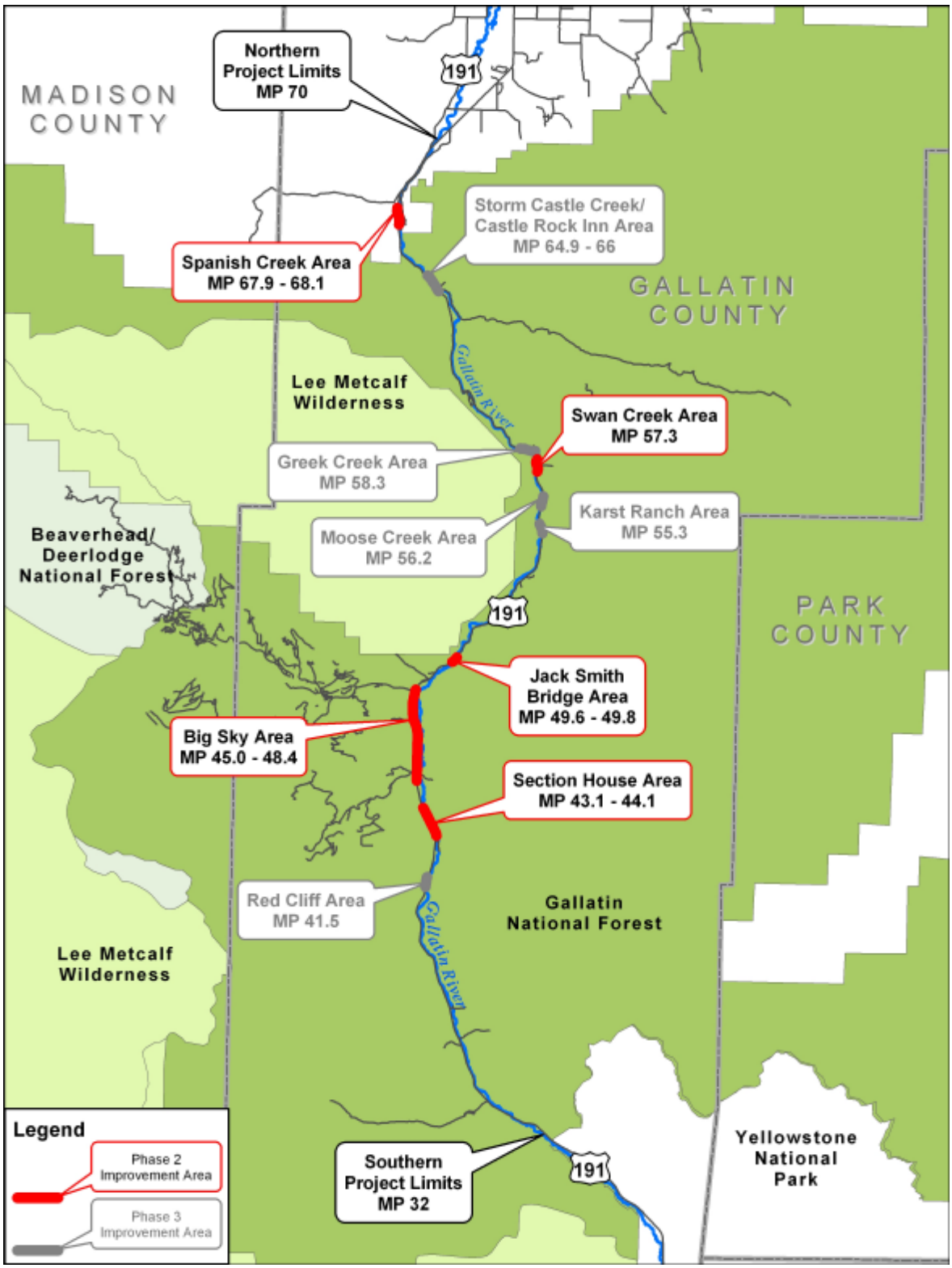

Table 3. Proposed Safety Improvements and Locations

Site	Milepost (MP)	Proposed Improvement
Red Cliff Area	41.5	• Left turn lane (southbound) • Widen shoulders on both sides • Upgrade/new guardrail on east side
Section House Area	43.1 – 44.1	• Slope flattening on both sides • Upgrade guardrail on both sides
Big Sky Area	45.0 – 48.4	• Roadway reconstruction • Bring curve up to standards for super elevation • Two-way left turn lane • Four right turn lanes (southbound) • Widen shoulders on both sides • Bridge replacement at West Fork Gallatin River • Upgrade/new guardrail on both sides
Jack Smith Bridge Area	49.6 – 49.8	• Slope flattening on both sides • Upgrade guardrail on both sides
Karst Ranch Area	55.3	• Left turn lane (northbound) • Widen shoulders on both sides • Upgrade/new guardrail (southbound)
Moose Creek Area	56.2	• Left turn lane (northbound) • Widen shoulders on both sides • Upgrade guardrail (southbound)
Swan Creek Area	57.3	• Left turn lane (southbound) • Widen shoulders on both sides • Bridge replacement at Swan Creek • Upgrade/new guardrail on both sides
Greek Creek Area	58.3	• Opposing left turn lanes • Widen shoulders on both sides • Upgrade/new guardrail (southbound)
Storm Castle Creek/ Castle Rock Inn Area	64.9 – 66.0	• Two left turn lanes • Slope flattening (northbound) • Widen shoulders on both sides • New guardrail (northbound)
Spanish Creek Area	67.9 – 68.1	• Widen shoulders on both sides • Upgrade guardrail (northbound)

Appendix A

Public Hearing Transcript

Public Hearing Sign-In Sheets

Comments Received During the Public Comment Period and Responses

FORMAL PUBLIC HEARING

STPHS 50-1(14)8 CN A544

Gallatin Canyon – Slope Flattening/Widening

A public meeting for the Gallatin Canyon – Slope Flattening/Widening project was held on January 10, 2006 at the Ophir School Gymnasium beginning at 7:00pm. The meeting was tape recorded and transcribed below.

Transcription

GALLATIN CANYON EA

PUBLIC MEETING

CN A544

Ophir School Gymnasium ~ Ophir, MT

January 10, 2006

WELCOME

I would like to thank you all for coming tonight to this very important meeting. My name is Charity Watt Levis. I'm the Public Information Officer for the Montana Department of Transportation. This is a Public Hearing to present the Safety Improvements that were evaluated in the Gallatin Canyon Environmental Assessment and get public comment on this project. It is very important to the Department of Transportation that we hear your questions and your concerns on this project because you are the people who use this road, you know this road, and it is insight you have that helps us find the best solutions for your needs and for the state of Montana.

Before I get started I would like to start with some introduction so that you know who is here and who you need to talk to. Jeff Ebert is our District Administrator. Joe Olsen is the Engineering Services Supervisor. Lorelle Demont is our Transportation Commission Secretary and was at the door and greeted most of you. Ross Gammon is the Maintenance Chief for this district. He is who you call when you have a problem with the road maintenance. Roger Schultz, Dennis Dietrich, and Barry Brosten are all engineers from MDT. From the Federal Highway Administration we have Jeff Patton. From David Evans and Associates we have Laura Meyer and Debra Perkins-Smith. I would also like to take this opportunity to see if we have any of our elected officials in the audience, please identify yourself – Roger Koopman and John Vincent.

The agenda for tonight is that Jeff Ebert is going to give the project history. Then Laura Meyer from David Evans and Associates is going to give an overview of the NEPA process for this document. Joe Olsen will go over the actual safety improvements. Then we will have the public comment period where we open the meeting up to have you go on record

for your comments or things we may have missed or not addressed or any concerns that you need to bring up. We will limit those comments specifically to this project. I know there are a lot of issues on this road that are on your minds but during the public hearing we would like restrain those to this project in particular. I would like to ask everybody to please make sure you have signed in for the record. Then also I want you to know that this meeting is being recorded. It will be transcribed as a matter of public record. So when it comes time for the public comment we will ask you to identify yourselves because it helps us with the transcription. Then those comments will be addressed formally in the Environmental Assessment. Before we start with Jeff, I'm going to turn it over to John Vincent who has an announcement to make.

ANNOUNCEMENT – John Vincent, Gallatin County

Because the meeting tonight is primarily concerned with the Environmental Assessment and comments in regard to the project, today I contacted Jim Lynch, Director of the Department of Transportation, and Col. Paul Grimstad, the Director of the Highway Patrol. They have both agreed to work through Scott Meyers, who spearheaded the Gallatin County safety effort, to come back down here to Ophir School, probably within the next month and hold a Town Hall Meeting such as the one tonight specifically to take your comments on what you think should be done in regard to the road and the patrolling of the Gallatin Canyon. So they will be here to specifically address those canyon safety issues in a town hall meeting in the very near future. I encourage you to attend that. I know there might be some flexibility tonight to address some of those concerns, but that meeting will be held primarily to talk about the safety issues a lot of which have received some attention in the press recently. So through Scott Meyers, he will send out the usual notices when that meeting is going to occur and we will come back here and do it again.

ANNOUNCEMENT – Charity Watt Levis, Montana Department of Transportation

On more announcement before I turn things over to Jeff. There are copies of the Environmental Assessment back on the table by Lorelle. Please feel free during the course of the meeting if something comes up and you want to look at that document, you may do so. So with that I'll turn things over to Jeff.

PRESENTATION – Jeff Ebert, Montana Department of Transportation

Good evening. Thank you all for attending this meeting tonight. I appreciate your time and energy coming out tonight to talk to us. Before we get into the specific details of the project, I want to go over a little bit of the project background of the Gallatin Canyon Safety Improvement Project.

It was first nominated back in 1996. The intent of the project was to address safety locations that are depicted on the boards up here (referring to graphic). The initial estimates were in the two million dollar range. The project was identified under our Safety Engineering Improvement Program. The Safety Engineering Improvement Program looks at high accident or high crash locations statewide. Those locations are put into a database and the intent is to determine what is the best fix to address the crashes that are occurring at those locations. Then they are "benefit costed" where you look at the cost of the repairs versus the cost of the crashes that are occurring, i.e., the property

damage, injury accidents, and the fatalities that may be occurring with those crashes. The projects are ranked from one to however many show up in an individual year. Then the projects are selected with the highest cost-benefit ratio, then they go down the list until the money is exhausted. So like I say, this project was identified back in 1996 and approved.

We went ahead and programmed it for preliminary engineering in July 1996. Basically the project consisted of US 191 beginning at reference post 32 and proceeding about 38 miles north to the end of the canyon – starting on the southern end at milepost 32 proceeding north to just as you come out of the canyon which is about milepost 70. As we proceeded through the project development, in 1997 the project was split into two phases. We had identified some low hanging fruit, some easy locations within this corridor that we could do fairly quickly. Then there were some other locations that required acquisition of right-of-way, moving of utilities, and some fairly serious environmental issues, and that is what kind of drove us to doing the Environmental Assessment.

The first phase of that project was estimated in 1997 to be in the neighborhood of $620,000, and phase two was about $2.2 million. So the cost went up by about $.5 million once that project was split into two phases and we got a little more of an idea about the actual work needed to be accomplished.

In May of 1999, as we got further into project development, it was determined there were two structures that we were going to need to widen in order to put in the two-way left-turn lanes and/or some of the slope flattening. The first one is at the West Fork of the Gallatin River right as you come into the Big Sky turnoff. That bridge would need to be replaced rather than rehabbed or just widened. Then also the structure at Swan Creek would also need to be replaced. That actually added a fairly significant cost to the project and we went ahead and did that as far as the estimate goes.

In 1999, phase one of the first project was completed for the cost of $670,000. That project consisted of some slope flattening, repair of bridge rail upgrades, signing, delineation, and installation of turnouts that are out there right now. The second phase of the project included the addition of some turn lanes, slope flattening, widening of shoulders, improvements of the clear zone, improving sight distance, and some more upgrade of existing and new guardrail to be installed.

After 1999, we began doing some survey work roughly over 1999-2001. We had a public informational meeting in June of 1999. We also had another public meeting in 2002. As a result of those two public meetings, it was determined that we needed to proceed into an Environmental Assessment. So in 2003, we went ahead and hired the consulting firm of David Evans and Associates to do the Environmental Assessment for that. During the time we hired them, we were also doing preliminary geotechnical studies, some hydraulic studies, and some coordination with some other state and federal agencies.

When it was decided to start doing the second phase of the project and when we started looking at adding the additional bridgework, the estimated cost of phase two went to $6.2 million.

The purpose of an Environmental Assessment and the reason we have to get into that is because in order to do final design we have to have an improved environmental document. The sites we have up here right now (referring to graphic) are still in a very preliminary stage. We need to come in and get the public comments from you tonight over the specifics of those locations. So with that I'll turn this over to Laura to actually talk about the Environmental Assessment, then I'll come back up and go through the detail of the individual projects.

PRESENTATION – Laura Meyer, David Evans and Associates

Introduction: Thank you, Jeff. I'm just going to give everyone a quick overview on what is called the NEPA process or the National Environmental Policy Act. That is the process we've been working through on this project. There are five basic elements of NEPA.

The first thing is the agency has to consider alternatives. So in addition to whatever build alternatives the agency is considering, they have to also look at the "no action" alternative or doing no improvements at all.

Secondly, they have to identify and examine the potential environmental impacts of what they are proposing to do. Additionally, they look at mitigation measures to minimize those impacts.

The third thing is that they have to coordinate with other agencies. In this project area there are a lot of natural resource concerns, so MDT has been collaborating with the Gallatin National Forest, Montana Fish Wildlife and Parks, US Fish and Wildlife Service, and a lot of other agencies to get their concerns about this project.

The fourth thing is they have to do public involvement. They have to inform the public about what they are proposing to do and then they have to consider the public's input while they are developing their alternatives.

Finally, the agency has to document this whole process and that is what this Environmental Assessment is about. You've got to document the impacts, document how you involved the public, document that you coordinated with all these agencies, and wrap that up into one document. So that is what we just released a few weeks ago in this Environmental Assessment.

NEPA also requires that you establish a purpose and need for the project. That kind of helps guide the process, helps clearly identify what the agency intends to accomplish, and why they need to accomplish it. As Jeff said, this is a safety project and it was initiated because of high accident rates in this corridor. The established purpose of this project is to provide a transportation facility that improves the safety of travel on US 191 between milepost 32 and milepost 70. Two of the primary needs that were identified for this project were (1) to address the problem of rear-end vehicle collisions, and (2) to address the problem of off-road and over-turning crashes. All three of those types of accidents were identified as having a higher average or a higher rate than the statewide average for similar roads in the state.

So, based on this purpose and need, MDT identified ten specific areas in the corridor where safety improvements are needed. Joe Olsen is going to discuss what MDT is proposing at these ten locations next.

As Jeff already mentioned, MDT has already done two public meetings for this project where they have gotten input from the community. Some of the major topics that were identified at these meetings were shoulder width, lack of turn lanes, pedestrian safety at the bridge at Big Sky, passing lanes, turnouts, signage, and traffic signal at Hwy 64, commercial truck traffic, and speed limits.

So the first three: shoulder width, turn lanes, and pedestrian safety at the bridge, are all covered in this project and Joe Olsen will go over those specifically. Jeff also discussed that there is another project that will be evaluating concerns about speed and signage and some other issues. The remaining three: passing lanes, turnouts, and commercial truck traffic were not addressed as part of this Environmental Assessment. Passing Lanes: MDT got kind of mixed input from the public on what was needed there. Expanding turnouts was a problem due to the environmental constraints in this corridor. Commercial truck traffic – MDT just doesn't have jurisdiction and cannot restrict commercial truck traffic on a federal highway.

So, in addition to all this input from the public, agencies were coordinated with and they had a completely different set of issues they were concerned with. They are more concerned with the impacts to natural resources in the corridor as a result of doing these types of improvements. So MDT has taken all of this into consideration, public input and agency input, and developed all these improvements that will be talked about tonight.

Obviously, there is going to be some benefits from these improvements: both vehicle and pedestrian safety will be improved, traffic flow will be improved, and also access to properties along the corridor will be improved. But there are some negative impacts and those are mostly due to natural resource impacts. We've got a lot of wetlands adjacent to this corridor as well as wildlife impacts and things like that that will occur as a result of doing these improvements. MDT has collaborated with landowners and agencies to work out mitigation measures to try to minimize these impacts as much as possible. All of these things are documented in the Environmental Assessment.

The next step needs to get input from you on this Environmental Assessment. Comments can be given here tonight during the public comment period which is going to follow this presentation. You can either give comments verbally or there are comment sheets that you can fill out and turn them in here at the meeting or you can take them home, fill them out, and mail them in. An additional option is the MDT website. MDT website has the Environmental Assessment actually available for review on the site and you can also submit comments on the Environmental Assessment through the website. In addition to the website, you can take a look at the document here tonight or it is available at several locations: here at the Ophir School Library, the Big Sky Post Office, the West Yellowstone Public Library, and three locations in Bozeman: the Bozeman Public Library, MDT offices, and the Gallatin County offices.

So, what is MDT going to do with this input? They are going to take all of the input they receive by January 27th, which is the deadline to submit public comments, and they are

going to review it. Based on the input they get, the information that is presented in the EA, the impacts and the alternatives, could be refined based on the input MDT gets.

So, once all the input is in and MDT has taken a look at everything, if they find that significant impacts have been identified, then they would actually have to go to an EIS, which is a higher-level environmental document if they wanted to proceed with this project. If no significant impacts are identified, then MDT moves on to what is called a FONSI, which stands for Finding of No Significant Impact. That is the document where you actually can see what is going to happen – what is the alternative that is going to be implemented. So once that document is completed and FHWA signs it, then the public will be notified that it is available.

So that is about it for the NEPA process. As Jeff said, then you move into final design, right-of-way acquisition, and then construction. So that is NEPA in a nutshell. Now I'm going to hand it over to Jeff Ebert who is going to be taking about the specific improvements in the corridor.

PRESENTATION – Jeff Ebert, Montana Department of Transportation

Thank you, Laura. I forgot to mention a few things to you earlier, so I'm going to do that before I get into the specifics of the locations. First of all I want to touch on is other MDT work that is being looked at in the corridor. In addition to this project we have a project that is going to be done between reference posts 57 and 61 (referring to graphic). What we have here is some locations where the guardrail is being undermined by the river and some erosion coming off. We are going to try to put in some erosion control and riverbank stabilization to the tune of about one million dollars. That work will probably be done about the same time as this contract will be let probably during the 2008 construction season.

In the immediate future, there was meeting here at Ophir School in December where Scott Meyers, Rep. Roger Koopman, and several individuals within the Big Sky area met with the public. There was also a meeting with our Director and several individuals from the department and Rep. Roger Koopman to talk about some quick things that could be done in the interim. There was a commitment to do a speed study in the corridor. One of the things we wanted to do with the speed study is determine if the current speed was appropriate and what effect there might be with the addition of some signage. That speed study was done last fall and we do have that information. Last week we put up the variable message signs, one at the beginning of the canyon and one up here at Big Sky. Our intent is to come in next month and do a second phase to that speed study and see what effect those variable message signs are going to have on the traveling public as they proceed through the canyon. While we are doing that speed study, we are also going to look at the signal warrant at the intersection of US 191 and Big Sky Road. As a part of our safety project and also as part of some development that occurred, there was a signal study done several years ago and it showed at that time and this was before a lot of this area has really taken off, that that signal was not warranted. We have committed to go ahead and take data when we are doing the speed study and look at that intersection again for the possibility of a signal. Once we do that data collection, we will come back and look at it, look at the warrants that need to be satisfied in order to put in a signal. If

it doesn't warrant it at that time with the ski traffic coming up, then we are also going to commit to come back and look at it again. Then we are going to commit to do it again in the spring when the tourist traffic comes up. So we are going to try and really look at that intersection and determine whether or not there should be a traffic signal placed there.

The other thing we are going to try and do in conjunction with the variable message signs is to also install a "your speed is" sign. It is a sign that gives you information as you are driving toward it as far as how fast you are proceeding. Once those signs are installed and we contemplate that they will be here by the end of January or first of February, we will install those signs and then see what affect the speed has with those. The intent with "your speed is" signs is not to find out how fast somebody is going. We are going to have it set so that once you get over what the speed limit is, it is going to say "you're going too fast". We are not going to see what the record is for coming into the canyon or going out. I don't think that is appropriate.

The other thing we are going to do is in the spring we made a commitment to install centerline rumble strips in the no passing areas and curves. One of the areas that we've found and from the comments we've received and from other states that have done this, is there is an affect on motorcyclists using the roadway with those. So in passing areas, we will not install rumble strips down the centerline but we will look at putting them in the no passing zones and the curves.

Those are kind of a listing of other projects that we are going to be doing and looking at. John Vincent mentioned Director Jim Lynch, and Col. Grimstad from the Highway Patrol are going to come in and have another public meeting to talk specifically about speed. So with that, I'm going to start speaking on the work we are doing at the individual locations.

Up here right at the beginning (referring to graphic), in the middle here is a kind of south to north depiction of US 191. We start down here at reference post 32 and then we proceed to the north and the project ends at milepost 70 as you come out of the canyon. Each one of the locations on here is also depicted specifically. I'm going to walk through them fairly quickly. I would invite you to come up after the presentation if you have specific comments or have general knowledge of those locations that you can pass on to us, that would be great and very much appreciated. The other thing we did, I mentioned about the bridges going up and their costs, we have split phase two of this project into two projects. We are looking at doing approximately six million dollars worth of work in 2008 to coincide with that erosion control project I mentioned earlier, and we are going to be looking at locations on this map that are a dark black, then the locations that will come up at a future date that we don't have funding for right now but will hope to try and secure in the future, are kind of a lighter gray tone and I'll talk about those specifically.

Red Cliff Campground: This would be on the south end of the project (referring to graphic); the first location is the Red Cliff Campground and will involve the installation of a left-turn lane. This would be the north portion and this would be south. We would start the left-turn lane at this location (referring to graphic). The widening that is required at this location also requires the installation of a Gabion wall. A Gabion wall simply speaking is a basket of rocks that is installed next to the roadway and the roadway

is built out over the top of that. We will put that Gabion wall for a distance there and then the left turn lane will be through the turnoff into the Red Cliff Campground.

Section House: The next location proceeding north would actually be a little south of the Big Sky turnoff. This is the location called our section house. Again in the south direction proceeding north we will be doing some slope flattening through that curve on the east and west side of the roadway there.

Big Sky: The next one up is right at Big Sky and it involves about 3-1/2 miles of work. Again starting north and proceeding south we will start with a left-turn lane going in the south direction. We will also have a right-turn lane going into Big Sky itself. So there will be a right-turn lane for those vehicles proceeding southbound – a dedicated right-turn lane for them to slow down and get out of the main line of traffic. We will also have a left-turn lane starting on the other side of the intersection and going down through the development that is occurring through there. It is a two-way left-turn lane and it allows the motorists making a left-hand turn to get out of the stream of traffic so they will not be an impediment to the traffic and lower the chances of rear-end accidents that are occurring through that corridor there. Again Ophir School area, which is down in here, so we are actually going south to the intersection that distance and then go north just slightly with that two-way left-turn lane through there. Again through all this development there will be a continuous left-hand turn lane and an addition of a right-hand turn lane into the Ophir Creek loop and also into just next to Buck T-Four. Also in order to do the turn lanes, where the West Fork crosses underneath through US 191, there is going to be a new structure put in there so we can do the widening for the turn lane and also for that right turn lane. Plus, there will be a reinstallation of the bike path that was installed under that.

Jack Smith Bridge: Now we are going north – the Jack Smith Bridge, we are going to do some slope flattening on the east and west side of the roadway near to the south of the bridge for about two tenths of a mile there.

Moose Creek: The next location is Moose Creek left-turn lane and also the Karst Ranch will be the installation of a left-turn lane into the Karst Ranch and also into Moose Creek Campground.

Swan Creek: This is where we are going to replace another one of the structures. This one is going to involve some installation of some Gabion walls for the widening. This will be another left-turn lane into that Swan Creek turnout. The widening will require the installation of these Gabion walls for the widening that we are going to do there.

Greek Creek Campground: Again the left-turn lane there and some more Gabion walls will be placed along there to allow for the widening that is going to go in there and also back up in here (referring to graphic) for that left-turn lane that is being done there.

Squaw Creek: Milepost 65.2, there will be a left-turn lane installed at that location. Again, there will be some additional Gabion wall to accommodate the widening along that, then a left-turn lane in this location right here (referring to graphic).

Castle Rock Inn: Reference post 66, there will be some slope flattening done in that location.

Spanish Creek: We are looking at putting the typical through there, reconstructing that curve, doing some slope flattening at that location.

Again, I ask you to come up here afterwards because it is a little tough for you to see but if there are some specifics you want to let us know about, we invite you to come and do that at the end of the presentation.

Project No. 1 of Phase 2 is a six million dollar project and it will include work at what we call the section house (referring to graphic). It will include the work at Big Sky, the bridge replacement, the Jack Smith Bridge area will be done under that first project. The Swan Creek area will be done under the first project. Then the last location is the Spanish Creek area and that will be done under the first project.

The Red Cliff Campground, the Karst Ranch, Moose Creek, Greek Creek, and Squaw Creek, and Castle Rock will be the project done under Phase 2 Project No. 2. That work is estimated to be $3.2 Million.

I went through that fairly quickly, but that is the end of our presentation. Now is your chance to come up here and give us all the good comments we need to hear. In order for you to be clearly heard, you need to speak into the microphone. Charity will bring that to you so you don't have to come up here and stand next to me, although I would like the company. So with that, I'll open it up for your questions. Thank you very much for coming tonight.

QUESTION/COMMENTS

Com: (Jerry Fishel) I live here in Big Sky. I have a couple of suggestions. One would be to put reflectors on the centerline of the highway. I've seen this done in Florida and other places. It defines the lanes and it will define the left-turn lane. These reflectors will be helpful for people staying in their lanes. The second suggestion is: In the park they have a system where they measure where the animals cross the road, and we've all seen that. Would it be possible to set up a timing system on these large tractor trailers such that we can measure the time that they go through the canyon? In other words, they would carry some kind of a radio transmitter chronograph indicating what time they went in and when they came out, and if it turns out that the average speed through the canyon is excessive, identify them and give them the proper reprimand or whatever fines might be appropriate.

Com: (F. Craig Barber) I come up and down about 60 times during the winter for teaching skiing and things like that. I live in South Cottonwood Canyon. I'm amazed that we have a bridge at Lava Lake, which is around milepost 60, a curved bridge that is very narrow and the freeze thaw is much more tricky with a bridge. The same thing at Swan Creek - that bridge has a curve in it. Two or three years ago there was black ice on that slight curve and it made the car spin and then there were about five cars below that also spun. So I'm hoping that if

you redo the Swan Creek Bridge, you will at least make it straight. I don't think that is technically impossible and probably very smart and if Lava Lake isn't in the scheme now, it should be fixed in the future because that is just like a funnel. Just this past week I saw three extra-wide commercial trucks with huge dump trucks on the back of them with no blinking light car in front. One of those could not squeeze through that bridge if someone is coming the other way. So you've got some serious hazards there. Thank you.

Com: (Roger Cantwell) I've been up here in the canyon for about 20 years and I take care of all the white crosses throughout the canyon here. I have a suggestion – I know the white crosses are doing a lot of good but I think instead of the white crosses maybe we should put six-foot skull and crossbones painted on the blacktop either in white paint or florescent orange. Nobody has mentioned mile marker 37 called dead man's curve. I think something could be done about that. There are six white crosses right there. Thank you.

Q: (Jerry Wortman) I just have quick question – has this project been fully funded?

A: (Jeff Ebert) Phase II of Project No. 1, the locations that included the bridge at Big Sky and Swan Creek, that project we estimate to be about $6 Million. We feel we have enough funding in our kitty to do that work in 2008. The other three locations that amounted to about $3 Million, we don't have funding for right now. That is the cost estimate to do what we feel, based on the preliminary information we have right now. Once the Environmental Assessment is complete, we can then go into final design. Our friends from Federal Highways do not allow us, nor do the folks in NEPA do not allow us to do final design until that environmental document is done. Until we can get that process done, technically those are still fairly sketchy estimates. The work probably could be a little bit more or a little bit less. We will adjust it based on that budget.

Com: (Charity Watt Levis) Before we go on, I know everyone has a lot of questions and a lot of suggestions that are general safety suggestions. During this public hearing at this point, we would really just like to hear your comments about what was proposed tonight. We'd also invite you, and I know there is a lot to digest if you haven't gone through the Environmental Assessment, and there may be a lot of things you may not be familiar with, but if you have comments after the meeting or after you've reviewed the Environmental Assessment, you have the opportunity to submit written comments as well. Then after the formal hearing is closed, all of the staff will hang around here and answer questions should things come up specifically that you have on your mind.

Com: (Linda Allen) My husband and I live four miles south of the mouth of the canyon, which is where the last four people died. We live here at Big Sky as well. We've been driving the canyon quite frequently daily for the last ten years. I'm an advocate of lowering the speed limit in the canyon to 45 mph. I think a number of these projects, which are proposed for safety reasons, disappear if people aren't going too fast. It is not just too fast for winter conditions, it's worse in the summer. So if you haven't given a thought to lowering the speed limit, I think you should. It is the only thing that is simple, obvious, immediate, practically free, and insures that drivers will have better control of their vehicles.

Q: (Ian MacConnackie) I'm a new resident of the canyon, about seven miles north. The Gabion walls that are the caged rocks, are they going to be set down into the river to expand the shoulder that you putting the turning lanes in at Red Cliff and Swan Creek? Are they going to be into the river?

A: (Jeff Ebert) The Gabion walls that we are going to install will be put adjacent to the river. We can't put them into the water because there are Corps of Engineer restrictions on that. Again, the environmental document that we are doing tonight will help drive how close, but the intent is to put them adjacent to the riverbank. So there will be some excavation putting in the Gabions and building the slope up from that.

Q: (Ian MacConnackie) I didn't catch the woman's name over there, but this is in reference to the obvious. The speed limit in the canyon – why is that listed as one of the last proposals in this project? You mentioned that you are going to address that later in phase three. Wouldn't that be the primary goal of a safe stretch of road? When that speed limit was increased from 55 mph to 60 mph, where are the statistics backing up the increase in accidents? These are all real basic issues for a lot of people who live around here. I for one believe that a reduction in the speed limit wouldn't necessarily mitigate these proposals you have. Turning lanes are great idea but ultimately speed kills and if anybody has lost anyone to a traffic related accident, they can attest to that. I just want to know why it is at the end of the agenda.

A: (Jeff Ebert) This was one of the things that came up at our December meeting. The speed limit was very much on your minds. I'll grant that you are passionate about it, but I'm passionate about our project and we need to stick on that, I'm sorry. Our Director and the Col. of the Highway Patrol committed to doing another meeting where you can come and voice those concerns. I don't have the data here tonight to say whether or not it is better, worse, or indifferent. I'm just not prepared to talk about that at this time. The engineering we do is to deal with the geometrics in the canyon and those are things we deal with. The speed limit issue I know is foremost in your minds, but that is going to be talked about at the next meeting, and I would just like you to hold you passion until then, please.

Com: (Ken Morton) I've been a full-time resident for 28 years here. Will any private property be taken for this project?

A: (Jeff Ebert) Thank you for bringing that up. That is a very good question. Yes, at some of the widening and slope flattening locations there will be the potential of that. I mentioned that at the beginning when I talked about the two safety projects. The first one didn't involve any right-of-way, the second one does. Again, because we cannot go into final design, we don't know the specifics. But if there are locations up here, I want to hear from those folks. I think the best way is to come up afterwards and talk to us if you've got specific questions about your property. It might sound like I'm blowing you off and I'm not. I really do want to know that kind of information because that will drive how we can design this and fit that work within that. Yes, there will be some right-of-way required.

Q: (Dorothea Jude) I would like to know when the traffic light would be installed. Would we have to wait until 2008? How does it affect the speed limit leading up to a traffic light?

A: (Jeff Ebert) Because we can do that work independent of this work, obviously there needs to be some coordination because we are going to be doing some widening with that. But as we proceed into that, we can make provisions to go ahead and try and install that signal if it is warranted prior to this work being done, it is a lot cheaper. Traffic signals run in the $150,000 to $200,000 range. That's a lot of money too, but that is easier to find than $6 Million. We can try and do that beforehand. The speed limit, by putting a traffic signal in, we will look at that. Those of you who drive Huffine Lane know when some of those traffic signals were placed in there, we had to go in and lower the speed limit. To lower somebody from 65 mph on Huffine, then have them stop at a signal that is just a crash waiting to happen. So I think it would affect the speed limit at least in that Big Sky area both north and south of the turnoff.

Com: (Tom Butler) I'm with the Highway Patrol out of Belgrade. I don't want to start the speed limit tonight, as Jeff said, but one thing I would like you to keep in mind when you are discussing this tonight and it goes directly towards the environmental issues they are talking about. We can hang whatever we'd like on a post for a speed limit in this canyon, but we have to be able to enforce it. That involves widening the highway out and giving us some room to do something, which goes right towards the project, right towards the environmental issues, and all that is part of this. At another point we will talk about the speed limit issues, but while you are commenting on this, everybody needs to understand that all the problems you folks have driving up and down the canyon, we also have the same thing driving up and down the canyon and if we don't have room to come up there and enforce the speed limit that is in place today, then, we won't have room to enforce a lower one. That is going to take some widening. So, keep that in mind when you are talking to the department officials after this meeting or with your questions now. There is going to have to be some widening happen in this canyon for law enforcement to come up and do some good to help solve some of the problems.

Q: (Wayne Lee) I'm a resident of Big Sky. Relative to the signal, it took me about three hours to find a signal that would comply with federal standards. There is a company in Ohio and it would cost $20,000. We keep saying we need studies, hearings, meetings, and reports on – a little bit of action and a little less study would go a long ways. The other thing is looking at this project where you have your widening and your cut bank laybacks; I believe a rumble strip in the sidelines would do far more good than what you are proposing. I've worked on highway projects for a good portion of my life, and you're two foot widening of the existing shoulder is a sliver fill which is the most expensive thing you can do in the form of construction. So your bang for your buck, from what I'm seeing on this project, is extremely low. To me if you would have done better studies going into it, you could have prioritized where you were spending your money and come up with a whole lot better result for the dollars spent.

Com: (John Leeper) The black ice in the canyon is an enormous problem. Although we have thermometers on our cars, it often doesn't tell us if we are approaching an area that is shaded. You may think you don't have black ice, but you do when you hit it. I'm wondering if it would be possible to get some solar signs that actually take the temperature in some portions of this canyon so we'd know when we are coming up whether we've got a black ice situation or not. I know there are some portions of the canyon where you can spin out and a lot of people have, and it is amazing that we haven't had more fatalities on some portions of the canyon. So I could almost personally pick out some of those areas where you do spin out but if you could get a solar sign in there that gave the temperature so that when people are coming around, they've got a good idea whether it is frozen or not.

Com: (David O'Connor) Big Sky. Jeff, I know we are trying to keep this to the EA, but as you addressed some of the commitments that the Dept. Director and the Highway Patrol made, when we had the meeting here in December it seemed like there was a loud and clear desire from people to not only do the things you've mentioned, but also to mark any turnouts that we have to advise slow traffic to use them. I'm curious as to why that didn't make the list?

A: (Jeff Ebert) It did make the list and I forgot about it. I'm sorry. Part of the study we are doing and I know you don't like studies but you have to study these things. David is talking about several turnouts that are out there, but for us to advise people to pull off into them and then get back out into the traffic, we may be causing more crashes than we are preventing. By that I mean we ask somebody to come off the roadway, pull into the turnout, and they've got six or seven cars behind them, they need to be able to pull out to where once they get back onto the roadway they are not creating a hazard to themselves or to other cars coming up behind them. So that too is going to be looked at and we are going to provide additional signing to notate where those locations are. Thanks for reminding me about that.

Com: (Bob Donner) The question of law enforcement on speed limits came up awhile back. When you were talking about the signs that show your speed, it seems to me that it might be fairly simple if somebody is going over the speed limit to put on a video and take their picture, and the law enforcement could take place somewhere else without having to widen the road.

Q: (Amy Davis) I live in Gallatin Gateway. I have one question about the relationship between this study and the study that is about to be done on the Gallatin River to determine if it is an outstanding water resource. Has there been any consideration of the affect that study and a possible determination that the Gallatin is an outstanding water resource might have on your judgment of the significance and severity of the environmental impacts caused by the construction and the changes made in the roadway? Can someone address that?

A: (Laura Meyer) Yes. To answer your question we were aware that the Gallatin was nominated as an outstanding water resource. It hasn't gone through the process yet, so it hasn't actually been designated. We did coordinate with all the agencies that regulate water resources and water quality issues. So we've been working with them to stay within all the regulations that currently apply to the river. That

is all documented in the Environmental Assessment. If at a later date, the situation changes, then maybe the actions that are taken will change. But that would have to wait until things are formalized in that process. We did work with all the agencies that regulate water quality to ensure that we've minimized impacts to the river as much as possible. That is why a lot of the suggestions, improvements, widening and things like that are so restricted in this corridor because MDT is trying as much as possible to stay out of the river. There has been a lot of documentation already about the affects this roadway historically has had on the Gallatin River. It is listed as a water body on the 303d list, which is an impaired water body. So we've definitely been going through the process that is involved in protecting the river as much as possible.

Q: (Amy Davis) What is the projected time for completion of the outstanding water resource study?

A: (Laura Meyer) I don't know the answer to that.

A: (John Vincent) The 2007 Legislative Session.

Q: (Amy Davis) So that would be before this actual construction would occur?

A: (John Vincent) Gallatin County Commissioner. I believe the projected time frame is to allow the next Legislature to decide whether or not they are going to designate the river as an outstanding water resource. So DEQ is now doing the environmental document on that project. It has been funded. So it will be up to the next Legislature so it could be as far as a year from this April before the Legislature decided whether or not the river is going to be designated as an outstanding water resource.

Q: (Amy Davis) Well I'm just wondering if there were a FONSI that occurred before the determination on the outstanding water resource?

A: (John Vincent) I really don't think that it would make a difference because the outstanding water resource addresses source-point pollution and I believe that would not impact construction that is needed to complete this project.

Com: (Amy Davis) I would like to make one other quick comment. I don't think it is proper to separate the issue of lowering speed limits and improving enforcement of speed limits and other traffic rules like don't cross a double yellow line. I don't think it is proper to separate consideration of the impacts of those kinds of changes from consideration of the safety impacts of making the changes, which are being proposed tonight. You have a chart that says "summary of impacts" and then there are two columns. One is the no build alternative and one is the preferred alternative. But we don't have a lower speed limit increased enforcement alternative to consider. I think it ought to be considered at the same time.

A: (Laura Meyer) I wanted to remind everybody again that this is part of the public hearing and the comments that come up tonight will be addressed in the Environmental Assessment. If we don't answer them or we don't address them now or we don't have the answers, they are on record and will be addressed in the Environmental Assessment.

Q: (Susan Hellier) Can you tell me where we can get copies of the preliminary designs for a specific area?

A: (Jeff Ebert) The project is actually being designed in our Helena office. A gentleman by the name of Jim Davies is doing the design work. Roger Schultz back in the corner is the design supervisor. Are you looking for a phone number? Jim Davies phone number is 444-6227. He would be happy to give you what we have so far.

Q: (Rick Allen) I think I've gotten the message that we are not discussing speed limits and enforcement tonight, so rather than challenge you as most of the folks in the rooms have done and would like to do, I'd like to clarify a few things for the record. I think it would be useful to know why speed limit and enforcement was not made a part of the planning. Whether that is a policy of MDT, a state law, someone's opinion, and specifically whether Evans and Associates that performed this study was told not to factor those matters into the equation or whether they simply operated on the assumption that the speed limit and enforcement would not be changed?

A: (Jeff Ebert) Good question. We will have to get back to you on that. That is something we need to address. I'm going to give you an answer by saying engineers like to do things on the road because they feel the engineering is what drives the fixes that are out there. Human factors, speed limits, are beyond our control as engineers other than when we do our studies to determine speed limits. There is an engineering principal out there when setting speed zones, and I didn't want to go here but I'll touch on it, the state law says that we have to do an engineering study in order to affect speed limits. The engineering study that the department does is based on the industry standard, which says that you should set speed within the 85th percentile. Part of the studies we do is collect data and look at what motorists are driving the conditions that are out there, then you set the speed according to what the 85th percentile is doing. You can adjust that speed usually down based on what is determined to be the pace. The pace is a ten-mile increment of where most people are traveling within that band of speeds. One school of thought says that if you set a speed too low, (1) it is tougher enforcement – as Tom mentioned, engineering-wise it is not feasible; and (2) you get aggressive drivers, who come up behind somebody that might be going that speed, and they do things they shouldn't such as pull out and make a pass in a location that is not safe. So balancing that – we don't feel as a department that you can simply come in and just lower the speed limit. It is not going to have the same fix as is out here. With that being said, I invite you to come and talk to our Director and the Colonel of the Highway Patrol because that is beyond my expertise as an engineer.

Q: (Ben Bulis) When you go ahead and acquire right-of-way, do you purchase the property or do you just take it over?

A: (Jeff Ebert) Acquiring of right-of-way, we are required under federal statutes and do an appraisal to appraise the value of the property at current market values within this area. It is going to be based on what property is selling for in this area and through the corridor. Remember we are next to the river and it is pristine and such. We are going to have to pay current market value. Where the take comes

in is when we don't agree on a price based on the market value, the department through eminent domain, has the ability to acquire that land and pay the market value to that individual as compensation for that land. If we don't come to an agreement and we go to court, we deal with the judges on that.

Q: (Ben Bulis) Acquiring the land, do you put that in the preliminary cost estimate for the project?

A: (Jeff Ebert) Yes, we've guestimated an amount. But again we don't have the final limits, so it is our best guess. We constantly update our estimates. We just went through an effort last fall and updated all those costs and looked at inflation and projecting it out to 2008 when the construction will occur. So we added three years for inflation. It is our best guess.

Q: (Anne Marie Mistretta) I live here in Big Sky. I have a question about whether or not you plan to install emergency telephone systems along the road. If not how will timely information, urgent information, get transmitted to law enforcement so they can change those variable message signs to say something other than "winter conditions drive safely, thank you"? I'll give you an example, December 14th driving at 1:30 up canyon to Bozeman past mile marker 51 – I do realize that there are agencies that do not agree with feeding the Bighorn Sheep salt, however MDT for all intents and purposes is feeding salt to the Bighorn Sheep, and there were about five of them standing and feeding right smack in the center of the road. Three hours later at 4:30 I was driving south, those same sheep were standing there eating and the light, of course, was getting very bad. By that point, people were taking the law into their own hands, parking their cars and running south in the canyon, up to a quarter and a half mile, to flag trucks to slow down. If we can't get information out of that canyon to people who can change those signs such as we needed the night the high school bus sat for almost one hour because we could not get information out of that canyon to families. We haven't done what we need to do to improve this road.

Q: (Ruth Lott) I'm going to follow right on the same idea. In this 85th percentile, they are not factoring in black ice and sheep in the middle of the road and that seems to me to be environmental. So there is no way speed is not part of the environmental process here and it just has to go in.

A: (Jeff Ebert) Could I get back on your comment about the variable message signs? To get information on those variable message signs our crews drive up and down the canyon on a periodic basis and in fact when storms are occurring they are out there constantly. They have the ability, with their radios, to radio messages back. The intent, with the variable messages signs, is that we are going to get set up to where our section people have the ability through their computers in their offices, to change those signs to whatever is necessary. For example if there was a crash at mile marker 60 and the road was closed, our intent is to get that information on the variable message signs and provide good information so that we can assist in cutting the amount of time people have to sit and wait. So yes, we have that ability right now and we will sue it now that those are out there.

The telephone comment – what we've found is that it becomes a cost benefit issue. How many do you put out there? If there is a crash, what is the likelihood

that the crash is going to occur right next to that phone? It is not very likely. How do you space them, how many do you space, and how do you find out how many phones are affected by vandalism? You bring up a point, and we'll look at it and see. I'm not ruling if out right now but I'm just telling you some of the costs involved in doing that might not be worth the benefit. That is a good question and a good comment.

Q: (Anne Marie Mistretta) Laura said you are working with the FWP, and I realize this is infrastructure, but could someone be working with FWP to be sure that they understand the sheep are on the road eating the salt that they won't feed to them up mountain from the road?

A: (Jeff Ebert) That is one of the things we will coordinate with and one of the things we are finding with the types of materials that we are using out here, if it causes other issues we will look at that and see. It may be that we have to discontinue the use of that. We are going to look at it and we are going to address it with this project.

Q: (Kevin Germain) I have a question for either David Evans and Associates or Commissioner Vincent. This gets back to the question earlier about the outstanding resource water. I know there is a lot going on with the Gallatin right now with the TMDL study and the Outstanding Resource Water Study. Is there anything with the outstanding water resource designation that would preclude or take away some tools from MDT for widening the road, with the Gabion baskets as well as any sort of bridge realignment that we should be aware of?

A: (Jeff Ebert) When that TMDL issues came to be a federal court judge in Missoula, Don Maloy, issued a restraining order against the Department of Transportation and shut down all projects being let that were within that area. I would hope, and I think the work DEQ is doing is hopefully going to get us … because that was byproduct to us. Any projects that were near those waters, we could not let to contract. I'm not an expert on TMDL's but that was what happened when it came up before and I suppose there is that threat again. Our intent as state government is to address those issues and to make sure our project isn't a hindrance to them meeting those requirements for that.

The other thing, in order to do the construction, there will be some permits that have to be issued from the Department of Environmental Quality – 124, Section 404 with the Corp. of Engineers, then the contractor also has to get some permits too. So that whole thing will be addressed when we get down to actually doing the construction.

Q: (Kevin Kelleher) I live at milepost 54 in the Karst area. Specifically on the bridges I have three questions. The measurement of the old bridge at the West Fork is 54 feet, the new proposed bridge is 88 feet in length, the width of the old bridge is 30 feet, the new width is 76.8 feet. Would it be prudent or possible to get that stop signal in before construction begins on the bridge? Which direction would that bridge be widened – towards the river, towards the main Gallatin at the confluence, or will it be widened to the west of the West Fork?

A: (Jeff Ebert) Those are going to be final design issues that we are going to have to address. Again the EA looked at what those tentative impacts could be. Before

we do that we may have to tweak the width and length of that as we proceed to final design. Right now I can't specifically tell you how far either way – those are a final design issue that will come up as we proceed.

Q: (Kevin Kelleher) The EA says it will keep the same center line, so that would lead me to believe the distances would be split on each side. The most important thing is the right hand turn lane into Big Sky. Right now it is a dangerous situation if you are driving south and you have a lot of traffic turning into Big Sky. I watch locals every day pull out in front because I'm going further south towards Bucks T-4. The other thing I didn't notice in the EA and maybe it will be in the EIS, but there is nothing about noise abatement. Specifically, noise ordinances against the use of Jake brakes, non-muffler vehicles including motorcycles, at all in the EA. It is become a particular problem not only on US 191 but also on Montana 64 with the empty gravel trucks coming down the mountain and using Jake brakes all the way down. Will noise abatement be addressed in the EIS?

A: (Jeff Ebert) Yes it will.

A: (Laura Meyer) As far as Jake brakes and other things like that. Those are restricted by local ordinances. MDT has no control over those types of things. As far as federal noise studies, MDT is required to do a detailed noise analysis if you are going to be adding lanes, or adding travel lanes, or shifting the alignment of a roadway. This project doesn't do any of those things so it doesn't meet the requirements of a project where noise assessment is needed. So noise was not considered an issue in this project since none of those things are occurring.

Q: (Kevin Kelleher) But wouldn't that be addressed in an EIS? I know it needs a local ordinance but because there is no local government here, we can't pass an ordinance against the use of Jake brakes and other loud vehicles. I know the State of Montana, through the Highway Patrol, can enforce the muffler-less vehicles and situation like this, but it is definitely an environmental impact in the canyon and should be looked at as the amount of traffic increases especially heavy construction traffic.

The third issue regarding the "use slow vehicle" signs, Highway 12 along the Lolo River in Idaho is far more dangerous than this road. They have a 50 mph speed limit and every single turnout is posted that slow moving traffic must use vehicle turnouts when delaying four or more vehicles. I lived here and worked on this project for a long time, we go back 25 years asking for those signs to alert tourists delaying traffic to use these pullouts. I have to disagree with you as far as the safety issue of them coming back into traffic. When I go home to my home at night I'll use the new Portal Creek pullout if I've got a lot of traffic behind me as a matter of courtesy so that all the traffic behind me doesn't have to stop when I turn left into my home at milepost 54.7. So I would strongly suggest that you put the slow vehicle turnout signs as a very high priority in this project.

Q: (Phil Holbrook) I've lived a mile south of Karst for 28 years. I help Roger with the white crosses and many of those are the result of single vehicle accidents because of the design of the road not because people speeding or people avoiding someone else. It is because the road design fools the traffic and by the time they realize they need to slow down it is too late from some of them. We have many

crosses and we've had many people go off the road in these places. I think your engineers should address every one of those crosses. Take a look and try and find some background on what happened in those accidents.

Q: (Trilly Calendar) Big Sky. Just following that up, with the history of the road and the number of the accidents that have taken place there, it would seem from an engineering standpoint you guys could analyze where the most dangerous areas are or have been historically. I imagine that is essentially why you have what you have here. Has there been any consideration for any sort of dividers dividing traffic in those areas where you've had those types of problems which would potentially eliminate any sort of head-on and maybe some of the more severe types of traffic accidents that have taken place?

I have a clarification question as well. I want to be sure I understood that the study you have proposed for the signal at 64 and 191 is really separate from all of this and could happen well in advance of 2007-08 construction project.

A: (Jeff Ebert) I'll take your last question first – yes we can look at doing that. Again we have to coordinate with the widening we are going to do – the widening brought up by Kevin Kelleher.

The second issue you brought up having to do with the dividers. That was actually brought up to me just the other night. One of the things that was brought up was a K-barrier. I've been an engineer for 20 years or more and I don't know what a K-barrier is. The other thing that was talked about was a Jersey barrier. We do use Jersey barrier, which is a concrete that is placed down the medians in a lot of interstate highways. The department has not used the thin slats as explained to me as the K-barrier anywhere in the state. That is something we can further look at as this project progresses.

A couple of comments or concerns: (1) How much do you put? Do you put it just in the curves, or throughout the whole thing? That is another obstacle that can be struck and cause crashes. I'm of the opinion without further information, I feel like that is more detrimental because there is more instances of it being able to be hit. The other thing is (2) what about people who need to make left-hand turns out of those if it is continuous? What about wildlife crossing through that area? Those are issues that we are going to have to look at. We will put it on our list of things to study and look at as this project proceeds to final design.

Q: (Kevin Barton) Big Sky resident. Is there any review of 64 as far as separated turn lanes at the intersection of US 191?

A: (Jeff Ebert) Yes, we are looking at doing that. I think the geometrics are that we are going to have a dedicated left-turn, a dedicated right-turn, and then there will be three additional lanes where there is only two right now.

Q: (Greg Fields) I live at the south end of the project at mile marker 32 at the Elk Horn Ranch. I want to know how come you think Red Cliff instead of mile maker 39, which is the dead man's curve, and you've got all the traffic at the Corral and Rainbow Ranch and people going in and out of there and I don't think that is on there? I have a laundry list of questions for all these different things.

You say you are looking at little road strips in the middle of the road, how does that affect the snow plows when they come through and it builds up on that? You are talking about a concrete barrier and snow builds up on that. All that is going to be more hazardous than just a straight road that is open so they can come through and clean it up. They do a pretty good job right now. You add that and it is going to mess it up worse. To go back to using the turnouts – I drive big trucks, horse trailers, stock trucks. You want me to go … I can barely get that thing going 45-50 mph. You want me to slow down, turn off, and start up again? I'd be going 15-20 mph for another mile or two, and you want me to turn off again? It will take me two hours to get out of the canyon. That is just crazy.

A: (Jeff Ebert) This is the first time I've heard about dead man's curve. I apologize for not knowing everything there is to know about this area. That is something we can look at. It is my understanding that these locations were identified back in 1996, and we do this on an annual basis. So I'll look into that at reference post 39?

Com: (Greg Fields) I see this all the way down to Buck T-4 (referring to graphic), I don't see a lot of white crosses through here. This is a lot of rear-end traffic with people slowing down and more inconvenience stuff. You know people get upset over people dying like at dead man's curve and the other day over at Spanish Fork. That is a really flat straight area that goes into two sharp curves. That is where people get in trouble. They are going 60-70mph, I don't care what the speed limit is, and they hit those curves and you can't do that curve that fast in dry, wet, or any condition. I think personally all the emphasis should be on those harsh curves not these straight a ways and all that crap. Harsh curves are where people are dying not these rear-end jobs out here.

A: (Jeff Ebert) We will look into reference post 39.

Q: (Ben Bulis) I had a question at our last meeting and you called it sand gravel. Is there any way to make the size of the chips smaller that you use in the canyon since they don't get blown off because of the wind in the canyon?

A: (Jeff Ebert) Ross Gammon is our Maintenance Chief for this area and I'll let him address that question.

A: (Ross Gammon) Yes there is. We used to use 1/2 gravel, and we've still got some old piles of that stuff around. We are not using that stuff anymore. All of our new gravel is 3/8 minus and it all goes through a screen. There are other areas where we are looking at going below that spec. So that is what we currently use – everything is 3/8 minus. But even a 3/8th rock, if you are going 60 mph and a truck picks that up and throws it at your window, is going to break it. I've got two or three at home to prove it myself.

Com: (Greg Fields) When you say that you go through a filter process for your rocks, I see your piles built up and over the summer you have all the weeds growing on top of it. Then in the winter you kick it out onto the road where it gets spread on to the side, then, you've got weeds on the side. I know that personally because I'm picking those things up all the time and it is a bad deal because then it spreads from the road into the public land onto my private property, which my

horses and cows aren't going to eat. It just keeps spreading all the way across. It's an environmental issue.

A: (Ross Gammon) Why don't you give me a call and you and I will talk about that because we've got a heck of a weed program going? You can call me at 556-7004.

Q: (Lynne Malpeli) I have a question for MDT, what is the ruling on commercial through the National Park?

A: (Jeff Ebert) There is a lot of controversy with the National Park Road and I don't want to get into that because that is not what we are here for. We maintain the road through the park but it is their restrictions as to what goes through that park and what doesn't go through that park. We don't have control over that from and MDT standpoint.

Q: (Lynne Malpeli) Who would I call?

A: (Jeff Ebert) Somebody from the National Park Service.

Com: (Denise Wade) From Big Sky. I have a couple of comments – one is related to the sheep that we talked briefly about. There are three locations where they cross the road. They cross US 191 pretty regularly and I was wondering if it would be possible to put signage or flashing lights or something like that similar to what is happening further south with the elk as you go through Yellowstone. They are on those blind corners at mile marker 51 and Durham Meadows and right in there pretty regularly in the wintertime going for the salt on the roadway. So I would like to have that as part of the public record that I wouldn't mind seeing some flashing lights or something warning people who don't drive it regularly that they are frequently there.

My second comment is kind of related to speed limit and I know we are not supposed to talk about that but I want it entered into the public record that US 191 is pretty much a closed system and if somebody is speeding and highway patrol or sheriff is following them, they aren't going anywhere. You follow them until you pull them over. I don't think anyone is going to pull over and stop in the middle of the road. There are plenty of places to pull over. There are many pullouts. I realize that not every single spot has a shoulder where you can pull off but I feel like I would like to see the Highway Patrol not use that as an excuse to not catch speeders or not have any direct influence towards people who are speeding.

A: (Jeff Ebert) First of all, could you state those locations and we'll look into where those sheep are crossing.

Com: (Denise Wade) One is by Deer Creek. One is milepost 54, another is milepost 51 to 52, somewhere in there, and another is milepost 48 or a little bit further south. Tonight when I drive home I'll tell you.

Com: (Jeff Ebert) Ok. We'd better move into a closing because a lot of people are leaving. There are written forms for comments up front. Please take some home with you and pass them to your neighbors. The last comment, please come to the Montana Department of Transportation, Highway Patrol meeting to discuss that

because that is something that can be done a lot sooner than our construction project.

Com: (Charity Watt Levis) Before we close the meeting I'd like to let Representative Koopman make his comments.

Com: (Rep. Koopman) Just a quick announcement. Some of you are on my email list. I'm trying to have a constant update of the developments with the canyon issues. Those of you who aren't, I just recommend that you get on it. In fact it is just not an email list, I also mail out to those who don't have emails. I'm trying to keep a newsletter going so I can be a funnel of information and can provide that as I learn of new developments. It isn't exhaustive, but it is helpful. So, you can email me at koopman@imt.net or just give me your name and address and email address tonight if you are not already on that. Also there will be updates on the awareness campaign that we are trying to get started to try and influence those driving habits out there. Thank you.

CLOSE THE PUBLIC HEARING PORTION OF THE MEETING

Charity Watt Levis: Again we would like to thank you all for coming tonight and remind you that the staff is going to hang around after the meeting. If you have specific questions that weren't appropriate to ask during the public hearing, we will be here. If you have other thoughts that come up, give us a call or use the comment forms if they specifically relate to the Environmental Assessment. Thanks for hanging in there and staying so long.

End of transcription

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Control Number A544
Project ID: STPHS 50-1(14)8
Date/time: 7 pm on Tuesday, January 10, 2006
Location: Ophir School Gynmasium
located 1.5 miles south of the
US 191/MT 64 intersection at 45465 Gallatin Rd

Public Meeting Sign-in Sheet
Gallatin Canyon Environmental Assessment and proposed safety improvements

Please print!

	Name	Mailing Address	Zip Code
1.	Ruby Delzer	P.O. BOX 160549 Big Sky	59716
2.	LINDA & RICK ALLEN	66260 GALLATIN Rd	59730
3.	Greg L. Fields	ELKHORN RANCH 33133 Gallatin Road Gallatin Gateway, MT 59730	59730
4.	TOM BUTLER	PO Box 279 JEFFERSON CITY MT	59638
5.	Ben Bilis	P.O. Box 160436 Big Sky, MT	59716
6.	Marjorie & Marty Pavelich	PO box 160448	59716
7.	Gary & Shirley Hagan	PO Box 161427 Big Sky	59716
8.	Joe Brown American Wildlands	P.O. Box 6669 Bzmn MT 5977	59715
9.	KEVIN GERMAIN	PO BOX 1369 ENNIS, MT 59729	59729
10.	Jeff Patten	585 Shepard Way Helena, MT	59602
11.	Daniel Schlapkohl	P.O. Box 161071 Big Sky MT. 59716	59716

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12.	Bob & Carol Zaretner	PO Box 161101 Big Sky, MT	59716
13.	PAMELA CANTWELL	37190 GALLATIN Rd GALLATIN GATEWAY MT	59730
14.	ROGER CANTWELL	" "	"
15.	Sheila White	BOX 43 GALLATIN GATEWAY 5973[illegible]	
16.	Fred Weschenfelder	65840 Gallatin Rd Gallatin Gateway	59730
17.	Mike Raymond	PO Box 457 Gallatin Gtwy	5973[illegible]
18.	Anne Standt	PO Box 160163	59716
19.	Woody Burt (WOODY BURT)	56 RUBY RANGE LN, GALLATIN GATEWAY	59730
20.	William & Heidi Olson	P.O. Box 161147, B.S.	59716
21.	Connie Barton	750 Beaver Creek Rd	59730
22.	F CRAIG BARBER	122 KUNDERT LANE BOZEMAN	59718
23.	Julie Jenkins	POB 1611412	59716

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24.	Rudy Noorlander	1001 E Missoula Belgrade MT	59714
25.	Barry Brosten	MDT Helena	59620
26.	Margaret John Leepa	Box 161144 Big Sky MT 59716	59716
27.	Michelle Aplucer	P.O. Box 161284 BS!	59716
28.	Roger Koopman	811 S. Tracy Ave. Bozeman	59715
29.	Donna Thompson	PO BOX 161341 3115 Crow King B.S.	59716
30.	Klaus + Christl Gump	PO Box 161247 Big Sky, MT	59716
31.	Lynne & John Malpeli	PO Box 160043 Big Sky ~~59716~~	59716
32.	Barbara + Phil Haberecht	54245 Gallatin Rd Gallatin Gateway MT	59730
33.	Paul Young	35 Castle Rock Rd Gallatin Gtwy, MT	59730
34.	Mike Scholz	P.O. Box 160279 Big Sky, MT	59716
35.	Jud Malpeli	P.O 160043 Big Sky	59716

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36.	RICHARD NORTON	PO BOX 160264 BIG SKY	59716
37.	Scott Meyers	P.O. Box 161574 BIG SKY	59716
38.	HARRIET & JERRY FISHEL	P.O. BOX 161075 BIG SKY	5976
39.	Marne Hayes	P.O. Box 160100 Big Sky	59716
40.	mike Oshier	Po Box 160085 BS	59716
41.	Jennifer Kramer	17 E Clara Ct. Bzn.	59718
42.	Russ Madigan	257 E HODGEMAW RD BOZEMAW	59718
43.	Jessica Martin	PO Box 161495 Big Sky	59716
44.	Sarah Bickerstaff	PO Box 160021 B.S.	
45.	Karen & Tim Nelson	PO Box 161611 BS	59716
46.	Thomas B. Robinson	15230 Cottonwood Rd Bzn. 5~~9715~~	59718
47.	Jerry Chura	101 Ruby Mtn Way Gallatin Gateway	59730

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	Name	Mailing Address	Zip Code
48.	Joel Sciaffoizi	Box 160846 Big Sky	59716
49.	Paul Wagner	49825 Gallatin Rd G. G., MT	
50.	Sue Suzanne Wagner	[illegible]	5973[illegible]
51.	Rick Lott	P.O. Box 161717 Big Sky	59716
52.	Suzanne/Dave Baetz	P.O Box 160732 Big Sky	59716
53.	Kent Lyn Morton	P.O Box 160298 Big Sky	59716
54.	Burke + Marty Stancil	PO B. 160698 Big Sky	5971[illegible]
55.	Tammy Blakeley	PO Box 160512	59716
56.	[illegible]	686 Low Bench Road Gallatin Gateway 59730	59730
57.	Mary Dornberg	PO Box 160[illegible] Big Sky	59716
58.	David O'Connor	Po Box 160516 Big sky	59716
59.	Jim Cashell	615 Melborne Ln Bozeman 59718	5[illegible]18

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60.	Wayne Hill	Box 160277 Big Sky	59716
61.	Marilyn Hill	Box 160277 Big Sky	59716
62.	Darrylou Schreiner	49890 Gallatin Rd. G G MT	59703
63.	Michael Ketschek	PO Box 161359 Big Sky MT	59716
64.	AMY DAVIS	PO BOX 715 GALLATIN GTWY	59730
65.	Wayne + Ginger Lee	PO 161820 B.S, MT 59716-1820	
66.	KIRK DIGE	P.O. Box 160472, B.S.	59716
67.	AL JAEGER	POB 6214 BSM	59771
68.	JOE OLSEN - MDT	P.O. Box 3068 Butte, MT	59702
69.	Brian McNeil	3710 Fallon Suite C Bozeman MT. 59718	59718
70.	Jake + Katie Grimm	5645 Ramshorn Gallatin Gateway, MT	59730
71.	CHAD L. OUELLETTE	3290 CEDAR PK. BOZEMAN MT.	59716

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72.	Bob Donner	134 State Rd 23 Briggsville WI	53920
73.	Lesa Corwin	PO Box 161736 Big Sky, MT 59716 lesacorwin@earthlink.net	59716
74.	Dorothy A Refling	P.O. Box 160097 Big Sky 59716	59716
75.	Dennis & Sandi Mecklenburg	PO Box 160462 Big Sky	
76.	Elizabeth Chura	101 Ruby Mtn Way Gallatin Gateway MT	59730
77.	DOROTHEA E. JUDE	P.O. Box 160414	59716
78.	Denise Schmidt	160506 Big Sky.	59716
79.	KEVIN BARTON	160554 B.S	59716
80.	Linda Wortman	POBox 160718 BS	59716
81.	Jerry Wortman	Box 160718 B.S	59716
82.	Carolyn O'Neill	42530 Gallatin Rd	59730
83.	Terry O'Neill	" "	"

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84.	Bob Crawford	33 Hoback Ln. Bozeman, MT	59718
85.	Dax Schieffer	PO Box 160544	59716
86.	Melissa Maynard	201 S. Wallace Ste AS Bozeman	59718
87.	Ron Downer	~~597~~ Box 160023 Big Sky	59716
88.	Jeff Ebert	MDT Butte	
89.			
90.			
91.			
92.			
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96.	Katie Coleman	PO Box 161433 Big Sky	59716
97.	JoDean Bing	50645 Gallatin Rd Gallatin Gtwy MT	59730
98.	KEVIN KELLETTEN	54725 GALLATIN RD GALLATIN GWY, MT. 59730	59730
99.	Dennis Dietrich, MDT	Box 475 E. Helena Mt	59635
100	Roger Schutts, MDT	2585 Stagecoach Drive East Helena MT	59635
101	NANCY HALSTROM	Bozman RD 3710 Fallon Street Bozman MT 59718	
102	Anne Marie M. STRETTA	161399 Big Sky	59716
103	Audra McAllen	55265 Gallatin Rd #1 Gallatin Gateway	59730
104	Ian P. MacConnachie	54200 Gallatin Rd Gallatin Gtwy.	59730
105	Kay Hoover	805 Beaver Creek Rd Gallatin Gateway MT	59730
106	[illegible]	Box 161593	59716
107	C EASTERLING	1104 S. MONTANA APT B9	59715

Please print!

Montana Department of Transportation

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Control Number A544
Project ID: STPHS 50-1(14)8
Date/time: 7 pm on Tuesday, January 10, 2006
Location: Ophir School Gynmasium
located 1.5 miles south of the
US 191/MT 64 intersection at 45465 Gallatin Rd

Public Meeting Sign-in Sheet
Gallatin Canyon Environmental Assessment and proposed safety improvements

Please print!

	Name	Mailing Address	Zip Code
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Please print!

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Public Meeting Sign-in Sheet
Gallatin Canyon Environmental Assessment and proposed safety improvements

Please print!

	Name	Mailing Address	Zip Code
120	PJ MAYLAND	Po Box 161034 Big Sky MT 59716	
121	Bob Donoua	Box 160220 59716	
122	Randy Van Horn	PO Box 161453 59716	
123	Beth Vanthorn	POBox 161453 BS	59716
124	Gary and Ginna Hermann	211 Nordic Lane (P.O Box 161837) Big Sky	59716
125	JAN RUPERT	P.O. 161660 Big Sky	
126	Leslie Piercy	PO 160245 BS.	59716
127	Rich Piercy	"	"
128	Kate Ketschek	PO Box 160001 Big Sky	59716
129	Patty Meoczkiewicz	PO Box 161566 Big Sky	59716
130	Bonnie Wolff	140 Firelight Meadows	
131	Les & Terye Loble	POBox 161817	59716-1817

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Public Meeting Sign-in Sheet
Gallatin Canyon Environmental Assessment and proposed safety improvements

Please print!

	Name	Mailing Address	Zip Code
132	Charity Watt Levis	MDT Helena	
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Control Number A544
Project ID: STPHS 50-1(14)8
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Public Meeting Sign-in Sheet
Gallatin Canyon Environmental Assessment and proposed safety improvements

Please print!

	Name	Mailing Address	Zip Code
144	Denise Wade	PO Box 160195 Big Sky	59716
145	Lorelle Demont	MDT Helena	
146	LAURA MEYER	DEA	
147	DEBRA PERKINS-SMITH	DEA	
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Please print!

Written Comments Received During the Public Comment Period with Responses

Comment 1	Response
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION BOZEMAN UNIT OFFICE BRIAN SCHWEITZER, GOVERNOR STATE OF MONTANA (406) 586-5243 FAX: (406) 587-9726 2273 BOOT HILL COURT - SUITE 110 BOZEMAN, MONTANA 59715-7249 RECEIVED JAN - 9 2006 ENVIRONMENTAL MASTER FILE COPY Ms. Jean Riley, P.E. Bureau Chief, Environmental Servi Montana Department of Transportation 2701 Prospect Avenue Helena, MT 59620-1001 January 4, 2006 Re: GALLATIN CANYON – SLOPE FLATTENING/WIDENING STPHS 50-1(14)8 Control No. A544 Environmental Assessment Dear Ms. Riley, Per your request we have reviewed the Gallatin Canyon – Slope Flattening/Widening Environmental Assessment. The State of Montana holds Ownership of the land and Minerals located below the low water marks of navigable rivers and lakes. The Department of Natural Resources and Conservation (DNRC), Trust Land Management Division, administers these lands on behalf of the state. The Gallatin River is defined as a navigable river from Taylor's Fork to Central Park, Montana. Within this area the DNRC will require easements for bridges, utility lines and pipelines over, below and above navigable waterways and a land use license (LUL) will be required for work in the river channel.	MDT will coordinate with DNRC for easements and land use license, as necessary. For any work below or above the Gallatin River, a Navigable Rivers Land Use License (LUL)/Easement will be required from the Area Manager of the DNRC Bozeman Unit.

(continued on next page)

Comment 1 (cont.)	Response
Structures that will be affected include the 35 MPH Bridge in section 15 T5S R4E, the Jack Smith Bridge in section 27 T6S R4E and any utility lines or pipelines associated with them. These structures will require easements. Thank you for the opportunity to comment on the Gallatin Canyon – Slope Flattening/Widening Environmental Assessment. If you have any questions or comments please contact me at (406) 556-4507 or DNRC Bozeman Unit, 2273 Boothill Court, Suite 110, Bozeman, MT 59715. Sincerely Craig Campbell Craig Campbell Bozeman Unit Manager CC: Garry Williams, CLO Area Manager Jeanne Holmgren, Bureau Chief REMB	

Comment 2	Response

RECD JAN 20 2006 MASTER FILE COPY

Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

RECEIVED
JAN 13 2006
ENVIRONMENTAL

January 11, 2006

Jean Riley, P.E.
Bureau Chief
Environmental Services Bureau
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

Dear Jean Ms. Riley:

The Department of Environmental Quality (DEQ) reviewed the environmental assessment (EA) for the proposed Gallatin Canyon Slope Flattening and Widening Project.

After reviewing the EA, the DEQ's comments include:

2a. On page 3-34, the discussion regarding the West Gallatin should note that in addition to metals, runoff from highways can also include substantial amounts of sand and salt, where heavy snowfall necessitates increased highway maintenance activities. Sand, sediment (silt and clays), and nutrients associated with sediments in the West Gallatin are factors affecting aquatic life, resulting in a slight to moderate impairment. These pollutants pose long-term, continuing impacts and should be mitigated.

2a. As stated on pg 3-34 of the EA, "Runoff can carry sediments and other pollutants and debris into streams and wetlands, which degrades water quality". The mitigation measures discussed on pg 3-35 are intended to minimize these impacts.

(continued on next page)

Comment 2 (cont.)	Response
2b. The mitigation discussion on page 3-35 should note design options that provide for curbing that directs runoff water to permanent sedimentation retention structures. Also, the proposed bridge design at this site should consider design features that directs bridge surface runoff off the bridge along curbs, and not through drain ports that empty directly into the river. **2c.** **2d.** Similar design features should be considered and discussed on page 3-34 involving the Gallatin River, and in the "wetlands" impacts section of the document, pages 3-37 - 3-45. MDT should also refer to the "Montana Department of Transportation (MDT) Design Considerations for Permanent Erosion Control Features to Reduce Sediment Transport." This document was prepared by a team of MDT engineers in August 2005 and notes several design features that are applicable to this proposal. Additionally, DEQ suggests that wetland mitigation take place in the same watershed (the Gallatin). If on-site mitigation is not feasible, could MDT research mitigation either above or below the project area on public lands within the Gallatin Hydrologic Unit code (10020008)? **2e.** Lastly, the downstream segment of the Gallatin River below Spanish Fork (outside of the project boundary) is also listed as impaired due to flow alteration and dewatering. Sometimes, additional investigation finds that siltation (a pollutant and therefore requiring a TMDL) is also an issue because of the flow alteration. Thank you for the opportunity to review the report. If you have any questions regarding DEQ's comments please contact Jeff Ryan, Water Protection Bureau (406-444-4626), Robert Ray, Water Quality Planning Bureau (406-444-5319), or me (406-444-6780). Sincerely, Tom Ellerhoff Environmental Program Manager cc: R. Ray, DEQ J. Ryan, DEQ	**2b.** Sediment retaining structures would require a larger area than is currently available along the roadway at bridge end locations. Additionally, permanent detention structures would not be feasible due to the nature of the disconnected improvement sites of the project and limited right-of-way. **2c.** MDT's hydraulic engineer for this project will investigate potential opportunities to improve sheet-flow along the bridge deck surfaces to help minimize point discharge. MDT will follow best management practices as described on page 3-35 of the EA. Storm water runoff directed from the bridge deck ends to outfall points would be filtered via natural vegetative buffer prior to the runoff stream entering the water body. Language to this effect will be added to Section 2.0 Clarifications to the EA in the FONSI. **2d.** See responses to comments 2b and 2c. **2e.** The mitigation measures discussed in the EA on pg. 3-35 would be undertaken to prevent sediment transport so that the potential for flow alteration downstream would be minimized. No permanent dewatering is associated with this project.

Comment 3	Response
Montana Fish, Wildlife & Parks 1400 South 19th Ave Bozeman, MT 59718 MASTER FILE COPY RECEIVED 08 200 January 27, 2006 RECEIVED JAN 30 2006 ENVIRONMENTAL Jean Riley, P.E. Environmental Services Bureau Chief Montana Department of Transportation 2701 Prospect Ave, Box 201001 Helena, Montana 59620-1001 Dear Ms. Riley, I recently reviewed an environmental assessment (EA) from your Department for the Gallatin Canyon Slope Flattening and Widening project, STPHS 50-1(14)8, Control Number A544, October 2005. This is my first opportunity to comment on this proposal, although I note that the EA includes earlier comments from our Department contained in letters to Laura Hunter dated July 11, 2003 and December 2, 2003. The EA addresses proposed highway changes intended to improve road safety along about 38 miles of US Highway 191 as it parallels the West Gallatin River in a narrow canyon between mileposts 32 and 70. The need for the proposed safety improvements is clear both from the document and from our experience traveling this highway on a regular basis. As you know the West Gallatin River supports a substantial trout fishery well known to anglers that is both ecologically and economically significant to this area. Many portions of the EA acknowledge the potential risks of harm to that fishery that the proposed construction activities could pose, including adverse effects on channel morphology and the potential to concentrate and deliver increased amounts of various pollutants to surface waters. In a general way the EA identifies appropriate safeguards against these unwanted effects during construction, including several references to "Best Management Practices" that will be used during construction. Based on these acknowledgements and assertions, I anticipate that your construction plans will include actions to reduce or mitigate sediment delivery, and to prevent discharges of petroleum products or other harmful substances into nearby ditches, or to lands capable of delivering these substances to local waterways. For these reasons I have only a few additional comments to offer at this time: (continued on next page)	(See next page)

Comment 3 (cont.)	Response
3a. 1) I understand that at this level of design and environmental review many specific construction details and impacts have not yet even been identified. However, statements such as "Culverts would be designed to accommodate fish passage *to the extent practicable*" (emphasis mine, Table S.2, Page S12 of the EA) as mitigation for fish passage effects are a concern if they are intended to mean that MDT will unilaterally make these kinds of decisions. Perhaps that is not what was meant, but this may be an implication to avoid. I do recognize that most of my misgivings about this type of decision-laden language in the EA are safeguarded in other permit review processes.	**3a.** MDT will provide fish passage to the extent practicable at any drainage known to have a fisheries value. A statement to this effect will be added to the Waterbody Modifications and the Fisheries sections of the EA (See section 2.0 Clarifications to the EA in the FONSI).
3b. 2) I did not see any discussion of intentionally engineering grades to establish settling ponds, wetland filters, or similar features that might reduce the amount of materials the new roadway would deliver to this drainage. I wonder if this road improvement project might not be a good time to consider incorporating such features where feasible? An important project goal should be to ensure that the completed project poses no direct or persistent environmental threat to the local watershed. Perhaps more could be done than to just rely on the assumption that the completed project would not be significantly worse than the existing condition?	**3b.** See responses to comments 2b and 2c above.
3c. 3) Safe angler access to the West Gallatin River is an ongoing concern along Highway 191, particularly as traffic has increased so much recently with continuing construction activities at Big Sky. Are there opportunities within the general scheme of the proposed road safety improvements to intentionally enhance safe public access to the River? The bridge replacements seem to offer one opportunity. Perhaps there are others? From a fisheries and river recreational standpoint, the replacement of two existing three-span bridges with clear span bridges is an especially welcome improvement. I just wonder if other opportunities to enhance public recreational use of the area have been considered, in addition to the road safety improvements?	**3c.** Opportunities to enhance public recreational use of the area and to the River were not a focus of this project per se because the purposed of the project was roadway safety. However, MDT has incorporated a multi-use path on the west side of the West Fork Gallatin River Bridge that would improve pedestrian access to both sides of the river. Additionally, the proposed turn lanes at the Red Cliff Area, Moose Creek Area, and Greek Creek Area would all provide improved access to the campgrounds, which provide river access at those locations.
3d. 4) At this time, the Montana Department of Environmental Quality (DEQ) is developing an Environmental Impact Statement (EIS) evaluating a petition to designate the upper West Gallatin River as an Outstanding Resource Water (ORW) under provisions of state law and the Clean Water Act. The initial public scoping process for this EIS ended in late December 2005. Since most of the areas impacted by the Gallatin Canyon Slope Flattening and Widening proposals coincide with the area under consideration for ORW designation, I wonder how the Montana Department of Transportation (MDT) is coordinating this project with DEQ? In addition, it seems that MDT should also evaluate how the proposed roadwork will potentially effect a recommendation to designate the upper West Gallatin River as an ORW.	**3d.** MDT has corresponded with DEQ regarding the nomination of the Gallatin River as an ORW. The DEQ project manager, Greg Hallsten, indicated that DEQ has no concerns with the Gallatin Canyon safety improvements relating to the ORW designation. This is primarily because the ORW designation is not affected by non-point source discharges or temporary impacts. However, MDT will continue coordination with DEQ throughout the course of this project.

(continued on next page)

Comment 3 (cont.)	Response

I really appreciate this opportunity to comment on the Gallatin Canyon Slope Flattening and Widening EA. I hope that my remarks are useful to you at this time. I look forward to learning how your project plans develop. Please contact me with any questions. Sincerely, Joel Tohtz FWP Fisheries Biologist 406-994-6938 jtohtz@state.mt.us. C: Pat Flowers, FWP Region Three Supervisor Bruce Rich: FWP Region Three Fisheries Manager 2	

Comment 4

(Note: Due to its large attachment, Comment 4 was relocated to page 67 at the end of this matrix.)

Comment 5	Response
From: "Ruby Delzer" <ruby@delzers.com> **To:** <mdteiscommentsgallatin@mt.gov> **Date:** 12/22/2005 10:01:53 AM **Subject:** Comment on Gallatin Canyon EA **5a.** 1. We need a stop light at the corner of Highway 191 and Highway 64 to control the traffic in and out of Big Sky. In the morning between 7:30 AM and 8:00 AM it is almost impossible to make a left hand turn as the traffic coming into Big Sky is solid. In the evening between 4:30 and 6:00 PM again it is impossible to make a left hand turn from our office to get onto Highway 191 or even to cross Highway 64 to go to the Conoco. **5b.** 2. The speed limit should be lowered to 35 mpg from the Big Horn Center to the Exxon. **5c.** 3. We need a walking path on the new bridge for safety or else a walking bridge over the Gallatin River on the right of way. From Ruby Delzer Insert a catchy tag line here Ruby Delzer Real Estate Agent Coldwell Banker Delzer Real Estate 135 Highway 64 Unit #1 Big Sky, MT 59716 ruby@delzers.com tel: fax: mobile: 406-995-4825 406-995-3029 406-223-4826	**5a.** MDT is evaluating a traffic light at this location separately from this project. If a traffic signal is warranted at this location, the design for the signal would be considered in the design of the MT 64/ US 191 intersection. **5b.** See response to comment 4b, page 68. **5c.** A sidewalk is proposed for the west side of the new West Fork Gallatin River Bridge near Big Sky.

Comment 6	Response
From: "Ernest Rajala" <colr@9plus.net> **To:** <mdteiscommentsgallatin@mt.gov> **Date:** 12/27/2005 6:54:37 PM **Subject:** Comment on Gallatin Canyon EA We comment about the Gallatin Canyon US 191 project from the prospective of having a summer home near mile marker 64 for 23 years. **6a.** Please try to reduce and or eliminate the commercial 18 wheelers. Those behemoths roar by at or near speed limit day and night. **6b.** Lower speed limit to 55 between Gallatin Gateway and the YNP boundary. Actually there are many curves which really are unsafe over 55 mph. **6c.** Make left turn lanes / turnouts especially between Big Sky (mile marker 49) and Spanish Creek where there are many curves and forested aread obstructing vision to side roads . **6d.** Enforce the law. We observe that a great many vehicles with Gallatin County license, especially 6T, do ignor the double yellow lines. Good Luck, Mr & Mrs EA Rajala **CC:** <dps@deainc.com>, <llhu@deainc.com>	**6a.** US 191 is part of the National Highway System (NHS) and therefore is considered part of the National Network of roads. Federal regulations (23 CFR 658) do not allow states to deny reasonable access of vehicles to the National Network. Additionally, US 191 is a Federal-aid eligible highway and STAA- dimensioned commercial vehicles may legally operate on all Federal-aid eligible highways under State and Federal law. **6b.** See response to comment 4b, page 68. The posted speed limit is 60 mph with lower speed advisories at curves. **6c.** As discussed in Chapter 2 of the EA, seven left-turn lanes are proposed between mile marker 49 and Spanish Creek. **6d.** See response to comment 4b, page 68.

Comment 7	Response
January 1, 2006 Jean Riley MDT Environmental Services PO Box 201001 Helena, MT 59620-1001 Dear Ms. Riley: We located the environmental assessment of the Gallatin Canyon on the MDT website, but it is much too large to download. The major comment that we want to make on the safety improvements concerns the speed limit. The speed limit on Highway 191 from the bridge south of Gallatin Gateway to Yellowstone National Park is too high. It should be 45 mph in narrow curving sections and 50 mph on the straight-aways , and no higher. Sixty mph is too fast for road conditions, weather, numerous side roads, and heavy traffic. The proposed safety improvements described in the Bozeman Daily Chronicle will certainly improve the road, but driving too fast and tailgating are the major causes of accidents. The first change to be implemented should be to lower the speed limit. We have driven that road many times, in daylight and in the dark, and try to avoid it whenever possible because the posted speed limit is too fast for safe driving in most sections. Because it is posted many drivers will drive that fast anyway. Sincerely, Noreen Breeding Roger Breeding Noreen and Roger Breeding 1970 Star Ridge Rd. Bozeman, MT 59715	See response to comment 4b, page 68. Speed advisories that are lower than the 60 mph posted limit exit on curves segments of roadway in the corridor.

Comment 8	Response

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JAN – 6 2006
DEPT. OF TRANSPORTATION
BOZEMAN, MONTANA

January 4, 2006

Linda G. Vrooman
P. O. Box 10156
Bozeman, MT 59719
(406) 763-4224

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JAN 13 2006
ENVIRONMENTAL

Governor Brian A. Schweitzer
Office of the Governor
Montana State Capitol Bldg.
P. O. Box 200801
Helena, MT 59620-0801

Dear Gov. Schweitzer:

I am sure you are aware by now that four more people were killed on Highway 191 in Gallatin Canyon in the last 24 hours. Tonight's TV news stated the driver of one of the vehicles was thought to have been drinking. ✓ JIM LYN ✓ TOM HAN

I am enclosing some articles regarding drunk driving in our area and an editorial about a solution for Highway 191. We have lived off of 191, three miles north of Gallatin Canyon, since October, 1997, and have witnessed the increase in traffic and had near misses with speeding and/or drunk drivers. I have given a lot of thought to what could make the highway safer.

It is my opinion that we have three things in play here: 1.) The speed on the road is too high, particularly in the Canyon; 2.) The Big Sky growth and building boom adds hundreds of vehicles morning and evening to the construction sites; 3) Driving while drinking is considered part of the culture here and not much is done legally to change that idea.

8a. The cheapest and fastest "fix" is to lower the speed limit to 45 or 50 mph and to strictly enforce it. The money that the MDOT plan would cost could easily pay for enough highway patrol to be permanently assigned 24 hours a day to the highway.

8b. A second road needs to be built over the mountains to Madison County. This road is necessary to help relieve traffic on 191, as well as an exit in case of a serious emergency such as a wildfire or earthquake. Part of Big Sky is in Madison County, but Gallatin County seems to shoulder the brunt of its impact. Perhaps Madison County would actually house some of the hundreds of construction workers that drive to and from Big Sky every day.

8a. See response to comment 4b, page 68.

8b. The current project is to improve the safety of 191 as it as it traverses Gallatin Canon. Alternative routes therefore were not considered as part of the project.

(continued on next page)

Comment 8 (cont.)	Response
2. **8c.** Semi truck traffic must be rerouted to the Madison Valley, or on the Interstate system, where a lot of people here believe it is legally supposed to be. **8d.** An "outside the box" idea: Make Big Sky its own county, perhaps including the area south to West Yellowstone. Big Sky's population is not totally made up of "deep pockets," but if the part time, seasonal residents were taxed in proportion to their impact and size of their buildings, it could help make Big Sky self-sufficient. The traffic would be reduced on the highway. Examples: a high school would eliminate school buses and private cars with young drivers. The county services that require trips to and from Big Sky (planning, plat approvals, voting) would be eliminated. It would become a real town with services and shopping so trips to Bozeman would not be necessary for essentials. **8e** The MDOT plan is interesting in that is doesn't address the speed limit at all. As I've written to you before, they are only interested in moving traffic. And to all the critics of a lowered speed limit who say, "It is the slow drivers who are the problem," I believe the slow drivers are the ones who have a sense that they are driving the safe speed, not the too-high posted speed limit. Thank you for all of your concern and help in this matter. Sincerely, Linda Vrooman Linda G. Vrooman Cc: MDOT Gallatin County Commissioners Bill Murdock, John Vincent, and Joe Skinner	**8c.** See response to comment 6a. **8d.** The project is to improve safety in Gallatin Canyon. This proposal is beyond the scope of this project and MDT's authority to implement. **8e.** Thank you for your comment. See response to comment 4b, page 68.

Comment 9	Response
A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Comment on a Project Submitted: 01/09/2006 10:36:59 Project Commenting On: Highway 191 Name: Alan A. Wanderer, M.D. Address Line 1: 2055 North 22nd Ave., ste # 1 City: Bozeman State/Province: MT Postal Code: 59718 Email Address: aw@aacmt.com Phone Number: 406 582 1111 Fax Number: 406 582 1112 Comment or Question: January 9, 2006 I am a resident and physician in Bozeman. My family has a condo in Big Sky and my son and son-in-law travel almost daily to Big Sky to work on information technology projects. I am writing to your organization to present my views on the need for safety improvement for higway 191. This highway has become an major safety hazard because of its intrinsic swerving 2 lane roads, increased traffic and frequent bad weather conditions. Our family has been increasingly concerned about the safety problem which affects all individuals who travel between Bozeman and Big Sky. Consequently there is a need to make some immediate and long term improvements for this highway. Roger Koopman has some good ideas on how to improve human behavior with improved signage and reduced speed limits. However that will not entirely solve the problem as there is also a need for structural improvements in the road. The following are queries that I would like an answer to: **9a.** 1. Why can't the department install thin strong (metal or other material) barriers separting each lane? The barriers could be installed initially just in the areas with the most frequent accidents. They would not have to be continuous so that persons could turn around if necessary.	**9a.** Installing barriers to separate opposing lanes of traffic would be considered a measure to reduce head-on collisions. However, it can also pose safety concerns because the barrier itself is an obstruction that could be hit by vehicles. As discussed in Section 3.2.3 of the EA, head-on collisions are not an issue in this corridor. Also, such barriers would further hinder animals as they cross the road, which is a safety concern for motorists as well as the wildlife. This measure also makes it difficult to perform maintenance on routes such as this that require frequent snow removal. Therefore, this type of barrier was not considered as a measure to improve safety on US 191.

(continued on next page)

Comment 9 (cont.)	Response
9b. 2. Why can't the department construct more turnouts for slow traffic etc? The turnouts that are there now are not adequate in numbers nor is there adequate signage indicating there presence.	**9b.** The primary purpose of the existing turnouts in this corridor is to provide stopping points for recreational access. These turnouts are not intended to serve as pull-offs for slower traffic and may not meet the design criteria to be designated as such. Due to the additional impacts associated with expanding existing turnouts and implementing new turnouts in this corridor, turnouts are outside the scope of this safety improvement project. However, MDT will complete a study of existing turnouts later this year to evaluate the size, sight distance and signage associated with the turnouts.
9c. 3. Why can't the department also install barriers to prevent vehicles from falling into the river?	**9c.** Guardrails exist throughout the corridor as necessary to prevent off road and overturning crashes. As discussed in Chapter 2 of the EA, new guardrail and/or upgrades to existing guardrail are proposed in all ten of the improvement areas for this project.
9d. 4. Why can't the department install solar lighting along unsafe stretches of the road?	**9d.** Solar mechanisms have been implemented previously and have not been functional in the canyon due to insufficient sunlight.
9e. 5. Why can't the department ask the state and county police to enforce speed limits and to monitor open alcohol beverages in cars of construction people who travel back to Bozeman at the end of the day.	**9e.** See response to comment 4b, page 68.
9f. If the answer is cost, then the department needs to create a referendum for the Gallatin County and ask residents if they are willing to create a bond to pay for improved safety on this highway. Another alternative is to be creative by installing toll booths at both ends of the highway that would require drivers who use this highway to pay their share of the cost. Additionally an added property or sales tax in Big Sky and Gallatin County might be a third alternative to pay for this project. Gallatin County's economy is very dependent on this highway and I believe most residents and businesses would see the value for imroved safety of this highway. In summary, I hope your department understands the need and gravity of this situation and will find immediate creative solutions to improve the safety of highway 191. Sincerely, Alan A. Wanderer, M.D.	**9f.** These options have been considered but are not included in this project for reasons described above. While cost is a consideration, it was not the deciding factor. A local bond issue is for the County to address and is outside the jurisdiction of MDT.

Comment 10	Response
serving you with pride RECEIVED JAN 12 2006 ENVIRONMENTAL Control number A544 Project name: *Gallatin Canyon Environmental Assessment and proposed safety improvements* Project ID STPHS 50-1(14)8 MASTER FILE COPY *Montana Department of Transportation* *Comment Form* ***Gallatin Canyon Environmental Assessment (EA) and proposed safety improvements*** Public meeting date and time: 7 pm on **Tuesday, January 10, 2006** Location: Ophir School Gymnasium located 1.5 miles south of the US 191/MT 64 intersection at 45465 Gallatin Rd You are invited to make your comments on this form and leave it with the meeting officials or take it with you and mail it to Jean Riley at MDT Environmental Services, 2701 Prospect Avenue, P.O. Box 201001, Helena, MT 59620-1001 by **January 27, 2006.** Comments may also be submitted online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml or by fax at (406) 444-7245 by **January 27, 2006**. Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary. Name and address: JoDean Bing 50645 Gallatin Rd Gallatin Gateway, MT 59730 h 406-995-4778 or 406-995 4519 w Comments: 1-9-06 We live just north of the Jack Smith Bridge Area. (Golden Gate Bridge) over the When we are driving North on 191 to our home, we often have to come to a complete stop because of oncoming traffic in the Southbound lane. The curve & ice before our driveway turn off is very dangerous. Other northbound drivers have a difficult time stopping when they see our car & blinker light. There are six families pulling off at this area. It's become harsh in both summer & winter.	This location was not identified as a high accident location and therefore is not within any of the proposed improvement areas. MDT will continue to monitor this section of US 191 for potential Safety Engineering Improvement Programs in the future.

Comment 11	Response
A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Comment on a Project Submitted: 01/10/2006 16:26:22 Project Commenting On: US 191 study based on death toll Comment or Question: I am unable to attend the meeting on the US 191 study but would like to offer some comments as a professional driver and manager of Karts Stage's airport shuttle service to Big Sky and WYS. **11a.** 1. Make the lower speed advisories on curves the speed limit rather than advisories. **11b.** 2. Make the speed limit the same day and night for all vehicles. 55 would make sense from the mouth of the canyon to WYS for sake of consistency and safety. Lowering the speed limit in an of it self isn't necessarily going to make 191 safer. **11c.** 3. In my opinion professional drivers are not the problem on 191 in the canyon and up to WYS. Tourists, especially in the winter who drive much slower than the posted limit cause most of the problems. It causes locals to make unsafe passing decisions because of the slow traffic. If slow traffic used turn outs to let tarffic by it would help significantly. Signs posted requiring vehicles to use turns outs if there are 6 or more (as an exapmle) vehicles behind them or they will be cited may help. **11d.** Is there an existing law that requires cars to yeild the right-of-way when they are impeding traffic by driving too slow? If not perhaps we need one. **11e.** 4. Improve sanding especially on known corners and shaded areas that are frequently cover with "black ice". Overall the crews due a great job in the canyon and they know the problem areas. Thank you or the opportuniy to provide recommendations for improvements on 191 between the mouth of the Gallatin canyon and WYS. Mike Connell, Karst Stage 556-3544 - mike@karststage.com	**11a.** See response to comment 4b, page 68 **11b.** See response to comment 4b, page 68 **11c.** See response to comment 9b **11d.** Yes – There is a State law (61-8-311) that pertains to minimum speed regulations. The law states that "the operator of a slow-moving vehicle behind which four or more vehicles are formed in line shall turn off the roadway at the nearest area where a sufficient and safe turnout exists in order to permit the vehicles following it to proceed." **11e.** Sand is easily blown off the road by traffic and requires repeated applications. The MDT Maintenance Department is very aware of the winter road conditions in the Gallatin county and appreciates your comment about them doing a good job overall.

Comment 12	Response
From: " Lake1" <lake@3rivers.net> **To:** <mdteiscommentsgallatin@mt.gov> **Date:** 1/11/2006 11:40:40 AM **Subject:** Comment on Gallatin Canyon EA Gentlemen: I find the suggestions concerning the travel safety of 191 to be well stated. I drive this canyon everyday to work and know the hazards quite well. One issue that I don't think has been addressed is the speed signs marking curves. A 45mph limit on a curve may reflect the speed you can travel on a "good" day, but this does not apply to an snowpacked, icy road. Maybe during the winter these speeds should be reduced. I have always believed in "driving the conditions " of the day. Many don't think that way. Thank you for your time. Barb Canode	See response to comment 4b, page 68.

Comment 13	Response

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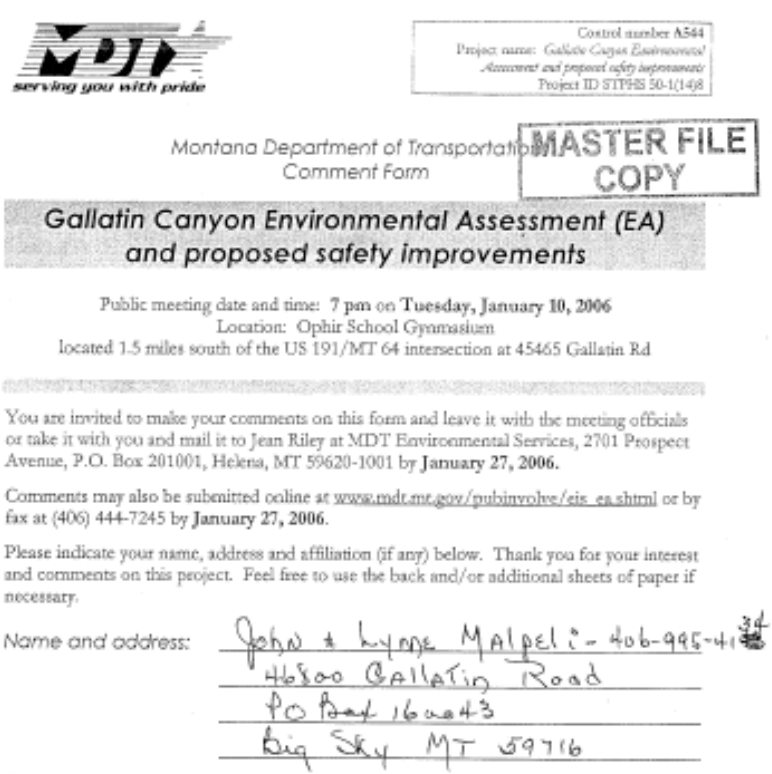
Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Woody Burt
56 Ruby Ranch Lane
Gallatin Gateway, MT 59730

Comments:
We Need Stoplight At Intersection of
191 + 64 — Now

See response to comment 5a.

Comment 14	Response



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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: John & Lynne Malpel - 406-995-41[illegible]
46800 Gallatin Road
PO Box 160443
Big Sky MT 59716

Comments:

14a. Install "No Passing" from MP 92 – MP 70 NOW!

14b. "Lower Speed Limit" NOW!

14c. ADD Phone System MP 32 - MP 90

14d. ADD - "Wildlife Migration Route" on Signage

14a. Past experience indicates that long stretches of "no passing" create a pent-up demand to pass and when the caravan of vehicle reaches a passing zone this pent-up demand can result in risky decision making on the part of the drivers.

14b. See response to comment 4b, page 68.

14c. See the public hearing transcript page A-16– response to question from Anne Marie Mistretta regarding emergency phones.

14d. See response to comment 4a, page 68.

Comment 15	Response

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Margaret Leaper
Silverbow 64 - Box 161145
BS 59716

Comments:
Why have you built all the Pullouts IF you do not use them.
Some Signage would help

See response to comment 9b.

Comment 16	Response

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Ron Downer
Box 160023
Big Sky 59716

Comments:

16a. Hiway 64 is falling apart! Cracks are being beaten into potholes by good trucks & will soon be a wreck if not fixed soon!

16b. In summer traffic backs up on Hiway 64 about 1 mile about 4-6pm at intersection with Hiway 191. Need a traffic light but also a right turn lane on Hiway 64. O've seen many near accidents here as cars head for the shoulder to go to the head of the line to make a right turn

16a. Highway 64 is outside the project limits and therefore this is beyond the scope of this project.

16b. See response to comment 5a.

Comment 17	Response

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: ROGER CANTWELL
37190 GALLATIN Rd
GALLATIN GATEWAY, MT 59730

Comments:
PAINT ON BLACK TOP 6 FT SKULL AND CROSS BONES WHERE A PERSON WAS KILLED, THIS SHOULD BE EITHER WHITE PAINT OR FLORESCENT PAINT.

Thank you for your comment. While it is a creative option, a skull and crossbones would not comply with MDT's current signing standards.

Comment 18	Response
Comments on Gallatin Canyon Safety to MDT January 14, 2006 We are full-time residents of Big Sky. We were at the November meeting, and the January 10th meeting, and are incensed that NONE of the proposed immediate safety items have been addressed, of course excluding the flashing lights put up after 4 more people died on Jan 3rd. We have driven the canyon for years. As you know, it has only gotten more dangerous. In fact, it is scary now just to think about driving to Bozeman and back, especially during the morning and evening "rush" hours. We are well aware that Montana, as any state, has a budget to contend with and issues all over the state. But we wonder if any are as urgently in need of immediate attention as this stretch of highway. We are all aware that there are procedures for mid and longer term improvements. But do you know that there have been literally dozens of quick and inexpensive life-saving solutions that have been proposed at these meetings which no one seems to be acting on. Shame on all of us, you and our system if we cannot try some of these methods to help save lives. Everyone seems to forget that if we don't get it exactly right we can always change or amend a simple sign, stop light or whatever. You have received multiple lists of ideas to improve safety. Certainly someone there can grab the bull by the horns, stop the CYA and implement some of these ideas now. Tim and Karen Nelson PO Box 161611 Big Sky, MT 59716-1611	See comment 9b regarding turnouts. See comment 4b, page 68 regarding speed and enforcement. See comment 5a regarding a traffic signal at MT 64. MDT will evaluate the northern portion of the corridor later this year for appropriate locations to install rumble strips along the centerline. This would be done separately from this project. Covering open loads was also a topic at that meeting. This is not within MDT's jurisdiction.

Comment 19	Response
RECEIVED JAN 19 2006 ENVIRONMENTAL  BOX 1037 • WEST YELLOWSTONE, MT 59758 • (406) 646-9365 14 January, 2006 Dear Jean; Thank you for the opportunity to comment on MDT's Highway 191 Project. Thank you for proposing the safety measures MDT has suggested for Highway 191. We'd like to suggest that additional steps too, might be taken to improve the ability of wildlife to cross 191 safely. Steps like including the construction of wildlife passways and trails under the expanding bridges, lower speed limits, increased enforcement, and break-the-beam technology like that used in Yellowstone National Park on 191. Thank you for considering our comments, and all you and MDT does for Montana. We remain; Respectfully, Craig Mathews Jackie Mathews Craig and Jackie Mathews	See responses to comment 4d regarding break the beam technology and wildlife passages, page 69.

Comment 20	Response
RECEIVED JAN 19 2006 ENVIRONMENTAL January 17, 2006 Ms. Jean Riley MDT Environmental Services 2701 Prospect Avenue P.O. Box 201001 Helena, MT 59620-1001 RECD JAN 30 2006 Dear Ms. Riley: Re: Gallatin Canyon Environmental Assessment In your process of requesting comments on the proposed safety improvements for Hwy 191 through the Gallatin Canyon, I have I believe an important and critical request: My family owns property close to Mile Marker 54 in the Canyon. Our home is on property that borders on the east side of Hwy 191. Directly across from our home and across the Hiway is a driveway leading to a bridge crossing the Gallatin River. Across this bridge is 100+ acres of land which was once my family's farm land and is now public land. (This land was purchased in 1976 with Nature Conservancy funds through the U.S. Forest Service.) Many people now take advantage of this public land for hiking, cross-country skiing, watching the wildlife etc. The problem is: People leaving that area and going north cross over the traffic lane that goes south. The vision in both directions is very limited. There is a very large "pull-out" approximately one fourth mile south of that driveway. Motorists should go to that "pull-out" to turn around and then head north but they don't!!!!. I think there should be a sign posted on the sign pointing to the land across the river (Tamphrey Meadows) or on the driveway from the bridge to the Hiway stating: NO LEFT TURN ALLOWED or RIGHT TURN ONLY. In 1970, my father who was driving a pick-up truck was hit by an 18 wheeler at this intersection. He did not survive, thus my concern. Your consideration of this matter will be appreciated. Would you please acknowledge that you have received this letter. Thank you. Sincerely yours, Sara Anderson 3509 Ravalli, Bozeman, MT 59718	See response to comment 10. Receipt was acknowledged in response letter dated 03/01/06.

Comment 21	Response
From: "Chuck Anderson" <cba@mt.net> **To:** <mdteiscommentsgallatin@mt.gov> **Date:** 1/17/2006 10:23:13 PM **Subject:** Comment on Gallatin Canyon EA (yes, I realize this may not be exactly the proper forum, but hopefully, MDT will hear us out or at least forward our comments to the "right" people) 17 Jan 2006 To Whom it may concern: If Montana does NOT currently have a statute mandating the turn-out of slow-moving vehicles on rural 2-lane highways, I would suggest adopting a statute similar to Idaho's: TITLE 49 MOTOR VEHICLES CHAPTER 6 RULES OF THE ROAD 49-639. TURNING OUT OF SLOW MOVING VEHICLES. On a two-lane highway outside an urban area where passing is unsafe due to oncoming traffic or other conditions, the driver of a vehicle traveling slower than the normal speed of traffic and behind which three (3) or more vehicles are formed in line, shall turn off the roadway at the nearest place designated as a turnout or wherever sufficient area for a safe turnout exists, in order to permit the following vehicles to pass.Of course, conspicuous signage notifying drivers of the statute, and perhaps even the penalty for violation, should be present.Thank you for soliciting citizen opinions.Charles B. and Lana S. Anderson, ownersCedar Creek #60, Big Sky, MTAntler Ridge, Lot 108, Big Sky, MT (no address) **CC:** <dps@deainc.com>, <llhu@deainc.com>	See response to comment 11c.

Comment 22

Montana Department of Transportation
Comment Form

Gallatin Canyon Environmental Assessment (EA) and proposed safety improvements

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Mr. ERIN E. HAYES
P.O. Box 161082
BIG Sky, MT. — I live on 191 SOUTH OF Buckles T-4
59716

Comments:
Sorry for the condition of this paper.

22a. ① Please put at least a "timed" or "periodic" traffic light at Hwy 64 & 191!

22b. ② Please reduce speed to 35 mph between Ophir school & Jack Smith Bridge! 50 mph thru 64/191 intersection is absurd. Smaller towns with less traffic volume have 35 mph limits thru their towns. Why different here? Is it the TRUCKING industry? Any deaths at this intersection I blame MDOT—period.

22c. ③ Center turning lanes will only be used to pass. That is why they are called suicide lanes!

22a. See response to comment 5a.

22b. See response to comment 4b, page 68.

22c. This project proposes to implement a two-way left-turn lane (TWLTL) in the Big Sky area due to multiple accesses. A TWLTL would remove traffic that is slowed or stopped to initiate left turns from travel lanes therefore improving the traffic flow and reducing the need to pass.

Comment 23	Response

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: MR/MRS HUBERT RAND OSLUND
66220 GALLATIN RD
GALLATIN GATEWAY, MT 59730

Comments:

23a. My husband & I have lived off Hwy 191 for almost 30 years. It is our opinion that no amount of "Proposed safety improvements" will improve the safety of our canyon. It has always been our experience that this canyon is not at fault and should be left as God created. What we need is smarter & prudent drivers. Policeman patrols who will dig deep into drivers pockets when drivers do not follow speed limits and Perhaps you

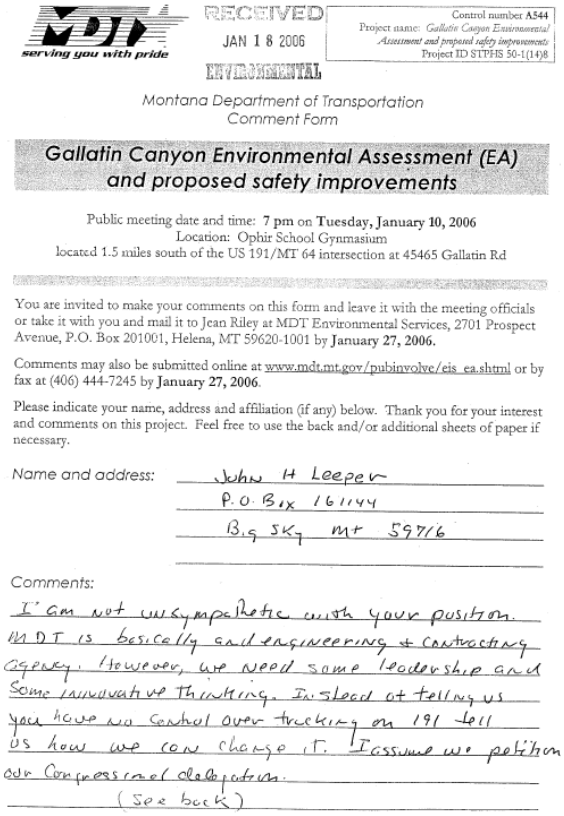
23b. should consider a bus service from Four Corners to Yellowstone

Respectfully submitted, Randi & Hubert Oslund

23a. See response to comment 4b, page 68..

23b. Gallatin County is currently in the process of applying for a Transit Grant to put bus services into the canyon.

Comment 24



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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: John H Leeper
P.O. Box 161144
Big Sky MT 59716

Comments:

I am not unsympathetic with your position. MDT is basically a engineering & contracting agency. However, we need some leadership and some innovative thinking. Instead of telling us you have no control over trucking on 191 tell us how we can change it. I assume we petition our Congressional delegation.
(See back)

#1 We need turning lanes for the pull outs so you don't get rear ended when pulling over for faster traffic

#2 We need State/County patrolmen on intersection control at 191 & Spur Road during Rush hours

#3 We need to have open rocks covered so debris is kept off the highway

#4 One speed limit doesn't fit all sections Some parts can be 65 but many areas must be much slower and should be posted.

Innovation:

1. Cameras on isolated sections to record license plates of chronic offenders
2. Cell phone receptors in the canyon so you can report accidents, poor driving conditions and can call home or appointments to tell them you are late.
3. Solar powered temperature signs to alert to Black Ice.
4. Lane Separation barriers similar to Built Creek Canyon

24a. 24b. 24c. 24d. 24e. 24f. 24g. 24h. 24i.

Response

24a. See response to comment 6a. The elected officials of Montana's Congressional delegation would be the appropriate persons to contact in this regard.

24b. See response to comment 9b.

24c. See response to comment 18.

24d. This is not within MDT's jurisdiction.

24e. See response to comment 4b, page 68. The posted speed limit is 60 mph with lower speed advisories on curves.

24f. This is a law enforcement issue and is beyond MDT's jurisdiction.

24g. It is not within MDT's jurisdiction to implement cell phone towers.

24h. See response to comment 9d.

24i. See response to comment 9a.

Comment 25	Response
From: John Metz [mailto:jwmetz@gmail.com] Sent: Thursday, January 19, 2006 11:49 AM To: Bousliman, Theresa Subject: US 191 in Gallatin Canyon Hi Theresa, I suspect that no one in state government is very concerned about what I have to say below, and realize it is a long message, but I feel obligated to express my concerns about highway safety on U.S. 191 in Gallatin Canyon. If possible, can you let me know who such a letter should be sent to in Montana government? John Metz Gallatin Gateway Safety on U.S. 191 in Gallatin Canyon: Bias Toward Speed U.S. 191 in Gallatin Canyon has been called the most dangerous road in Montana. There were 467 crashes on the highway between Four Corners and Big Sky from 2000 to 2004, five of which caused fatalities, according to the Bozeman Daily Chronicle. The newspaper did not provide more recent statistics. I first drove through Gallatin Canyon about ten years ago, and I continue to drive it today. I have noticed few changes, except for increased traffic. U.S. 191 is dangerous for obvious reasons-the weather conditions, the nature of the road (narrow and winding), the amount and type of traffic, and the way people drive. I realize the following proposal has been made: Proposed safety improvements include adding turn lanes, flattening side slopes and removing obstacles from the roadside, widening shoulders, improving sight distance by flattening curves and hills, upgrading guardrail, replacing the bridge over Swan Creek, and replacing the bridge over the West Fork of the Gallatin River to accommodate a new turn lane.	Comments noted. See below for specific responses.

(continued on next page)

Comment 25 (cont.)	Response
Hopefully these construction projects will improve safety. However, I've never driven the canyon and thought "this bridge oughta be replaced" or "we could really use a turning lane here." What I usually think is, "People are driving awfully fast on such a winding and narrow canyon road." Bias Toward Speed In the canyon, there is a bias toward speed. To make the canyon safer, this bias must be addressed by the State of Montana. The speed limit is currently 60 mph. As you first enter the canyon from the north this speed seems reasonable, but most drivers are going much faster than 60 at this point. I know that when I enter the canyon doing 60, another driver is likely to come up quickly behind me. When I turnout (to be considerate of the person breaking the law), the speeding driver quickly disappears as I get back on the road and up to speed. The other vehicle is going at least 70, often faster. **25a.** I realize patrolling the canyon is difficult, but more patrolling could an important part of the plan to change people's thinking about breaking the speed limit law in the canyon. It's a dangerous canyon, so people shouldn't speed through it. People have to be convinced to believe this and act accordingly. This northern part of the canyon should be patrolled to set a tone for the rest of the drive. Hit speeders with a couple tickets and they will have to start thinking-and driving-differently. Combine this with education and the canyon might see fewer accidents. All of this assumes that speeding in Gallatin Canyon is a main cause of accidents; that slower driving would help drivers make safer driving moves, because the driver has more reaction time or because the slower vehicle is easier to control in case of an emergency. When I say "bias toward speed," I mean that if the speed limit is 60 mph, in Gallatin Canyon drivers take that to mean a minimum speed. Citizens don't seriously obey the speed limit law, and government, for some reason, hasn't effectively enforced it, if the number of current speeders can be used to judge. The logic is this: Speeding is dangerous. People in the canyon speed. This makes driving in the canyon more dangerous. Questions that should be seriously considered and dealt with honestly in public dialogue include:	**25a.** MDT generally agrees with the comments that patrolling is difficult and people shouldn't speed through the canyon. The proposed improvements which include wider shoulders in some locations would make the Montana Highway Patrol's job easier and safer in pulling over vehicles for enforcement. See Comment 48 (Highway Patrol). Regarding enforcement of the speed limit see response to Comment 4b, page 68.

(continued on next page)

Comment 25 (cont.)	Response
Should the speed limit be enforced to to prevent accidents and save citizens' lives? Is it the State's job to take steps-on behalf of its citizens-to make a dangerous situation safer? Should drivers be allowed to drive however they want, without "Big Brother" telling them how to drive? The Problem with Slower Drivers A simple study with a speed gun would prove what everyone already knows: the speed limit in Gallatin Canyon is not taken seriously. Many drivers simply disregard it. And, these drivers tailgate slower drivers. In fact, they BULLY them. And this is accepted as normal, good driving. In Gallatin Canyon, the mindset is "the faster you can go, the better a driver you must be." The state, to make Gallatin Canyon safer, has to take serious action to change this mentality. Some drivers (fast ones no doubt) will tell you its the slower drivers who are dangerous in the canyon. But slow drivers are more of a problem because of the BIAS TOWARD SPEED. If the speeders would slow down, the slow drivers wouldn't be going so slow, so to speak. Someone might still drive 35, but coming up behind him at 45 would be different than coming up at 65, or 55. Slow drivers should use turnouts, and often. They should be educated to do so and reminded with road signs. Turnouts should be clearly marked, and drivers behind slow cars should not tailgate. I am not the fastest nor the slowest driver in the canyon. I realize how easy it is to drive up behind a slow driver. I don't feel that the state has taken any serious measures to prevent fast drivers from harassing (even unintentionally) slower drivers. You may be thinking, "What can be done about that?" The answer is: The state must have a serious education and law enforcement plan that counters the current BIAS TOWARD SPEED.	(see next page)

(continued on next page)

Comment 25 (cont.)	Response
You can't just build a bridge and flatten a curve. You have to convince people to drive slower-that it's the right thing to do. Driving slower will be a hassle, especially for some. Some people will lose even more time, and money, from their lives. The question is: Do we want to do anything to make the canyon safer? Or do we just want to keep taking our chances? Thus far, it seems like the citizens of Gallatin Valley and the political leadership in the State of Montana have chosen to take their chances and sacrafice safety. I recently looked through an issue of The Lookout, a free weekly paper published in Big Sky. Where they had space to fill, they included the following safe driving tip: Remember to use the turnouts. The driving tip was illustrated with a drawing of vehicles stacked on top of each other. This illustrates the bias toward speed . Publishing this tip-and no others-illustrates how on a dark, winding, narrow, and slippery road, the bias is toward speed. The tip is for the SLOW drivers-the bad drivers, the dumb drivers. The tip is for them to stay out of the fast drivers' way. A state-sponsored traffic safety campaign for the canyon could encourage The Lookout and other local publications to remind drivers of more than just using turnouts. Other tips could be: Remember not to tailgate slower drivers. Speed kills. Dim your lights. And so on .... **25b.** After the most recent driving fatalities in the canyon, the State of Montana did take action and place a big flashing sign at the entrance to the canyon. It says, "Drive Safely" and "Thank You." I think that goes in one ear and out the other. Why not change that to "Speed Kills" and include some statistics about the number of accidents on the road. The state has already put up crosses to get people's attention. "Speed Kills" and accident statistics would try to do the same thing: get people to drive more safely, which primarily means slowing down.	**25b.** Yes, a variable message sign (VMS) was recently installed near the north end of the canyon. The intent is that MDT crews in the canyon will radio information to office staff regarding real-time roadway conditions and emergency situations. This information could then be posted to the sign remotely, thereby enabling more relevant information about current road conditions to be posted on this sign.

(continued on next page)

Comment 25 (cont.)	Response
Why Is U.S. 191 Still So Dangerous? I believe that little has been done to improve safety in the canyon for two main reasons: 1) the geography of the canyon: narrow, winding, dark, inclement; and 2) most people who drive it want to go fast. They want to get home after working construction in Big Sky or after skiing. Semi-truck drivers want to take the shortest route from A to B and cover it quickly. This is all understandable, but in the case of Gallatin Canyon, the average motorist's desire to get from A to B quickly bumps up against a serious traffic safety issue. The road through Gallatin Canyon is dangerous, and thus far the mentality has been to put risk above safety. The state, I believe, needs to step in and become very active in changing this mentality. Thus far I don't think that's been done. Most drivers want to go fast through the canyon. They are in a hurry to get where they are going; they are familiar with the road; they drive reliable vehicles (often large trucks or SUVs) with BRIGHT headlights; they imagine they will not lose control because they haven't yet. If there were 467 crashes in four years, that's just over 110 accidents a year, a couple a week (not one or two every day). But due to the growth of Big Sky and elsewhere, the canyon drive will only become more and more dangerous. Now is the time to change the bias toward speed. Semi Trucks I challenge you to clock the driving speeds in the canyon, not just in clear daylight driving conditions, but in difficult nighttime ones. The drivers you must turn out for are often speeding. And often these are semi-truck drivers, and it's not unusual to see two or three or four of them speeding along in a row. For safety, semi-trucks should be crawling through the canyon-not flying through it at top speed. Remember! U.S. 191 through the canyon is known as the most dangerous road in Montana. I know some truckers won't like it, but if we want the road to be safer, it probably makes sense to say that semi-trucks, like all other vehicles (trucks, SUVs, busses, cars) should drive slower. The speed limit is currently 60 mph. Why not make it 45?	(see next page)

(continued on next page)

Comment 25 (cont.)	Response
We can agree that the truckers are skilled drivers, and no one wants to delay them without good cause. Everyone has experienced the temporary blindness caused by a semi truck whipping up the snow. Combine this with two more speeding semi-trucks, coming around a bend, with someone in the other lane tailgating a slow driver, and you've got a lot going on. Semi trucks often fly around curves in the canyon, driving very close to the center line. There's little room. This is one scenario for an accident. Of course, there are many others. Construction Projects I'm not against construction. I'm just skeptical of it sometimes-because I know it's good for the economy, so I think it's seen as a way to create jobs and make or keep friends. Other projects, involving guardrails, turnouts, and reflectors, could be helpful.	
25c. It seems like in some places it'd be difficult to put up guardrails. I wonder what can be done about that. I'd like to see more guardrails.	**25c.** See response to comment 9c.
25d. More and better turnouts could be helpful. There are many good ones now; some are marked better than others.	**25d.** See response to comment 9b.
25e. Reflectors can help drivers see where the road goes, which facilitates faster and smoother driving. This helps the slow goers get and keep going. Maybe there is some new reflector technology that could lighten up the canyon road. The State of Montana should research reflector technology and theory and even develop their own reflectors so that U.S. 191 can be a model of ingenuity and safety . What are the best reflectors and what is the best reflector system that can be used in the canyon? Why not find out and use it? Upgrade reflectors. (In some places they are very helpful already. Do that in more places. And do it now.)	**25e.** In 1998 the MDT installed double reflectors along the shoulders from Big Sky to the mouth of the canyon. As new reflector technology becomes available the Department will continue to access the applicability of the new technology in situations such as the Gallatin Canyon.

(continued on next page)

Comment 25 (cont.)	Response
But there's a mental construction project to be done as well. Some would say it's to educate the public about the dangers of driving too fast for driving conditions. Presently, I think most Montanans feel that driving a little fast in dangerous conditions is a Montana thing to do. It's cool. It's tough. At the very least, it's okay to do. Montanans are rugged, adventurous FAST DRIVERS. This mentality, one can argue, causes accidents. At present, some people like to drive a little fast (or a lot fast) through the canyon. Things must be done to help these people think they should drive a little (or a lot) slower. More patrol (I know that's not easy) and more education (newspaper articles, TV reports, signs, and various other kinds of media) should be helpful.	
25f. I think the state should take the lead in this fight to educate the public and change their bias toward speed. I think it would take longer for a private citizen group to effect change, and they'd end up going through the state anyway, eventually. The state of Montana must jump in now and start getting things done-not waiting for the mass of citizens to lead, but leading them into a safer situation.	**25f.** MDT does provide education through public announcements that concern drinking, speeding, snow plows, etc.
Highway Patrol	
25g. In one area I won't be too presumptuous: State Highway Patrol. I imagine State Troopers are a bit frustrated by what they can do to improve safety in the canyon. More Troopers in the canyon would probably help-but that requires more Troopers (a staffing/budget issue). The question is: Does this area have enough State Troopers on patrol?	**25g.** See response to comment 4b, page 68..
Schoolchildren	
25h. Finally, schoolchildren drive the canyon each day from Big Sky to Bozeman and back. These are less experienced drivers on Montana's most dangerous highway, in all sorts of weather conditions at fast speed (if they are doing the speed limit). The state should be taking the lead here. If you wanted to create a really hazardous driving situation, you'd create U.S. 191 in Gallatin Canyon, then put a lot of high-school-age drivers on it.	**25h.** Comment noted.

(continued on next page)

Comment 25 (cont.)	Response
How Serious is Montana about Traffic Safety? Sometimes I think the state has been just plain negligent about U.S. 191 in Gallatin Canyon, but, I think too, the state simply reflects the public's attitude. It looks like it will take a lot more deaths before citizens and government leaders commit to changing the bias toward speed. What is the public's real concern here? (Safety or speed?) Will anything really change? Who should take the lead? If it's somehow determined that measures should be taken to make U.S. 191 in Gallatin Canyon safer, then what measures should be taken? Below is a summary listing of my suggestions: **25i.** 1. Education campaign to change the public's thinking about speeding through Gallatin Canyon. **25j.** 2. More law enforcement in the canyon. **25k.** 3. Guardrails, turnouts, and reflectors. **25l.** 4. Limit semi-truck speeding, by prohibiting semi's in the canyon if necessary.	**25i.** This request has been forwarded to the MDT Director's office for consideration. **25j.** See response to comment 4b, page 68. **25k.** See response to comments 9b and 9c. See response to comment 25 regarding reflectors. **25l.** See responses to comments 4 (page 67) and 6a.

Comment 26	Response
January 21, 2006 To Jean Riley: I am writing in support of the proposed safety measures for Highway 191, such as the plans to widen the bridges over Swan Creek and the West Fork of the Gallatin River. I also strongly encourage additional measures to improve the wildlife's ability to cross Highway 191 safely, such as over- and/or under-passes, wild-life warning signs, dear reflectors and whistles, break-the-beam technology, and construction of wildlife trails beneath the expanded bridges. I believe the safety of the wildlife and people go hand-in-hand. Thanks for taking the time to read my comments. Sincerely, Rebekah Bunting Rebekah Bunting 3070 Sawmill Rd. Bozeman, MT 59715	See responses to comment 4, page 67.

Comment 27

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Control number A544
Project name: *Gallatin Canyon Environmental Assessment and proposed safety improvements*
Project ID STPHS 50-1(14)8

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Montana Department of Transportation
Comment Form

Gallatin Canyon Environmental Assessment (EA) and proposed safety improvements

Public meeting date and time: **7 pm** on **Tuesday, January 10, 2006**
Location: Ophir School Gymnasium
located 1.5 miles south of the US 191/MT 64 intersection at 45465 Gallatin Rd

You are invited to make your comments on this form and leave it with the meeting officials or take it with you and mail it to Jean Riley at MDT Environmental Services, 2701 Prospect Avenue, P.O. Box 201001, Helena, MT 59620-1001 by **January 27, 2006.**

Comments may also be submitted online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml or by fax at (406) 444-7245 by **January 27, 2006.**

Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: AMY F. DAVIS
220 E. WILLIAMS RD.
PO BOX 715
GALLATIN GATEWAY, MT 59730

Comments:

27a. I object to the MDT proposed Gallatin Canyon slope flattening/widening project. The stated purpose of the project is safety improvement. I believe that the steps which are needed to improve safety are: (1) Lower the speed limit to 50 mph, and (2) provide effective enforcement of the speed limit ~~through increased~~ and other traffic laws in the Canyon, employing increased Highway Patrol manpower and such technological devices / methods as are appropriate. Applying available public funds to enforcement, as described in (2) above, would, I believe, be a far more effective means of improving safety than slope flattening/widening and would also have the great advantage of having no negative environmental impact. This outstandingly beautiful road should not be damaged before non-destructive alternatives have been implemented.

27b. I further object to the proposed slope flattening/widening because I do not believe it will improve safety. Rather, it will have the effect of promoting faster driving, and since MDT cannot eliminate many of the unpredictable hazards on the road (e.g., game crossing, sudden icy patches, cars stopping to turn where turning lanes are not provided), such faster driving will increase the number of accidents.

27c. Also MDT should immediately act to keep Canyon traffic signs (e.g., speed limit, caution, terminal) clear of snow and ice, so that they are legible after winter storms, when they are essentially needed.

Response

27a. See responses to comment 4, page 67.

27b. This project does not propose to change the posted speed limit in the corridor. It is not anticipated that the proposed improvements would promote higher speeds, but they would provide a safer roadway facility. If roadway hazards are encountered, drivers would be better able to recover due to the wider shoulders and flatter side slopes or guardrail in the improvement areas.

27c. Comment noted.

Comment 28

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: JACQUELYN EDENS
66895 Gallatin Rd.
Gallatin Gateway, MT 59730

Comments:
I have lived in the Canyon since 1956 and seen changes in the road and speeds limits (from none to 55mph to the current 60mph. Never have I seen such wild, insane driving. What is needed, in my opinion, is: 2 Patrolmen, 3 or 4 surveillance cameras (moveable) which take a picture (license) and the speed limit of the vehicle; and, a speeding or reckless driving fine of at least $200⁰⁰ for the 1st offense & up from there! Changing the speed limit won't help.

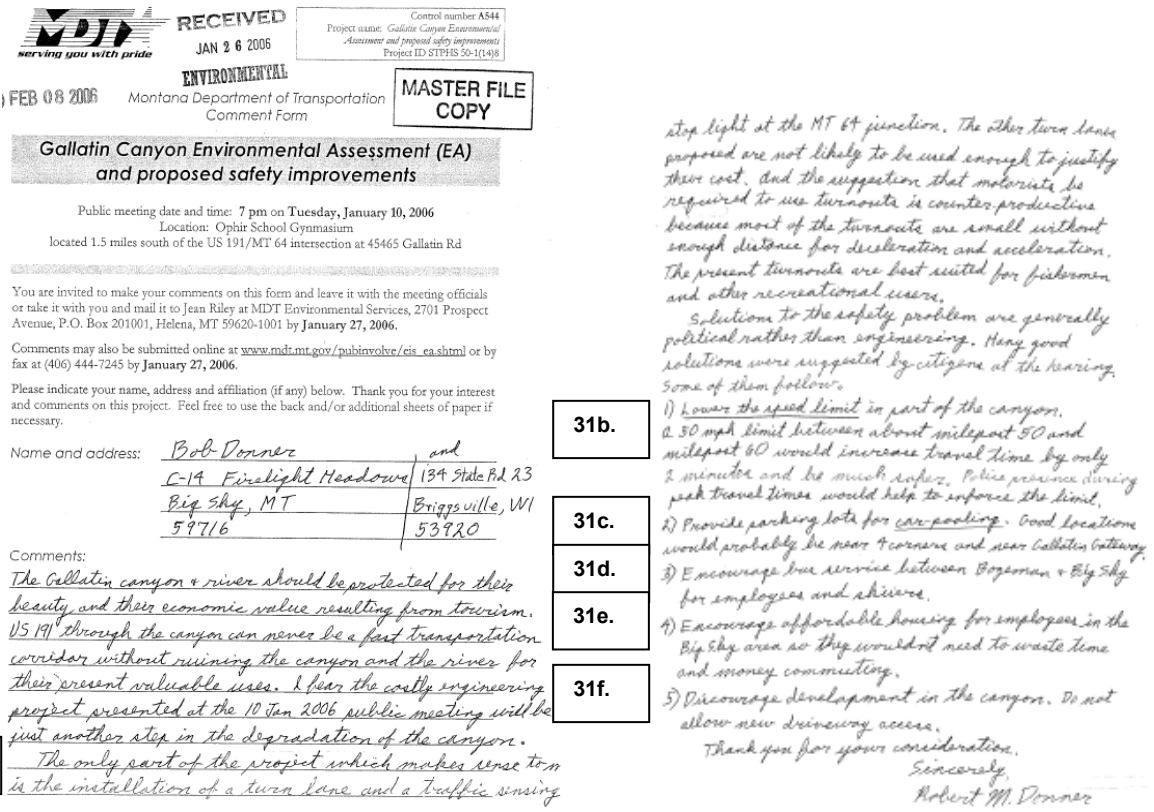
Response

See response to comment 4b, page 68.

Comment 29	Response
Susie Kern MASTER FILE COPY **From:** NONIEKERN@aol.com **Sent:** Wednesday, January 25, 2006 2:09 PM **To:** jkern@quellos.com **Subject:** Rt 191 in Gallatin Cyn I live in Big Sky and have read the article in Jan 12 "Lone Peak Lookout". I think the only way to solve the Canyon problem is to construct several passing lanes on 191 at least as far as Big Sky. Pull offs and turning lanes help, but you are wasting all our money on "gentler driving" advertisements as suggested by Rep Koopman,electronic barrier signs at key locations and flash warning messages. This includes signs warning of slow driving that impedes traffic flow. None of these ideas will solve the long term problem brought about by too many drivers in a hurry to ski, to get to work, to get home or to be a tourist....all on a winding two lane road. This is a massive problem and there is only one worthwhile time and money-saving...yes, it will save money...solution. Get a study of where to put passing lanes and I'll serve on the committee...my son drives back and forth to Bozeman 3 to 4 days a week...what do you think his chances are of having an accident? You know and so do I. Respectfully submitted, Nonie Kern (Arline), Big Sky, MT	As stated on page 2-5 of the EA, passing lanes were originally proposed as the third phase of this project. Based on public concern that installing passing lanes might result in increase speeds in the corridor, MDT has removed passing lanes from consideration in this project.

Comment 30	Response
Doug & JoDean Bing *50645 Gallatin Road* *Gallatin Gateway, MT 59730* January 25, 2006 MDT Environmental Services Attention: Jean Riley 2701 Prospect Avenue P.O. Box 201001 Helena, MT 59620-1001 Dear Jean, Near mile marker 50 in the Gallatin Canyon there is a 45 mile an hour curve that is shaded and therefore icy. Having observed this curve for the last 30 years it must be one of your top report accident spots. The additional danger there is the access immediately to the north of the said curve of 10-12 residences. I recommend widening and adding a turn lane at this location. Sincerely, Doug Bing	See response to comment 10.

Comment 31



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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Bob Donner and
C-19 Firelight Meadows | 134 State Rd 23
Big Sky, MT | Briggsville, WI
59716 | 53920

Comments:

The Gallatin canyon + river should be protected for their beauty and their economic value resulting from tourism. US 191 through the canyon can never be a fast transportation corridor without ruining the canyon and the river for their present valuable uses. I fear the costly engineering project presented at the 10 Jan 2006 public meeting will be just another step in the degradation of the canyon.

The only part of the project which makes sense to me is the installation of a turn lane and a traffic sensing stop light at the MT 64 junction. The other turn lanes proposed are not likely to be used enough to justify their cost. And the suggestion that motorists be required to use turnouts is counter-productive because most of the turnouts are small without enough distance for deceleration and acceleration. The present turnouts are best suited for fishermen and other recreational users.

Solutions to the safety problem are generally political rather than engineering. Many good solutions were suggested by citizens at the hearing. Some of them follow:

1) Lower the speed limit in part of the canyon. A 50 mph limit between about milepost 50 and milepost 60 would increase travel time by only 2 minutes and be much safer. Police presence during peak travel times would help to enforce the limit.
2) Provide parking lots for car-pooling. Good locations would probably be near 4 corners and near Gallatin Gateway.
3) Encourage bus service between Bozeman + Big Sky for employees and skiers.
4) Encourage affordable housing for employees in the Big Sky area so they would not need to waste time and money commuting.
5) Discourage development in the canyon. Do not allow new driveway access.

Thank you for your consideration.

Sincerely,
Robert M. Donner

31a. 31b. 31c. 31d. 31e. 31f.

Response

31a. See response to comment 5a.

The turn lanes proposed as part of this project are at high accident locations and are anticipated to improve safety in the corridor.

Regarding turnouts; see response to comment 9b.

31b. See response to comment 4b, page 68.

31c. This is beyond the scope of this project.

31d. See response to comment 8d.

31e. See response to comment 8d. This also applies to affordable housing issues.

31f. MDT does not have the authority to either discourage or encourage development of properties. Land use planning is the responsibility and function of local governments. MDT's goal is to provide a safe and efficient highway system that balances the needs of the traveling public with the needs of the adjacent landowners. MDT manages accesses in order to maintain the flow of the traffic, enhances public safety, preserve the public's investment in the highway, and reduce future maintenance costs and the same time tries to be consistent with and support local land use planning.

Comment 32	Response

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Please indicate your name, address and affiliation (if any) below. Thank you for your interest and comments on this project. Feel free to use the back and/or additional sheets of paper if necessary.

Name and address: Bonnie Wolff
14C Firelight Meadows
BIG SKY, MT

Comments:

I am very concerned about the safety issues on Hwy 191 between Bozeman & Big Sky. I have been driving this road for six years now. I believe the structural suggestions are only a minor part of what needs to happen for safety. Speed and amount of traffic on this road are the key issues to be addressed. I believe that there needs to be: lower speed limits, presence of enforcement personnel, surveillance by video with ticketing. The volume of traffic can be addressed by encouraging car pools (bus available) and low transportation available for employees' weekend shifts. These suggestions would be easier to accomplish and less costly to tax payers.

32a.
32b.
32c.
32d.

32a. Regarding speed limit, see response to comment 4b, page 68

32b. Regarding enforcement, see response to comment 4b, page 68.

32c. Regarding surveillance, see response to comment 4b, page 68.

32d. Regarding reducing traffic volume, see response to comment 8d.

Comment 33	Response
From: "Chris Bunting" <bunts1970@earthlink.net> **To:** <mdteiscommentsgallatin@mt.gov> **Date:** 1/26/2006 4:23:34 PM **Subject:** Comment on Gallatin Canyon EA To Whom it May Concern, Thank you for the opportunity to comment on Montana Department of Transportation's proposed plan for Gallatin Canyon and for taking measures to make the road safer. I highly encourage you to reduce the speed limit where appropriate and to take measures to protect wildlife along this critical wildlife area. As you know, many large animals (elk, deer, bear, and moose) are killed while crossing the road and in turn many people are injured and even killed. In order to protect wildlife and motorists, please widen the bridges over Swan Creek and the West Fork of the Gallatin River. I also encourage you to take additional steps to improve the ability of wildlife to safely cross Highway 191, including constructing wildlife trails beneath the expanded bridges. Once again thank you for the opportunity to comment. Sincerely, Chris Chris Bunting 3070 Sawmill Rd. Bozeman, MT 59715	See responses to comment 4, page 67.

Comment 34	Response

From: "Julie York" <juliesyork@hotmail.com>
To: <mdteiscommentsgallatin@mt.gov>
Date: 1/27/2006 12:11:29 PM
Subject: Comments on Gallatin Canyon EA

CC: <dps@deainc.com>, <llhu@deainc.com>

January 27, 2006

Julie York
43 Jardine Road
Gardiner, Montana 59030

Re: Comments on the Slope Flattening/Widening—Gallatin Canyon Environmental Assessment

34a. Recommendation for Proposed Project
Evaluate reducing existing speed limits and enforcement of these reductions in areas where large mammals (particularly federally listed species) are known to occur in high numbers and/or are known to cross Highway 191. This will aid in reducing the number of incidences of injury and mortality to humans and wildlife.

The below comments concern the lack of analysis (for direct, indirect and cumulative impacts) and incorrect statements regarding impacts of speed to wildlife (including threatened and endangered species) in the EA (Chapter 3). There are no citations supporting these assumptions in the EA, although ample literature exists to evaluate these effects, particularly for large mammals. In addition, the EA does not discuss that Highway 191 inside and outside of Yellowstone National Park is a significant source of human-caused mortality to the threatened gray wolf because of the existing 55 m.p.h. speed limits.

34b. Misleading Assumption in EA:
Speed limit would remain the same.
The EA does not differentiate between posted and actual travel speeds. See below for effects discussion on this subject. In addition, it is not clear in the EA what the existing speed limit is; however, it is assumed to be 55 m.p.h.

34c. False Assumption in EA:
The wider road width in the proposed improvement areas may decrease the potential for wildlife fatalities in these areas because the driver has more space to maneuver around wildlife that may be crossing the road. There fore, the proposed project is not anticipated to increased wildlife fatalities, and may decrease fatalities.
Wider road widths do not improve visibility of wildlife and, along with road surface improvements which will occur as part of the proposed project, increase the risk of vehicle-strike injury/mortality to humans and wildlife. See below discussion.

34a. See response to comment 4b, page 68.

34b. See response to comment 27.

The posted speed limit is 60 mph with lower speed advisories at curves. MDT will be evaluating the speeds in this corridor separately from this project.

34c. That statement does not say that visibility of wildlife would be improved. It says that maneuverability would be improved, which is a benefit of wider shoulders.

(continued on next page)

Comment 34 (cont.)	Response

Comment 34 (cont.)	Response
Inadequate Analysis of Cumulative Effects: **34d.** The cumulative effects discussion does not incorporate effects from the increased traffic volumes stated in the EA. NEPA cumulative effects include all past, present, and future actions. The increases in traffic volumes that will occur on Highway 191, independent of the proposed project, should be assessed for impacts to humans and wildlife from vehicle strikes. Road-related effects to wildlife including speed **34e.** Approximately 20% of the land area of the U.S. is estimated to be affected ecologically by roads, with some effects extending outward for more than 100 meters (Forman 2000). Road-related effects are considered to be the leading direct human cause of vertebrate mortality in the United States, with 1 million vertebrates estimated to be killed each day (Forman and Alexander 1998). Although there have been relatively few studies that assess road impacts at the population level, some studies of rare animals, animals that have long life spans and low reproductive rates (several carnivores and reptiles), and amphibians, due to breeding requirements that require movements between upland areas and wetlands from appear to be at highest risk at the population level. **34f.** Risk of large mammal mortality from collisions (as well as severe human injuries) are most likely to occur at speeds of 45 m.p.h. or greater (Lavsund and Sandegren 1991, Groot Bruinderink and Hazebroek 1996, Gunther et al. 1998, Joyce and Mahoney 2001). An increase in actual vehicle speed as a result of improved road surfaces and straighter roads has been documented for Yellowstone National Park (Gunther et al. 1998) and in other areas of the U.S. and Europe (Groot Bruinderink and Hazeroek 1996). Actual (not posted) speeds over 40 m.p.h. is the single most important factor in contributing to wildlife-vehicle strikes in Yellowstone National Park (Gunther et al. 1998). Deer-crossing warning signs are effective if motorists reduce their speed; however signs are likely to become ignored over time (Romin and Bissonette 1996). **34g.** A positive relationship exists between straightness of roads, speed limit, driver in-line visibility along the road and the number of wildlife collisions (Bashore et al. 1985), due to the fact that drivers can see further down the road and usually increase their speed, therefore reducing the time available for breaking. Increased speeds require increased stopping distance for cars and trucks on dry roads. Winter road conditions can require four times the stopping distance as dry, "non-winter" roads. **34h.** Wildlife-vehicle strikes are positive correlated with daily and seasonal behavior and are spatially clustered (Clevenger et al. 2001, Joyce and Mahoney 2001). Most collisions occur at the peak of ungulate movements (early morning, evening, and at night) (Peak and Bellis 1969, Leedy 1975, Putnam 1997, Joyce and Mahoney 2001). Carnivores have large spatial requirements and require frequent crossings of roads through their home ranges and for dispersal. Population density one of the primary factors of wildlife-collision mortality (Gunther et al. 1998, Finder et al., 1999, Joyce and Mahoney 2001). **34i.** Driver visibility of wildlife at night is limited primarily by the peripheral extent of the vehicle headlights. Increased road lighting at night has not been demonstrated to reduce wildlife-vehicle collisions in several ungulate studies or reduce human injuries from collisions with large mammals (Reed and Woodard 1981). Humans appear unable to distinguish similarly colored objects at night and glare from oncoming headlights temporarily blind drivers. Humans have difficulty estimating distances to moose on or near the highway if the animal is in silhouette (Sweed Johyansoon and Rumar cited in Reed and Woodard 1981) and nighttime fatigue contributes to inability of driver to distinguish animals (Joyce and Mahoney 2001). Human injuries from moose collisions are proportionate to the number of moose-vehicle collisions, not to daylight or street light status.	**34d.** We agree with your comment that increases in traffic flow will occur on Highway 191 independent of the proposed safety project. These traffic increases were accounted for in the traffic projections as presented in Section 3.2.2. As stated previously, these increases in traffic are not an impact of the proposed safety project. The proposed safety project itself would not cause the traffic to increase. Section 3.6.1 and 3.6.2 discuss past, present and future actions for cumulative effects. See section 3.6.3 (pg 3-72) for discussion on traffic related to wildlife. "Traffic volume is expected to increase with future development. With increases in traffic, the potential for animal-vehicle collision occurrences can increase." **34e.** Thank you for your comment. Since the road already exists, the increase in impacts from this safety project would be minimal as discussed in the EA. **34f.** The proposed safety improvements would not be expected to increase driving speeds above what they are today, because these improvements would not substantially straighten the road. The posted speed limits would not increase and MDT will be evaluating speed in the corridor as discussed in comment response 4b. **34g.** Thank you for your comment. No straightening of roadway or increase to the posted speed limit is proposed in this project. **34h.** Thank you for your comment. **34i.** Lighting was not proposed as part of this project or as mitigation.

(continued on next page)

Comment 34 (cont.)	Response
34j. Clearing of roadside vegetation has not been shown to reduce the likelihood of vehicle collisions with large mammals along roads (Feldhammer et al. 1986, Kaji 1996), although it has been demonstrated to result in a 16% decline in moose-train collisions along railroads (Jaren et al. 1991). Clearing of roadside vegetation can increase forbs, grasses and exotic vegetation, and therefore can attract grizzly bears and ungulates to roadsides (Lavsund and Sandegren 1991). This increases the likelihood of vehicle strikes along roadsides and/or with the animals as they cross roads for travel and/or to obtain roadside vegetation on the opposite side. Most wildlife species were killed significantly more often in non-forested cover types than in forested types (Gunther et al. 1998). Screening next to high quality bear habitat makes bears less visible to visitors and reduces bear-jams (Gunther and Biel 2000). The number of deer killed per month on I-80 in Pennsylvania was strongly correlated with numbers of deer grazing along the right-of-way (Bellis and Graves 1971).	**34j.** Thank you for your comment.
34k. Depending on the width of roads and associated higher speed noise, vegetation clearing of roadside habitat can lead to avoidance to cross roads by increasing the impermeability of the road. Avoidance of crossing road may be a more significant impact at the population level than road mortality (Harris 1984, Noss and Cooperrider 1994) because it serves as a barrier to movement and may lead to genetically isolated populations.	**34k.** Thank you for your comment. This project does not propose to add travel lanes and the improvements that are proposed would only occur at specific locations, not throughout the corridor. Therefore the width of the road is not likely to become more of a barrier than it is now.
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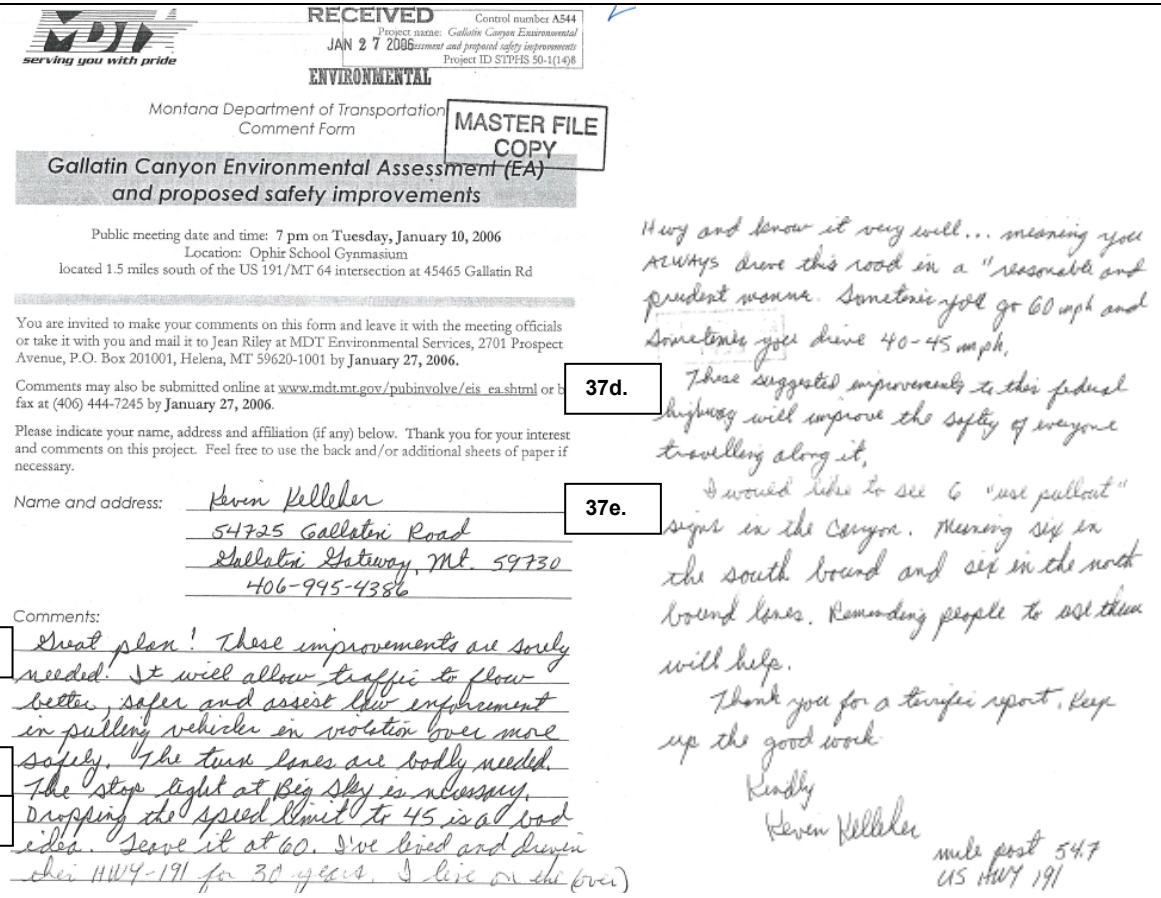
Comment 35	Response
From: <www@mdt.mt.gov> **To:** "MDT Comments - Project" <mdtcommentproject@mt.gov> **Date:** 1/27/2006 11:18:27 AM **Subject:** Comment on a Project Submitted A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Comment on a Project Submitted: 01/27/2006 11:18:27 Project Commenting On: Capital Improvement on US191 Name: Pride Moline Address Line 1: PO Box 161336 City: Big Sky State/Province: MT Postal Code: 59716 Email Address: Pride@goveia-llc.biz Phone Number: 406-995-2091 Fax Number: 406-993-9558 Comment or Question: I would like to show my support for the improvements planned along US Highway 191. I am a long time member of the Big Sky community and feel that the efforts that you are making to improve the conditions along 191 are a great start in the right direction. I know that people feel that the speed limit should be lowered and although I do not agree nor disagree with that arguement, I do not believe that a lower speed limit will have as much of an impact as your proposed changed. I feel that your proposed changes will offer a much needed margin of error for drivers, therefore limiting the number of accidents and fatalities. I hope when receiving arguements against this project, that you will keep in mind some people do not understand where the money is coming from and others just do not want to see any delay in the drive time between West Yellowstone/Big Sky and Bozeman. I am not in favor of huge delays either, but I believe that we are going to have to suffer through that in order to make 191 safer for everyone traveling it. What is a couple of hours when it could save your life! Thank you for your time.	Thank you for your comment.

Comment 36	Response
A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Comment on a Project Submitted: 01/27/2006 18:18:52 Project Commenting On: Capital Improvement Project - US 191 Email Address: bigskygirl9@yahoo.com Comment or Question: I wanted to voice my support for the Capital Improvement Project for US Hwy 191, based upon the EIS that was reviewed at the community meeting in Big Sky. I feel widening the roads, increasing turnouts and adding lefthand turn lanes would improve the safety of our canyon. Thank you for the effort you have put forth, we need more of it. Kate Ketschek Big Sky Chamber of Commerce board member	Thank you for your comment.

Comment 37	Response
	**37a.** Thank you for your comment. **37b.** Regarding stop light, see response to comment 5a. **37c.** Regarding speed limit, see response to comment 27. **37d.** Thank you for your comment. **37e.** Regarding pullout signs, see response to comment 9b.

Comment 38	Response
From: <www@mdt.mt.gov> **To:** "MDT Comments - Project" <mdtcommentproject@mt.gov> **Date:** 1/31/2006 10:04:26 AM **Subject:** Comment on a Project Submitted A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Comment on a Project Submitted: 01/31/2006 10:04:26 Project Commenting On: Hwy. 191 Gallatin Canyon Feb. 1st meeting Name: Jennifer Hogan Email Address: Mtwildflw@aol.com Phone Number: 4069953321 Comment or Question: Hello, I am unable to attend the meeting at Ophir School tomorrow evening, but would like to submit my comment in regards to improving safety on Highway 191 through the Gallatin Canyon between Bozeman & Big Sky. Having been a resident here for 10 years - I have driven the canyon thousands of times and have definetly seen it get worse. I have written letters to the governers in the past regarding Semi's which have terrorized many people - but the other biggest problem that I have noticed as have many others that I know, is auto's (mostly but not only Semi's) crossing the CENTER Line - mostly on curves but have had it happen to me even on straightaways. I believe that putting something like Rumble STrips down the center line may help keep people on their side of the road, or at least make them more aware of how they are driving. I also believe at this point in time, the increase in the number of cars has escalated out of control but I don't think this number will continue to grow too much. Sooner or later, the construction will slow down tremendously in Big Sky which is a huge portion of the traffic. I strongly believe that spending money to widen and/or straighten the highway would be a huge waste of resources and a more common sense approach such as center line rumble strips (and continual re-painting of lines) would make an impact, as well as lowering the speed limit only because I believe it would limit Semi travel because if the road isn't such a short cut to them anymore...maybe so many wont use it. THank You!	See response to comment 6a. See response to comment 18.

Comment 39	Response
From: "Demont, Lorelle" <ldemont@mt.gov> **To:** "Ebert, Jeff" <jebert@mt.gov>, "Gammon, Ross" <rgammon@mt.gov> **Date:** 2/10/2006 10:54:35 AM **Subject:** FW: Ask MDT A Question Submitted Hi Jeff and Ross, Would one of you be kind enough to provide me with some information to respond to this inquiry please? thanks, Lorelle -----Original Message----- From: www@mdt.mt.gov [mailto:www@mdt.mt.gov] Sent: Friday, February 10, 2006 10:13 AM To: MDT Comments - Ask MDT Subject: Ask MDT A Question Submitted A question, comment or request has been submitted via the "Contact Us" web page. Action Item: Ask MDT A Question Submitted: 02/10/2006 10:13:16 Name: Zane Yenny Address Line 1: 3880 Equestrian Lane City: Bozeman State/Province: MT Postal Code: 59718 Email Address: zaneyenny@hotmail.com Phone Number: (406) 624-0113 Comment or Question: Why is nothing being done about the animals being hit by vehicles south of the Conoco at the Big Sky turnoff on 191? There are elk and moose being killed daily and it's just a matter of time before someone gets killed. The speed limit should be lowered because it's a winter refuge area and animal crossing signs should be put up every quarter mile. What is the problem?	See responses to comment 4, page 67.

The following comments and questions were taken from the January 10th Public Hearing transcript. Jeff Ebert opened the floor to the public for their questions and comments.

No.	*Name*	*Affiliation*	*Date*	*Form*	*Comment*	*Response*
40	Jerry Fishel	Individual	01/10/06	Public Hearing	I live here in Big Sky. I have a couple of suggestions. One would be to put reflectors on the centerline of the highway. I've seen this done in Florida and other places. It defines the lanes and it will define the left-turn lane. These reflectors will be helpful for people staying in their lanes. The second suggestion is: In the park they have a system where they measure where the animals cross the road, and we've all seen that. Would it be possible to set up a timing system on these large tractor trailers such that we can measure the time that they go through the canyon? In other words, they would carry some kind of a radio transmitter chronograph indicating what time they went in and when they came out, and if it turns out that the average speed through the canyon is excessive, identify them and give them the proper reprimand or whatever fines might be appropriate.	See response to comment 25 regarding reflectors. See response to comment 4d, page 69. See response to comment 4b, page 68.
41	F. Craig Barber	Individual	01/10/06	Public Hearing	I come up and down about 60 times during the winter for teaching skiing and things like that. I live in South Cottonwood Canyon. I'm amazed that we have a bridge at Lava Lake, which is around milepost 60, a curved bridge that is very narrow and the freeze thaw is much more tricky with a bridge. The same thing at Swan Creek - that bridge has a curve in it. Two or three years ago there was black ice on that slight curve and it made the car spin, and then there was about five cars below that also spun. So I'm hoping that if you redo the Swan Creek Bridge, you will at least make it straight. I don't think that is technically impossible and probably very smart and if Lava Lake isn't in the scheme now, it should be fixed in the future because that is just like a funnel. Just this past week I saw three extra-wide commercial trucks with huge dump trucks on the back of them with no blinking light car in front. One of those could not squeeze through that bridge if someone is coming the other way. So you've got some serious hazards there. Thank you.	The new Swan Creek Bridge would have a curve that meets MDT design standards. The Lava Lake bridge was not identified as a high accident location and therefore is not in the proposed safety improvement project.
42	Roger Cantwell	Individual	01/10/06	Public Hearing	I've been up here in the canyon for about 20 years and I take care of all the white crosses throughout the canyon here. I have a suggestion – I know the white crosses are doing a lot of good but I think instead of the white crosses maybe we should put six-foot skull and crossbones painted on the blacktop either in white pain or florescent orange. Nobody has mentioned mile marker 39 called dead man's curve. I think something could be done about that. There are six white crosses right there. Thank you.	Thank you for your comment. The "S" curve at MP 39 was improved in 1986 during a slope flattening and guardrail project. This curve will be reevaluated in 2006 to examine if it is feasible to further improve this section.
43	Jerry Wortman	Individual	01/10/06	Public Hearing	I just have quick question – has this project been fully funded?	See response in the public hearing transcript, page A-10.

No.	Name	Affiliation	Date	Form	Comment	Response
44	Linda Allen	Individual	01/10/06	Public Hearing	My husband and I live four miles south of the mouth of the canyon, which is where the last four people died. We live here at Big Sky as well. We've been driving the canyon quite frequently daily for the last ten years. I'm an advocate of lowering the speed limit in the canyon to 45 mph. I think a number of these projects, which are proposed for safety reasons, disappear if people aren't going too fast. It is not just too fast for winter conditions, it's worse in the summer. So if you haven't given a thought to lowering the speed limit, I think you should. It is the only thing that is simple, obvious, immediate, practically free, and ensures that drivers will have better control of their vehicles.	See response to comment 4b, page 68.
45	Ian MacConnackie	Individual	01/10/06	Public Hearing	I'm a new resident of the canyon, about seven miles north. The Gabion walls that are the caged rocks, are they going to be set down into the river to expand the shoulder that you are putting the turning lanes in at Red Cliff and Swan Creek? Are they going to be put into the river? I didn't catch the woman's name over there, but this is in reference to the obvious. The speed limit in the canyon – why is that listed as one of the last proposals in this project? You mentioned that you are going to address that later in phase three. Wouldn't that be the primary goal of a safe stretch of road? When that speed limit was increased from 55 mph to 60 mph, where are the statistics backing up the increase in accidents? These are all real basic issues for a lot of people who live around here. I, for one, believe that a reduction in the speed limit wouldn't necessarily mitigate these proposals you have. Turning lanes are great idea, but ultimately speed kills, and if anybody has lost anyone to a traffic related accident, they can attest to that. I just want to know why it is at the end of the agenda.	See response in the public hearing transcript page A-11. Additional information: As stated on pg 3-36 of the EA, the purpose of installing the slope stabilization structures is to accommodate the proposed improvements without encroaching into adjacent water bodies. A speed study is not proposed as part of this project, but will be performed as part of a separate study. See response to comment 4b (page 68) and the second part of Jeff Ebert's presentation in the Public Hearing Transcript.
46	Ken Morton	Individual	01/10/06	Public Hearing	I've been a full-time resident for 28 years here. Will any private property be taken for this project?	See response in the public hearing transcript, Page A-11. Additional information: As discussed on pages 3-18 and 3-19 of the EA, it is anticipated that right-of-way would be required from 15 private parcels and two public parcels. Based on the preliminary design, the total amount of right-of-way that would be required from these 17 parcels is 1.3 acres.

No.	Name	Affiliation	Date	Form	Comment	Response
47	Dorothea Jude	Individual	01/10/06	Public Hearing	I would like to know when the traffic light would be installed. Would we have to wait until 2008? How does it affect the speed limit leading up to a traffic light?	See response in the public hearing transcript, page A-2. Additional information: see response to comment 5a.
48	Tom Butler	Individual	01/10/06	Public Hearing	I'm with the Highway Patrol out of Belgrade. I don't want to start the speed limit tonight, as Jeff said, but one thing I would like you to keep in mind when you are discussing this tonight and it goes directly towards the environmental issues they are talking about. We can hang whatever we'd like on a post for a speed limit in this canyon, but we have to be able to enforce it. That involves widening the highway out and giving us some room to do something. Which goes right towards the project, right towards the environmental issues, and all that is part of this. At another point we will talk about the speed limit issues, but while you are commenting on this, everybody needs to understand that all the problems you folks have driving up and down the canyon, we also have the same thing driving up and down the canyon, and if we don't have room to come up there and enforce the speed limit that is in place today then we won't have room to enforce a lower one. That is going to take some widening. So keep that in mind when you are talking to the department officials after this meeting or with your questions now. There is going to have to be some widening happen in this canyon for law enforcement to come up and do some good to help solve some of the problems.	Thank you for your comment.
49	Wayne Lee	Individual	01/10/06	Public Hearing	I'm a resident of Big Sky. Relative to the signal, it took me about three hours to find a signal that would comply with federal standards. There is a company in Ohio, and it would cost $20,000. We keep saying we need studies, hearings, meetings, and reports on – a little bit of action and a little less study would go a long ways. The other thing is looking at this project where you have your widening and your cut bank laybacks. I believe a rumble strip in the sidelines would do far more good than what you are proposing. I've worked on highway projects for a good portion of my life, and you're two foot widening of the existing shoulder is a sliver fill which is the most expensive thing you can do in the form of construction. So your bang for your buck, from what I'm seeing on this project, is extremely low. To me if you would have done better studies going into it, you could have prioritized where you were spending your money and come up with a whole lot better result for the dollars spent.	Comment noted. MDT will evaluate rumble strips in the north half of the canyon later this year. The State's transportation system needs always exceed the available resources and nominated projects are carefully selected based on how well they address a specific transportation need and contribute to overall system performance. For more information on how safety projects are selected you can reference the Performance Planning Process at: http://www.mdt.mt.gov/publications/docs/brochures/tranplanp3.pdf

No.	Name	Affiliation	Date	Form	Comment	Response
50	John Leeper	Individual	01/10/06	Public Hearing	The black ice in the canyon is an enormous problem. Although we have thermometers on our cars, it often doesn't tell us if we are approaching an area that is shaded. You may think you don't have black ice, but you do when you hit it. I'm wondering if it would be possible to get some solar signs that actually take the temperature in some portions of this canyon so we'd know when we are coming up whether we've got a black ice situation or not. I know there are some portions of the canyon where you can spin out and a lot of people have, and it is amazing that we haven't had more fatalities on some portions of the canyon. So I could almost personally pick out some of those areas where you do spin out, but if you could get a solar sign in there that gave the temperature so that when people are coming around, they've got a good idea whether it is frozen or not.	See response to comment 9d.
51	David O'Connor	Individual	01/10/06	Public Hearing	Jeff, I know we are trying to keep this to the EA, but as you addressed some of the commitments that the Dept. Director and the Highway Patrol made, when we had the meeting here in December it seemed like there was a loud and clear desire from people to not only do the things you've mentioned, but also to mark any turnouts that we have to advise slow traffic to use them. I'm curious as to why that didn't make the list?	See response in the public hearing transcript, page A-13. Additional information: see response to comment 9b.
52	Bob Donner	Individual	01/10/06	Public Hearing	The question of law enforcement on speed limits came up awhile back. When you were talking about the signs that show your speed, it seems to me that it might be fairly simple if somebody is going over the speed limit to put on a video and take their picture, and the law enforcement could take place somewhere else without having to widen the road.	See response to comment 4b, page 68.
53	Amy Davis	Individual	01/10/06	Public Hearing	I live in Gallatin Gateway. I have one question about the relationship between this study and the study that is about to be done on the Gallatin River to determine if it is an outstanding water resource. Has there been any consideration of the affect that study and a possible determination that the Gallatin is an outstanding water resource might have on your judgment of the significance and severity of the environmental impacts caused by the construction and the changes made in the roadway? Can someone address that? What is the projected time for completion of the outstanding water resource study? So that would be before this actual construction would occur?	See response in the public hearing transcript, page A-13. Additional information: see response to comment 3d. See response in the public hearing transcript, page A-14. Additional information: Initial indications were 2007, but MDEQ is in the early stages of the EIS process and it is not clear when that process will be complete. See response in the public hearing transcript, page A-14.

No.	*Name*	*Affiliation*	*Date*	*Form*	*Comment*	*Response*
	Amy Davis (continued)				Well, I'm just wondering if there were a FONSI that occurred before the determination on the outstanding water resource?	See response in the public hearing transcript, page A-14. Additional information: see response to comment 3d.
					I would like to make one other quick comment. I don't think it is proper to separate the issue of lowering speed limits and improving enforcement of speed limits and other traffic rules like don't cross a double yellow line. I don't think it is proper to separate consideration of the impacts of those kinds of changes from consideration of the safety impacts of making the changes, which are being proposed tonight. You have a chart that says "summary of impacts" and then there are two columns. One is the no build alternative and one is the preferred alternative. But we don't have a lower speed limit increased enforcement alternative to consider. I think it ought to be considered at the same time.	See response in the public hearing transcript, page A-14. Additional information: see response to comment 4b, page 68.
54	Susan Hellier	Individual	01/10/06	Public Hearing	Can you tell me where we can get copies of the preliminary designs for a specific area?	See response in the public hearing transcript, page A-15.
55	Rick Allen	Individual	01/10/06	Public Hearing	I think I've gotten the message that we are not discussing speed limits and enforcement tonight, so rather than challenge you as most of the folks in the rooms have done and would like to do, I'd like to clarify a few things for the record. I think it would be useful to know why speed limit and enforcement was not made a part of the planning. Whether that is a policy of MDT, a state law, someone's opinion, and specifically whether Evans and Associates that performed this study was told not to factor those matters into the equation or whether they simply operated on the assumption that the speed limit and enforcement would not be changed?	See response in the public hearing transcript, page A-15. Additional information: See response to comment 4b, page 68.
56	Ben Bulis	Individual	01/10/06	Public Hearing	When you go ahead and acquire right-of-way, do you purchase the property or do you just take it over? Acquiring the land, do you put that in the preliminary cost estimate for the project?	See response in the public hearing transcript, page A-15. Additional information: As discussed on pg 3-19 of the EA, right-of-way acquisition would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Uniform Relocations Act Amendments of 1987. See response in the public hearing transcript, page A-16.

No.	*Name*	*Affiliation*	*Date*	*Form*	*Comment*	*Response*
57	Anne Marie Mistretta	Individual	01/10/06	Public Hearing	I live here in Big Sky. I have a question about whether or not you plan to install emergency telephone systems along the road? If not how will timely information, urgent information, get transmitted to law enforcement so they can change those variable message signs to say something other than "winter conditions drive safely, thank you"? I'll give you an example, December 14th driving at 1:30 up canyon to Bozeman past mile marker 51 – I do realize that there are agencies that do not agree with feeding the Big Horn Sheep salt, however, MDT for all intents and purposes is feeding salt to the Big Horn Sheep, and there were about five of them standing and feeding right smack in the center of the road. Three hours later at 4:30 I was driving south, those same sheep were standing there eating and the light of course was getting very bad. By that point people were taking the law into their own hands, parking their cars and running south in the canyon up to a quarter and a half mile to flag trucks to slow down. If we can't get information out of that canyon to people who can change those signs such as we needed the night the high school bus sat for almost one hour because we could not get information out of that canyon to families. We haven't done what we need to do to improve this road.	See response in the public hearing transcript, page A-16. Additional information: see response to comment 25 regarding variable message signs.
58	Ruth Lott	Individual	01/10/06	Public Hearing	I'm going to follow right on the same idea. In this 85th percentile, they are not factoring in black ice and sheep in the middle of the road and that seems to me to be environmental. So there is no way speed is not part of the environmental process here and it just has to go in.	See responses to comment 55.
59	Anne Marie Mistretta	Individual	01/10/06	Public Hearing	Laura said you are working with the FWP, and I realize this is infrastructure, but could someone be working with FWP to be sure that they understand the sheep are on the road eating the salt that they won't feed to them up mountain from the road?	See response in the public hearing transcript, page A-17.
60	Kevin Germain	Individual	01/10/06	Public Hearing	I have a question for either David Evans and Associates or Commissioner Vincent. This gets back to the question earlier about the outstanding resource water. I know there is a lot going on with the Gallatin right now with the TMDL study and the Outstanding Resource Water Study. Is there anything with the outstanding water resource designation that would preclude or take away some tools from MDT for widening the road, with the Gabion baskets as well as any sort of bridge realignment that we should be aware of?	See response in the public hearing transcript, page A-17. Additional information: see response to comment 3d.

No.	*Name*	*Affiliation*	*Date*	*Form*	*Comment*	*Response*
61	Kevin Kelleher	Individual	01/10/06	Public Hearing	I live at milepost 54 in the Karst area. Specifically on the bridges I have three questions. The measurement of the old bridge at the West Fork is 54 feet, the new proposed bridge is 88 feet in length, the width of the old bridge is 30 feet, the new width is 76.8 feet. Would it be prudent or possible to get that stop signal in before construction begins on the bridge? Which direction would that bridge be widened – towards the river, towards the main Gallatin at the confluence, or will it be widened to the west of the West Fork? The EA says it will keep the same center line, so that would lead me to believe the distances would be split on each side.	See response in the public hearing transcript, page A-17.
					The most important thing is the right hand turn lane into Big Sky. Right now it is a dangerous situation if you are driving south and you have a lot of traffic turning into Big Sky. I watch locals every day pull out in front because I'm going further south towards Bucks T-4.	As discussed in Chapter 2 of the EA, a right-turn lane is proposed in US 191 at MT 64.
					The other thing I didn't notice in the EA and maybe it will be in the EIS, but there is nothing about noise abatement. Specifically noise ordinances against the use of Jake brakes, non-muffler vehicles including motorcycles, at all in the EA. It is become a particular problem not only on US 191 but also on Montana 64 with the empty gravel trucks coming down the mountain and using Jake brakes all the way down. Will noise abatement be addressed in the EIS?	The response in the public hearing transcript incorrectly states that more abatement would be addressed in the EIS. An EIS is not being developed for this project.
					But wouldn't that be addressed in an EIS? I know it needs a local ordinance but because there is no local government here, we can't pass an ordinance against the use of Jake brakes and other loud vehicles. I know the State of Montana, through the Highway Patrol, can enforce the muffler-less vehicles and situation like this, but it is definitely an environmental impact in the canyon and should be looked at as the amount of traffic increases especially heavy construction traffic.	
					The third issue regarding the "use slow vehicle" signs, Highway 12 along the Lolo River in Idaho is far more dangerous than this road. They have a 50 mph speed limit and every single turnout is posted that slow moving traffic must use vehicle turnouts when delaying four or more vehicles. I lived here and worked on this project for a long time, we go back 25 years asking for those signs to alert tourists delaying traffic to use these pullouts. I have to disagree with you as far as the safety issue of them coming back into traffic. When I go home to my home at night I'll use the new Portal Creek pullout if I've got a lot of traffic behind me as a matter of courtesy so that all the traffic behind me doesn't have to stop when I turn left into my home at milepost 54.7. So I would strongly suggest that you put the slow vehicle turnout signs as a very high priority in this project.	See response to comment 9b.

No.	Name	Affiliation	Date	Form	Comment	Response
62	Phil Holbrook	Individual	01/10/06	Public Hearing	I've lived a mile south of Karst for 28 years. I help Roger with the white crosses and many of those are the result of single vehicle accidents because of the design of the road not because people speeding or people avoiding someone else. It is because the road design fools the traffic and by the time they realize they need to slow down it is too late from some of them. We have many crosses and we've had many people go off the road in these places. I think your engineers should address every one of those crosses. Take a look and try and find some background on what happened in those accidents.	When the Department analysis accident trends they look at accidents causes including fatalities. The Department will continue to monitor these sections of US 191 for potential Safety Engineering Improvement Programs in the future.
63	Trilly Calendar	Individual	01/10/06	Public Hearing	Just following that up, with the history of the road and the number of the accidents that have taken place there, it would seem from an engineering standpoint you guys could analyze where the most dangerous areas are or have been historically. I imagine that is essentially why you have what you have here. Has there been any consideration for any sort of dividers dividing traffic in those areas where you've had those types of problems which would potentially eliminate any sort of head-on and maybe some of the more severe types of traffic accidents that have taken place? I have a clarification question as well. I want to be sure I understood that the study you have proposed for the signal at 64 and 191 is really separate from all of this and could happen well in advance of 2007-08 construction project?	See response in the public hearing transcript, page A-19. Additional information: see response to comment 9a. See response in the public hearing transcript, page A-19.
64	Kevin Barton	Individual	01/10/06	Public Hearing	Big Sky resident. Is there any review of 64 as far as separated turn lanes at the intersection of US 191?	See response in the public hearing transcript, page A-19.
65	Greg Fields	Individual	01/10/06	Public Hearing	I live at the south end of the project at mile marker 32 at the Elk Horn Ranch. I want to know how come you think Red Cliff instead of mile maker 39, which is the dead man's curve, and you've got all the traffic at the Corral and Rainbow Ranch and people going in and out of there and I don't think that is on there? I have a laundry list of questions for all these different things. You say you are looking at little road strips in the middle of the road, how does that affect the snow plows when they come through and it builds up on that? You are talking about a concrete barrier and snow builds up on that. All that is going to be more hazardous than just a straight road that is open so they can come through and clean it up. They do a pretty good job right now. You add that and it is going to mess it up worse. To go back to using the turnouts – I drive big trucks, horse trailers, stock trucks. You want me to go … I can barely get that thing going 45-50 mph. You want me to slow down, turn off, and start up again? I'd be going 15-20 mph for another mile or two, and you want me to turn off again? It will take me two hours to get out of the canyon. That is just crazy.	See response in the public hearing transcript. See response to comment 42. See response to comment 9a regarding lane barriers. See response to comment 9b regarding turnouts.

No.	Name	Affiliation	Date	Form	Comment	Response
	Greg Fields (cont.)				I see this all the way down to Buck T-4 (referring to graphic), I don't see a lot of white crosses through here. This is a lot of rear-end traffic with people slowing down and more inconvenience stuff. You know people get upset over people dying like at dead man's curve and the other day over at Spanish Fork. That is a really flat straight area that goes into two sharp curves. That is where people get in trouble. They are going 60-70mph, I don't care what the speed limit is, and they hit those curves and you can't do that curve that fast in dry, wet, or any condition. I think personally all the emphasis should be on those harsh curves not these straight a ways and all that crap. Harsh curves are where people are dying not these rear-end jobs out here.	See response in the public hearing transcript, page A-20. See response to comment 42. Additional information: In determining where specific safety improvements were needed, MDT compiled crash data from 1984 to 2000.
66	Ben Bulis	Individual	01/10/06	Public Hearing	I had a question at our last meeting and you called it sand gravel. Is there any way to make the size of the chips smaller that you use in the canyon since they don't get blown off because of the wind in the canyon?	See response in the public hearing transcript, page A-20.
67	Greg Fields	Individual	01/10/06	Public Hearing	When you say that you go through a filter process for your rocks, I see you piles built up and over the summer you have all the weeds growing on top of it. Then in the winter you kick it out onto the road where it gets spread on to the side, then you've got weeds on the side. I know that personally because I'm picking those things up all the time and it is a bad deal because then it spreads from the road into the public land onto my private property, which my horses and cows aren't going to eat. It just keeps spreading all the way across. It's an environmental issue.	See response in the public hearing transcript, page A-21.
68	Lynne Malpeli	Individual	01/10/06	Public Hearing	I have a question for MDT, what is the ruling on commercial through the National Park? Who would I call?	See response in the public hearing transcript, page A-21.

No.	*Name*	*Affiliation*	*Date*	*Form*	*Comment*	*Response*
69	Denise Wade	Individual	01/10/06	Public Hearing	From Big Sky. I have a couple of comments – one is related to the sheep that we talked briefly about. There are three locations where they cross the road. (One is by Deer Creek. One is milepost 54, another is milepost 51 to 52, somewhere in there, and another is milepost 48 or a little bit further south. Tonight when I drive home I'll tell you.) They cross US191 pretty regularly and I was wondering if it would be possible to put signage or flashing lights or something like that similar to what is happening further south with the elk as you go through Yellowstone. They are on those blind corners at mile marker 51 and Durham Meadows and right in there pretty regularly in the wintertime going for the salt on the roadway. So I would like to have that as part of the public record that I wouldn't mind seeing some flashing lights or something warning people who don't drive it regularly that they are frequently there. My second comment is kind of related to speed limit and I know we are not supposed to talk about that but I want it entered into the public record that US 191 is pretty much a closed system and if somebody is speeding and highway patrol or sheriff is following them, they aren't going anywhere. You follow them until you pull them over. I don't think anyone is going to pull over and stop in the middle of the road. There are plenty of places to pull over. There are many pullouts. I realize that not every single spot has a shoulder where you can pull off but I feel like I would like to see the Highway Patrol not use that as an excuse to not catch speeders or not have any direct influence towards people who are speeding.	See response in the public hearing transcript, page A-21. Additional information: All three of those locations fall within the "high wildlife accident occurrence area" identified by MFWP and documented in the EA. As discussed in Section 3.4.6 of the EA, MDT will collaborate with MFWP regarding the need for bighorn sheep crossing signs. Thank you for your comment.

(Note: Comment 4 was relocated to this page due to its large attachment.)

Comment 4	Response
RECEIVED JAN 3 0 2006 ENVIRONMENTAL American Wildlands Science-based conservation for the Northern Rockies." Jean A. Riley, P.E. Environmental Services Bureau Chief Montana Department of Transportation 2701 Prospect Ave., PO Box 201001 Helena, Montana 59620-1001 MASTER FILE COPY Dear Ms. Riley, American Wildlands appreciates the opportunity to comment on the Gallatin Canyon: Slope Flattening/Widening Environmental Assessment. We see this as an opportunity to increase motorist safety on the Gallatin Canyon portion of Highway 191 by decreasing the likelihood of accidents involving wildlife. While this project mostly focuses on alterations to the road for the benefit of human safety, American Wildlands believes this is also an opportunity to help protect some of the wildlife that far too often gets killed on this stretch of road. Taking advantage of this opportunity will also increase motorist safety, the MDT's primary goal in this project. Improving the Canyon's abundant wildlife's ability to cross the road without being struck by a vehicle is an important component of improved motorist safety – one that will be increasingly important as the area continues to grow. The EA estimates that by 2026, traffic in the Gallatin Canyon north of Big Sky will double to 10,230 vehicles per day. American Wildlands believes that MDT should start taking steps now to prevent vehicle-wildlife accidents, as the risk to people and our wildlife will only increase with time. If the MDT invests a little more time and money now into improving the ability of wildlife to safely cross Highway 191, the agency can help reduce the increasing tragic toll this dangerous highway is taking on people, our property and our wildlife in the future. We would like to see more projects with a Purpose and Need of reducing animal-vehicle collisions. *The Proposed Project*: MDT plans to install turn lanes at dangerous intersections such as Big Sky, widen and flatten the slope at these intersections and replace and elongate bridges spanning Swan Creek and the West Fork of the Gallatin River.	(See next page)

(continued on next page)

Comment 4 (cont.)	Response
4a. *Specific Wildlife Safety Measures Proposed by American Wildlands*: We propose that MDT amend its existing plans and improve wildlife passage beneath the elongated bridges by adding streamside wildlife trails. Such trails are easier for wildlife to negotiate than the boulders and rip-rap that currently flank these streams, making it easier for animals to use these "underpasses" rather than crossing the road. While some argue that there is little assurance wildlife will use these paths, it's a technique American Wildlands thinks it is well worth trying. We would be happy to participate in the design process of the bridges and trails. Furthermore, we would like to see research on the use of these structures. MDT has already illustrated its national leadership in the field of reducing animal-vehicle accidents through recent projects on Bozeman Pass and Highway 93 in the Bitterroot Valley, as well as the upcoming Evaro to Polson Project through the Flathead Valley. We want to encourage MDT to use this opportunity to continue its leadership in making highways more wildlife-friendly by testing this underpass-trail concept on Highway 191. *General Wildlife Safety Measures Proposed by American Wildlands*: These measures from a new and growing field of research are used in the United States, Canada and Europe to reduce animal-vehicle collisions while maintaining habitat connectivity for wildlife. Some of them could be incorporated in the MDT's Highway 191 project: • Lower speed limits enforced by increased patrols and/or photographic technology that automatically issues tickets by mail; • Overpass/underpass structures – various sizes with fencing to guide animals to these crossing structures; • Break-the-beam technology – when a deer or elk breaks an invisible light beam on the side of a road, lights flash to warn drivers that an animal is near or on the road; • Wildlife-warning signs; • Deer reflectors and whistles. **4b.** *Lower speed limits*: At the public hearing on January 10, MDT stated that speed limits were not part of this project. However, the U.S. 287/26 – Moran Junction to 12 Miles West of Dubois, Wyoming project lowered the speed limit from 65 to 55 (see attached page from the Record of Decision). Speed limits relate directly to safety and are an important part of the safety discussion. However, American Wildlands would prefer that the speed limit be reduced separately, so that it can be done in 2006, rather than linked to the date of the project. Driving slower will save the lives of people and wildlife. We also support enforcing the speed limit and installing electronic barrier signs at key locations, which display driver speed and flash warning messages. **4c.** *Overpass/underpass structures*: The attached paper by Ruediger, Claar and Gore, identifies highways that go through key linkage areas in the US Northern Rockies and identifies U.S. 191 as one of those highways (see Figures 2 and 5). In addition, the paper states that crossing structures should be implemented at traffic volumes presently on Highway 191.	**4a.** The structures will maintain small animal use. Existing wildlife paths beneath bridge structures will be maintained. The elevation of the underside of the new bridge beams is comparable to the existing beams now in place and use by larger animals would not have to change. 1st bullet: See response to comment 4b. 2nd bullet: See response to comment 4c. 3rd bullet: See response to comment 4d. 4th bullet: MDT is coordinating with MFWP regarding signage to warn drivers about bighorn sheep. 5th bullet: Deer reflectors and whistles are not proven technologies for reducing animal / vehicle collisions. **4b.** MDT will be evaluating speed in the corridor separately from this project. See the second part of Jeff Ebert's presentation in the Public Hearing Transcript regarding the speed study. Since the Montana Legislature, per Section 61-8-303, MCA, sets the speed limit, changing the speed limit is not generally something MDT can implement on its own. However, per Section 61-8-309, MCA, the Transportation Commission may "determine upon the basis of an engineering and traffic investigation that a speed limit set by 61-8-303 is greater or less than is reasonable or safe under the conditions found to exist….on a segment of highway less than 50 miles in length…" MDT will be undertaking the necessary investigations to consider a change in the statutory speed limit. With respect to enforcement, the rules of the road in Montana are enforced by the Montana Highway Patrol and they fall under the jurisdiction of the Department of Justice. For your convenience, their website is: http://www.doj.mt.gov/enforcement/highwaypatrol.asp

(continued on next page)

Comment 4 (cont.)	Response
At approximately 2,000-3,000 vehicles per day, highways usually have adverse impacts on wildlife due to habitat fragmentation and mortality (Dr. Tony Clevenger and Paul Paquet, personal communication). Highway departments and land management agencies should implement wildlife crossing structures at these traffic volumes. Traffic volume over 4,000 vehicles per day is most assuredly creating significant habitat fragmentation and wildlife mortality. (Ruediger, B., J. Claar and J. Gore. Restoration of Carnivore Habitat Connectivity in the Northern Rocky Mountains. In Evink, G.L., P. Garrett and David Zeigler, eds. 1999. Proceedings of the Third International Conference on Wildlife Ecology and Transportation. FL-ER-73-99. Florida Department of Transportation, Tallahassee, Florida. 330pp, p.7). **4d.** *Break-the-beam technology*: This is currently being tested on Highway 191 in Yellowstone Park. This promising technology could be implemented in other locations on the highway once it has been tested and improved. Specific to Highway 191, this discussion will become increasingly important as the Big Sky area continues to grow. Roadkill hot spots along Highway 191 north of Yellowstone National Park, based on American Wildlands' analysis, are: • From the Big Sky turn-off north two miles to mile post 50; • A two-mile section that includes Red Cliff Campground; and • A mile north and south of Taylor's Fork. These hot spots represented in the color map included with our comments and are based on a draft report, A Preliminary Assessment of Wildlife-Transportation Issues in the Great Yellowstone Ecosystem, by Amanda Hardy of Western Transportation Institute and Steve Willer (formerly American Wildlands) and Elizabeth Roberts of American Wildlands. I've included a copy of the relevant sections of the report to Highway 191 (p. 8 and 9). Please note the difference between our hot spot locations and the "High Wildlife Accident Occurrence Area" in the EA. For example, the two-mile section that includes Red Cliff Campground is not highlighted in the EA. Please consider these above three areas for solutions to wildlife collisions now and in future projects. Thank you for proposing to elongate the bridges over Swan Creek and the West Fork of the Gallatin River for wildlife movement underneath. We encourage you to take additional steps to improve the ability of wildlife to safely cross Highway 191, including constructing wildlife trails beneath the expanded bridges and other preventative measures mentioned above. Human safety and wildlife conservation are two important concerns for Americans, and highway projects like this one provide a unique opportunity to address both of these concerns at once. Thank you for the opportunity to comment. Sincerely, Joshua W. Burnim	MDT has passed along information regarding public concern over speed limit enforcement in the corridor to the Highway Patrol and has met with the Director, Col. Paul Grimstad on the issue. However, MDT has no jurisdiction over how the Highway Patrol chooses to address issues related to the enforcement of traffic laws. Two radar-activated Speed Monitoring signs are currently in use in the Gallatin Canyon. One at the entrance to the canyon in the southbound lane and the other near Big Sky in the northbound lane. These units display a message stating "Your Speed Is xxxxx" message to cars traveling at or below the speed limit and a message stating "Slow Down Now" to the drivers of vehicles traveling above the prescribed speed limit. Additional speed studies of the Gallatin Canyon are anticipated as a follow up to the speed monitoring signing. **4c.** Due to the physical constraints in the Canyon, and the limited scope and budget of this safety project involving spot improvements; Overpass/Underpass wildlife structures are not feasible with this project. **4d.** Break the Beam technology is still in the research and testing phase and has not yet been established as a reliable method for reducing animal / vehicle collisions. Thank you for this information. The "hot spot" you have identified near Big Sky appears to fall within the high wildlife accident occurrence area identified by MFWP and documented in the EA. We will look into the other two areas that are identified the Western Transportation Institute document.

(continued on next page)

Attachment to Comment 4

RECORD OF DECISION

FHWA-WY-EIS-02-01-F

U.S. 287/26 – Milepost 3.01 to 40.71
Moran Junction to 12 Miles West of Dubois, Wyoming
Teton and Fremont Counties

February 2004

U.S. Department of Transportation
Federal Highway Administration

A. DECISION

A.1 This Record of Decision documents decisions made concerning highway improvements presented in the FEIS.

A.2 The Proposed Action is the reconstruction of 37.7 miles of U.S. 287/26 extending east from near Moran Junction to the east boundary of Shoshone National Forest west of Dubois. The improvements will increase roadway safety, accommodate projected traffic, correct roadway design deficiencies, and enhance and improve the visitor experience. Overall, the project will be designed and constructed to protect the natural and human environment and meet the goals of the Bridger-Teton and Shoshone National Forest *Land and Resource Management Plans* and the USFS *Wyoming Centennial Scenic Byway Plan*.

A.3 The *Selected Alternative*, Alternative E 'Team Consensus', will improve the existing highway essentially on the same alignment, limiting major alignment shifts to those locations necessary to improve safety and to avoid or minimize impacts to natural environmental resources. Important minor horizontal alignment and gradeline modifications will be incorporated to improve roadway design features, and generally improve roadway safety and stability. Due to the substantial variation in types of roadway users and terrain, the posted speed limit will be reduced to 55 mph, with 45 mph curve advisories, as needed. Combined with passing lanes, this alternative will adequately accommodate projected traffic volumes, promote more consistent travel speeds, and enhance traffic safety.

A.4 Parking areas and pullouts will be designed to enhance the visitor experience by providing recreational opportunities and scenic improvements. Modifications to existing recreational facilities will include added turn lanes, access improvements, intersection enhancements, consolidated parking, and resurfacing of pullouts. Up to five undercrossings may be provided to accommodate snowmobiles and eliminate existing, dangerous at-grade crossings. 8-foot shoulders (6-foot in passing lanes) will be provided for pavement edge support, collision avoidance maneuvers, vehicle emergency stops, and bicycle travel along this transcontinental bicycle route.

B. ALTERNATIVES CONSIDERED

B.1 *General*

B.1.1 Seven alternatives were initially developed to address the project purpose and need objectives, including the No-Action Alternative. These alternatives were documented in Chapter 2 of the FEIS.

Restoration of Carnivore Habitat Connectivity In the Northern Rocky Mountains

Bill Ruediger; Endangered Species Program Leader
USDA Forest Service, Northern Region, Missoula, MT

James J. Claar; Carnivore Program Leader
USDA Forest Service, Northern Region, Missoula, MT

James F. Gore; National Grizzly Bear Habitat Coordinator
USDA Forest Service, Northern Region, Missoula, MT

Abstract: *The Northern Rocky Mountains are the best location in the lower 48 states to maintain functioning communities of large and mid-sized carnivores. Highways and railroads have created significant habitat fragmentation, habitat loss, mortality and other threats to these species. The authors reviewed existing highways and railroads, as well as land ownership patterns. "Key linkage areas" were evaluated across the Northern Rocky Mountains of Montana, Idaho and Wyoming. Sixty four highways were considered important as key linkage areas. Twenty of these were considered "high priority" due to the cumulative impacts of having four lanes, high traffic volume, high potential for upgrading, paralleling railroads or critical private lands. Highway planners are encouraged to move towards analyzing "geographic areas" when assessing impacts of highways on wide-ranging carnivores.*

Introduction. The Northern Rocky Mountains were a place; where high mountains rose to the skies, covered with lush green forests and dotted with meadows, lakes and spectacular postcard vistas. Wide fertile valleys wove their way between ranges, laced with natural grasslands, shrublands and cottonwood bottoms as far as the eye could see. Carnivores, such as the grizzly bear (*Ursus arctos)*, wolf *(Canis lupis)*, wolverine *(Gulo gulo)*, lynx *(Lynx canadensis)* and several other species roamed the valleys and mountains - moving back and forth - among some of the earth's most abundant and striking wildlife resources. And, as Norman Maclean so elegantly stated "Eventually all things come together and a river runs through it." Well, this may have been how it was, but those days are behind us and what "runs through it" now is not only a river, but also a major four lane highway, a railroad and strip development.

The Northern Rocky Mountains: The Last Best Place for Large and Mid-Sized Carnivores. The best opportunity for management of a functional carnivore community in North America is the Northern Rocky Mountains of the United States and the Southern Rocky Mountains of Canada. It may be the last place in the lower 48 states where this opportunity exists. The area extends from the Wyoming Range in Wyoming north to Jasper National Park in Canada (Paquet 1995). One of the major issues in conservation of carnivores in this area is the expanding highway and railroad system. Another is strip development as humans expand out from towns and cities. The authors have evaluated these two factors and are presenting an approach that would allow carnivore habitat and population connectivity in the Idaho, Montana and Wyoming portions of the Northern Rocky Mountains. Admittedly, this is not a fully developed concept, but a beginning point from which state departments of transportation (DOT's), Federal Highway Administration, land management agencies, wildlife agencies and conservation groups can begin a serious dialog. The problems of highways and human sprawl on wildlife and fish resources are increasing and will persistent. The solutions to these impacts are best solved sooner than later.

Many of the large carnivores are already listed under the Endangered Species Act (ESA). Grizzly bear and wolves are currently protected under ESA. Lynx have been proposed for listing – and their status is being reviewed by the USDI Fish and Wildlife Service. Wolverine and fisher (*Martes pennanti*) are of concern and have been petitioned for listing in the past. Federal and state agencies have a legal responsibility to manage native wildlife species, particularly those listed or reduced in numbers or range such that listing may be required.

The Progression of Forest Roads To Highways. As the highway system (and railroad) grows in size, traffic volume and total miles, its impacts on wildlife will grow. The impacts on low density carnivores like grizzly bears, wolves, lynx, wolverine and fisher will be more severe than most other wildlife species. This is due to their large home ranges, relatively low fecundity, and low natural population density. The adverse effects of highways to rare carnivores and other wildlife include serious habitat fragmentation, mortality, direct loss of habitat, displacement from noise and human activity and secondary loss of habitat due to human sprawl (Ruediger 1996 and 1998).

When traffic volume increases, there is an evolution of highways from gravel roads to paved two lane roads, and from two lane highways to more problematic four lane highways and "super highways" like the Interstate system. The eventual result of such a progression in the highway system on rare carnivores is the slow strangulation of viability due to population isolation, loss of habitat, mortality of individuals and a decline in potential population size. All of these factors are primary causative agents in the decline and extirpation of wildlife worldwide.

Critical points in development of highways occur when: 1. Gravel forest or back-country roads are paved (this is the beginning of "highway" impacts compared to forest road, backcountry or county roads). This results in higher speeds, higher traffic volumes and increased human developments. 2. Two lane highways are upgraded into four lanes. 3. Two lane highways are upgraded by widening the pavement surface, widening the cleared right of way, adding passing lanes and straightening curves. While often necessary for safety purposes, improved highways adversely affect carnivores and other wildlife species.

Railroads: A Deadly Additional Factor. While the authors' major considerations were the identification of highways and critical private lands in key linkage areas, a serious additional factor is railroads. Railroads provide similar dangers to carnivores as highways

such as habitat loss, habitat fragmentation and mortality sinks, plus several factors that are unique to only railroads (Woods & Munro 1996; Paquet and Callaghan 1996; Gibeau and Heuer 1996). For example, railroads often provide food sources that attract carnivores such as grain spills (grizzly bears) and carcasses of deer (*Odocoileus sp.*), elk (*Cervus elaphus*) and moose (*Alces alces*) that have been hit and are on, or near the railroad right-of-way. Railroads provide snow-free and/or level travel ways attractive to prey species (elk, deer and moose) and carnivores. Railroad bridges are occasionally used by wildlife to cross rivers, highways and valleys – sometimes with fatal results. Also, trains have no ability to maneuver to avoid animals on the tracks and can not stop quickly.

Railroads pose a significant threat to carnivores by themselves. However, in combination with highways they produce a double threat that can be catastrophic to wildlife – especially carnivores. The worst documented example in the Northern Rocky Mountains is the Trans-Canada Highway and Railroad combination. In this instance, a high speed, high traffic volume four lane highway is paralleled by a busy railroad. The result has been a severe impact on wolf mortality and serious habitat fragmentation to grizzly bears, wolves, lynx, and wolverine (Leeson 1996). In the United States, the effects of railroads paralleling major highways has been poorly studied.

Benefits of Restoring Habitat Connectivity. Providing habitat and population connectivity in the Northern Rocky Mountains has many potential benefits to carnivores and other wildlife. These include:

1. Increase the amount of habitat available to carnivores by allowing movement and dispersal within and between major mountain ranges in Idaho, Montana and Wyoming. This would maximize the amount of available habitat and distribution of carnivores.
2. Maximize the potential population size, resulting in higher resilience of carnivore populations due to demographic, stochastic and genetic factors.
3. Decreased mortality rates for all, or most, carnivores due to collisions with cars, trucks and trains.
4. Reduce the need for controversial translocation programs since carnivores could expand throughout the Northern Rocky Mountains through natural movement and population expansion.
5. Meet the intent of the Endangered Species Act and the National Forest Management Act by providing maximum habitat use, maximum potential population size and increased dispersal potential which results in populations that are more viable due to being "well distributed" across the landscape.
6. Minimize land management restrictions because larger, well distributed populations are less fragile than smaller, insular populations.

Key Linkage Areas – What are they? Key linkage areas are critical areas where carnivore habitat connectivity is diminished, eliminated or at risk over time. Usually, the factors placing connectivity at risk are highways and private lands. Special management emphasis, such as provisions for wildlife crossings (for highways) or acquisitions/easements (for private lands) are recommended to increase or maintain wildlife habitat connectivity.

Federal and State Lands As a Foundation For Carnivore Habitat Connectivity in the Northern Rocky Mountains. The foundation for the approach the authors took was the public land base – both federal and state. This minimized the reliance on private lands. However, where it was impossible to maintain habitat connectivity across public land, "key linkage areas" across private lands are identified. The solution to maintaining the key linkage areas revolves around future conservation easements, purchases or other agreements that result in providing habitat connectivity from one mountain range to the next.

Defining Problem Highways. The highway systems in Idaho, Montana and Wyoming were reviewed for potential impacts on carnivore habitat and population connectivity. These will be identified and addressed later in this paper. Also, a subset of "high priority" highways are proposed based on: 1. Existing four lane highways. 2. Two lane highways with a high potential for upgrading (to four lanes, or "Super Two Lanes"). 3. Two lane highways with high traffic volume. 4. Highways or forest roads with a high potential for improvements that could lead to more traffic and the associated problems. 5. Highways that have paralleling railroads. Other highways that can have a serious impact are the upgrading of gravel forest and backcountry roads into paved two lane highways. When located in carnivore habitat, these former low standard roads begin the processes of increasing traffic volumes and speed in carnivore habitat. Paving of forest roads increases the potential for permanent human occupancy of remote areas through encouragement of subdivisions, resorts and high-use recreation developments.

The increase in traffic volume in carnivore habitat create a challenge for carnivores (as well as for highway, wildlife management and land management agencies). An issue facing highway agencies is when should wildlife-crossing structures be implemented? This is a question without a precise answer. It is known that some highways are not barriers or significant mortality factors for carnivores. These highways generally have low traffic volume and long pauses between traffic pulses. They are also two lane roads, often with minimal clearing distances. At approximately 2,000-3,000 vehicles per day, highways usually have adverse impacts on wildlife due to habitat fragmentation and mortality (Dr. Tony Clevenger and Dr. Paul Paquet, personal communications). Highway departments and land management agencies should implement wildlife crossing structures at these traffic volumes. Traffic volume over 4,000 vehicles per day is most assuredly creating significant habitat fragmentation and wildlife mortality.

The effectiveness of highway crossing structures is a concern to all involved in looking for the solutions to the mortality and habitat fragmentation created by highways, railroads and other associated factors. The authors acknowledge there are problems to be addressed as to how and where wildlife crossings should be built. Other authors have addressed the effectiveness of wildlife crossing designs (Clevenger 1998; Gibeau and

Herrero 1998; Paquet and Callaghan 1996; Gilbert and Wooding 1996). As more research is completed on carnivores and other wildlife, the mysteries of how and where to build effective wildlife crossings will be solved.

Scale Matters When Assessing Highway Effects on Carnivores. In past papers, Ruediger (1996 and 1998) defined the effects highways have on carnivores. There are many solutions that can be applied to reduce the impacts, such as underpasses, overpasses, management of human activities and vegetation management. In this paper, the authors will suggest where the solutions should be applied over a broad geographic area. Management of carnivores must be applied at proper scales to be effective (Noss 1991: Paquet 1995). An appropriate geographic scale for assessing the impacts and solutions to highways and railroads the is the Northern Rocky Mountains of the US and the Southern Rocky Mountains of Canada (Servheen et al. 1998; Gibeau and Herrero 1998; Gibeau and Heuer, 1996; Paquet 1994, 1995 and 1996). While the specific solutions must be applied locally, analysis and management of the overall problem must be at higher scales.

Highway impacts must be addressed at the geographic scale by state DOT's and the Federal Highway Administration, as well as by total length of highway. Trying to address impacts by short highway segment, as is presently done, is not appropriate. It is impossible to understand the importance or context of a highway segment to carnivores without looking at higher scales. What is urgently needed is a more comprehensive planning process involving highway management agencies, land management agencies, wildlife management agencies and the public.

Assessing the Northern Rocky Mountains Carnivore Habitat Connectivity. The following is a state by state overview of the key linkage areas for the Northern Rocky Mountain geographical area.

Montana: Montana has a unique private land to public land ownership pattern that exacerbates maintenance of carnivore habitat connectivity. Montana has 29% federal land, 6% state land and 55% private land (Figure 1). While the public may have the perception that Montana is largely vast, open spaces of public land, Montana actually has one of the smallest percentages of public land of any rural western state. The ownership pattern is particularly problematic in western Montana, where mountain ranges are largely National Forest land, but the surrounding valley bottoms are mostly private lands. The private land is increasingly subject to subdivision, suburban sprawl and other uses incompatible to the long-term maintenance of wildlife habitat connectivity. Once the private lands are fully developed, western Montana will have only three large areas of carnivore refugia (Greater Yellowstone Area, Selway-Bitterroot Mountains and the Bob Marshall Wilderness-Glacier Park areas), with the remaining public land habitat between these areas existing as "island" mountain ranges surrounded by developed private land.

The challenge in Montana is to provide permeable highway segments and secure corridors across private land for carnivores and other wildlife. This will be necessary if the majority of public land is to remain useful as habitat. If we fail to provide access for wildlife across private lands and permeable highway segments in the "key linkage areas," severe habitat fragmentation will continue to occur. The Greater Yellowstone Area, Selway-Bitterroot and Bob Marshall-Glacier areas would be permanently isolated with a much lower potential for carnivore persistence. There is evidence that the isolation of these three areas already exists for many or most carnivores. Wolf recolonization in Montana occurred rapidly in the late 1980's and early 1990's from Canada to the Ninemile area north of Interstate 90. Southward movement of wolves appeared to be stopped by I-90. Grizzly bear have poor pioneering and dispersal abilities and no known natural movements have occurred between grizzly bear recovery areas, in spite of distances of only 10-120 miles separating these areas.

Figure 2 provides a map of the highway and private land "key linkage areas" in Montana. A written description of each key linkage area is provided in Table 1. Thirty five highway segments and 16 private land corridor areas were identified in Montana as "key linkage areas."

Idaho: The situation in Idaho is clearly different than Montana. Idaho has a much more favorable public land ownership pattern than Montana. A much higher percentage of Idaho is public land (63% federal, 5% state and 31% private). Plus, public lands are much more contiguous, particularly in the mountainous areas.

Nevertheless, Idaho also has significant key linkage areas of concern. In northern Idaho from Coeur d' Alene north, key linkage areas between the Selkirk Mountains, Cabinet Mountains and the Bitterroot Mountains are at risk and will require restoration. In western Idaho, linkage to the Wallowa and Blue Mountains in Oregon and Washington is at risk or absent. In eastern Idaho Interstate 15 provides a formidable barrier between the Greater Yellowstone Area and Bitterroot Mountains.

Figure 3 provides a map of the highway and private land "key linkage areas" in Idaho. A written description is provided in Table 2. Twenty one highway segments and 7 private land corridor areas were identified in Idaho as key linkage areas.

Wyoming: Within carnivore habitat in the Northern Rocky Mountains, Wyoming has the best land ownership pattern reviewed. The western two thirds of Wyoming are largely connected by an extensive network of National Forest, BLM and state land. Yellowstone National Park, in the extreme northwest corner of the state, is a world-renowned refugia for wolves, grizzly bears and other forest carnivores. Special concern must be given in and around Yellowstone and Grand Teton National Parks. Nine of Wyoming's ten highways of most concern lead visitors to these parks. With increasing visitor use, traffic volume increases and there is pressure to accommodate more and faster traffic by upgrading the access highways. The upgrading of highways will negatively effect carnivores and other wildlife by increasing habitat fragmentation and wildlife mortality. Wolves have been killed by vehicles in both Grand Teton and Yellowstone National Parks. The long-term effects of increasing traffic and potentially faster moving traffic should be addressed now. Reducing speed limits to decrease vehicle speed, as some people have proposed, has not been effective in decreasing Florida panther mortalities.

Land ownership in Wyoming is 48% Federal, 6% state and 43% private. The majority of private land in Wyoming is in the eastern one third of the state.

Figure 4 provides a map of the highway and private land "key linkage areas" in Wyoming. A written description is provided in Table 3. Nine highways were identified in Wyoming as "key linkage areas." No private land corridors were found.

Other Areas of Concern: A concern outside of the analysis of this paper is the relationship of the Wasatch and Uinta Mountain Ranges to the Northern Rocky Mountains. Geographically and biologically, Utah mountain ranges were almost certainly a part of the Northern Rocky Mountain ecosystem. The largest manmade structure currently preventing habitat connectivity is Interstate 80. No analysis was made of where key linkage areas may be along Interstate 80, or in Utah. A recent draft Lynx Conservation Assessment and Strategy (USDI Bureau of Land Management, et al. 1999) considers the Wasatch and Uinta Mountains as part of the Northern Rocky Mountain Geographic Area. Another area that may be important, but was not analyzed is the Bighorn Mountains in north central Wyoming and its relationship to the rest of the Northern Rocky Mountains.

Identifying High Priority Key Linkage Areas in the Northern Rocky Mountains. Using the definitions for "high priority" highways discussed previously, the authors reviewed the 64 key linkage areas identified in Montana, Idaho and Wyoming. Of the 64 key linkage areas identified, 20 (31%) qualified as "high priority" areas.

Of the 20 "high priority" key linkage areas, 7 (35%) were located on two Interstate highways (I-90 and I-15). Eleven (55%) have a railroad paralleling the highway. And eleven also have private lands, which are critical in maintaining key linkage areas. Nearly all have a high potential for upgrading that could increase the right-of-way distances, increase traffic lanes and increase vehicle speeds. Figure 4 provides a map of the high priority key linkage areas in the Northern Rocky Mountains. Table 4 summarizes the high priority key linkage areas for Montana, Idaho and Wyoming. It also identifies risk elements such as critical private land segments, railroads paralleling highways, existing four lane highways and areas where there is a high potential for upgrading.

Conclusion: Highway systems provide a formidable impact to wildlife – particularly rare, wide-ranging carnivores. They continue to expand, becoming more problematic and dangerous to wildlife each year. Forest roads are being paved and lanes added, straightened and widened. Only recently have the problems to wildlife created by highways been highlighted. The solutions at this time are in the future. And, the cost will be significant.

The current practice of assessing highway upgrades and construction by individual segments is inappropriate for large and mid-sized carnivores. Planning by segments makes identification of the highest priority wildlife areas impossible – and can lead to high investments into marginal return situations. There is no context to determine if a given highway segment is important. The appropriate scale for planning effects of highways and railroads is at the geographic level. In the case the authors reviewed, the appropriate geographic level is the Northern Rocky Mountains of Montana, Idaho and Wyoming. The authors developed this proposal with the support of their employer, the USDA Forest Service and with many hours of donated time. Land management, wildlife management and highway agencies should fund and coordinate a more intensive review of habitat fragmentation and key linkage zones. Highway agencies should increase the planning scale to at least an entire highway's length through the Northern Rocky Mountains – and other geographic areas where carnivores are of concern.

It is the author's hope that agencies and the public will take the efforts from this paper and improve upon them. The benefits to carnivores and other wildlife would be profound. A by-product of moving animals safely across highways (instead of over the road surface) would be a significant improvement in human traffic safety. Although not studied, much of the cost of providing safe wildlife crossings could be off-set by fewer vehicle collisions with wildlife, fewer human injuries, fewer human deaths and lower vehicle repair and insurance costs. Our highways in the 21st century can be much more ecologically sensitive. The restoration of carnivore habitat connectivity and reductions in wildlife mortality are issues that should be addressed and corrected.

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Table 1: Summary of Montana Key Linkage Areas						
Highway Segment	High Priority	4-lanes	High Traffic Volume	High Potential For Upgrade	Railroad Paralleling	Critical Private Lands
1. Yaak Hwy (Mt 508)				X		X
2. Hwy 2 – Troy to Libby	X		X	X	X	
3. Hwy 93 – Fortine to Olney			X	X	X	
4. Mt 486 – North Fork Road				X		
5. Hwy 2 – Columbia Falls to East Glacier	X		X	X	X	
6. Hwy 56 – Bull Lake to Hwy 200				X		X
7. Hwy 200 – Dixon to ID Border (3 sections)	X		X	X	X	X
8. Hwy 83 – Swan Lake to Clearwater Junction	X		X	X		X
9. Hwy 93 – Ravalli to Evaro Hill (2 section)	X	X	X	X	X	X
10. I-90 – ID Border to Alberton (2 sections)	X	X	X	X	X	X
11. I-90 – Rock Creek to Drummond	X	X	X	X	X	X
12. I-90 – Butte to Whitehall	X	X	X	X	X	X
13. I-90 – Bozeman Pass	X	X	X	X	X	X
14. Hwy 200 – Lincoln to Roger's Pass			X	X		
15. Hwy 12 – Elliston to McDonald Pass		X	X	X		
16. Hwy 12 – Lolo to ID Border	X		X	X		X
17. Hwy 1 – I-90 to Anaconda (2 sections)				X		X
18. I-15 – Butte to Boulder Exit		X	X			
19. Hwy 43 – Divide to Lost Trail Pass (2 sections)				X		
20. Pioneer Mountain Scenic Byway (Forest Service)				X		
21. Hwy 278 – Badger Pass to Big Hole Pass			X	X		X
22. I-15 – Monida Pass to Clark Canyon (2 sections)	X	X	X	X	X	X
23. Hwy 287 – Alder to Hwy 20 Jct (2 sections)			X	X		X
24. Hwy 191 – Big Sky to Hwy 287 Jct			X	X		
25. Hwy 20 – Hwy 287 Jct to ID Border			X	X		
26. Hwy 89 – Yankee Jim Canyon thru YNP			X	X		X
27. I-15 – Glen to Deerlodge Pass	X	X	X	X		X

Table 2: Summary of Idaho Key Linkage Areas

Highway Segment	High Priority	4-lanes	High Traffic Volume	High Potential For Upgrade	Railroad Paralleling	Critical Private Lands
1. Hwy 95 North (2 segments)	X	X	X	X	X	X
2. Hwy 2 – MT Border to Jct Hwy 95			X	X	X	X
3. Hwy 57 (Priest Lk Highway)			X	X		
4. I-90 MT Border to 4th of July Pass	X	X	X	X		X
5. St. Joe River Road				X		
6. Hwy 12 – MT Border to Kooskia	X		X	X		
7. Hwy 95 South (2 segments)	X	X	X	X	X	X
8. Hwy 93 MT Border to Challis (2 segments)			X	X		
9. Hwy 29 Bannock Pass				X		
10. Hwy 28 – Leadore to Atomic Energy Res.				X		
11. I-15 – MT Border to Spencer	X	X	X	X	X	X
12. Hwy 20 – MT Border to Ashton			X	X		
13. Hwy 93 – Jct Hwy 75 to Mackay Res.			X	X		
12. Hwy 75 – Jct Hwy 93 to Stanley			X	X		
13. Hwy 21 – Stanley to Arrow Rock Dam (2 seg.)			X	X		
14. Hwy 55 – Horseshoe Bend to Smith's Ferry			X	X	X	
15. Cascade to Warm Lake RD.				X		
16. Hwy 71 – Cambridge to OR Border				X		X
17. Moyie River Road – Moyie to East Gate				X	X	X

Table 3: Summary of Wyoming Key Linkage Areas						
Highway Segment	High Priority	4-lanes	High Traffic Volume	High Potential For Upgrade	Railroad Paralleling	Critical Private Lands
1. Hwy 212 – Beartooth Pass to Jct of Hwy 89	X		X	X		
2. Hwy 89 - MT Border to Jackson	X		X	X		
3. Hwy 20 – Madison to West Yellowstone			X	X		
4. Forest Road from Hwy 120 to Hwy 212				X		
5. Hwy 16 - Wapiti to Lake	X		X	X		
6. Hwy 26 – National Forest Boundary to Moran			X	X		
7. Hwy 187 – National Forest Boundary to Jct 89			X	X		
8. Hwy 89 – Hoback to ID Border (2 sections)			X	X		

Figure 1 - Percentages of Federal, Private and State Lands in Idaho, Wyoming and Montana

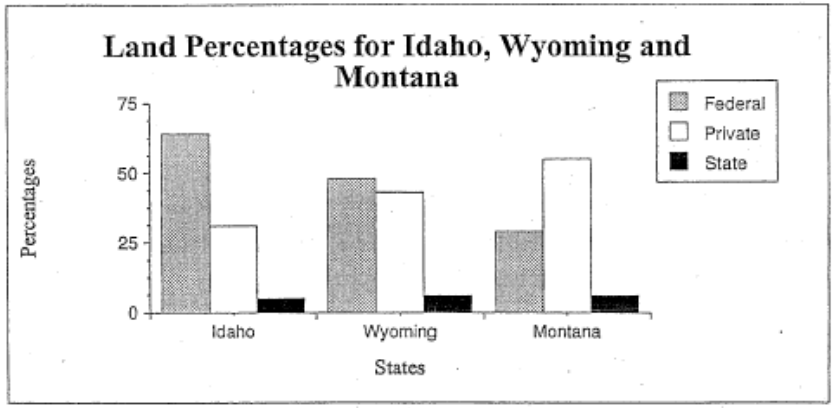


Figure 2 - Montana
Key Linkage Areas & High Priority HWY

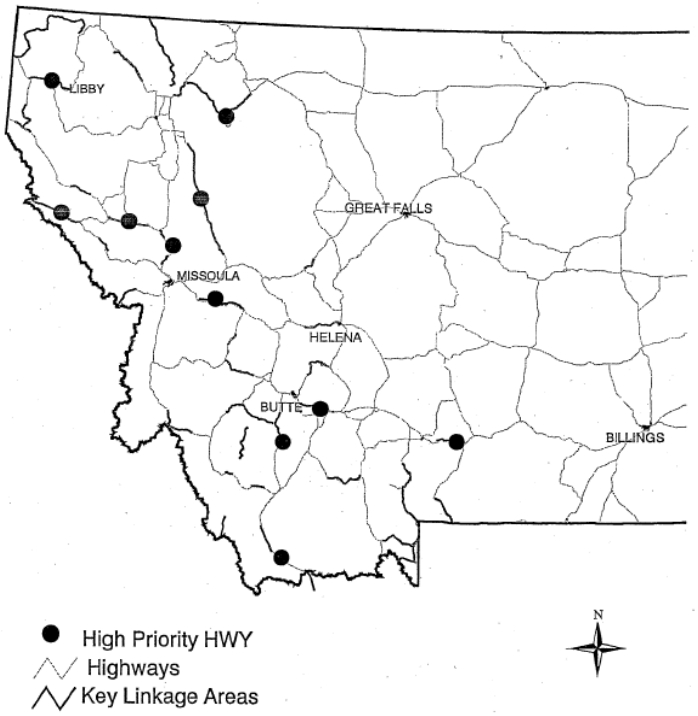


Figure 3 - Idaho

Key Linkage Areas & High Priority HWY

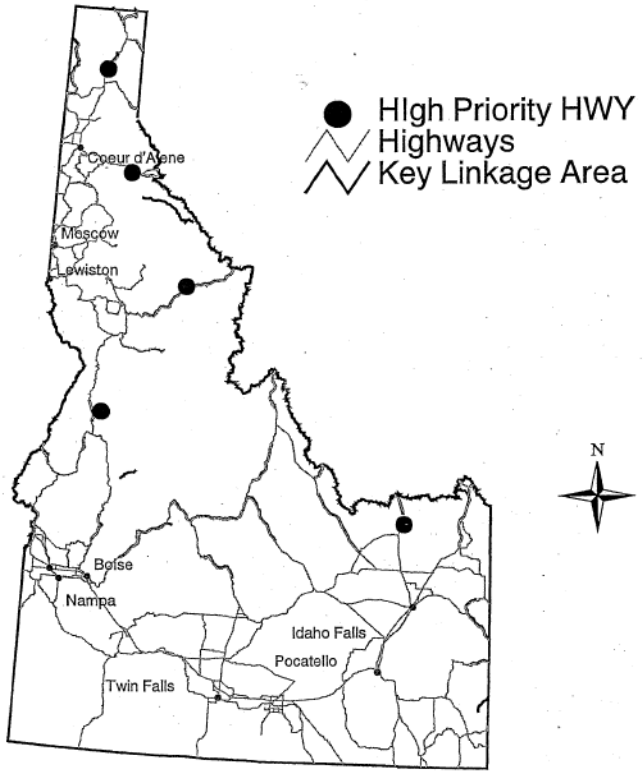


Figure 4 - Wyoming
Key Linkage Areas & High Priority HWY

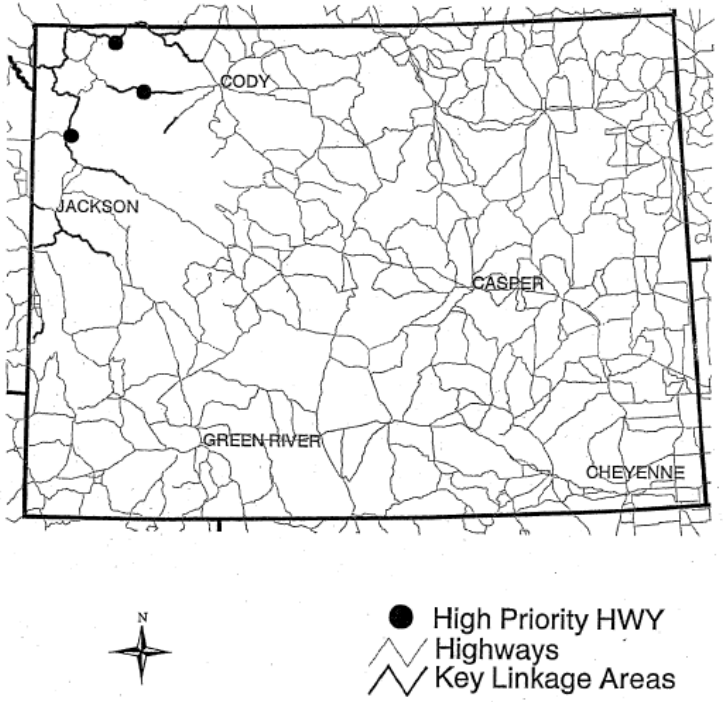
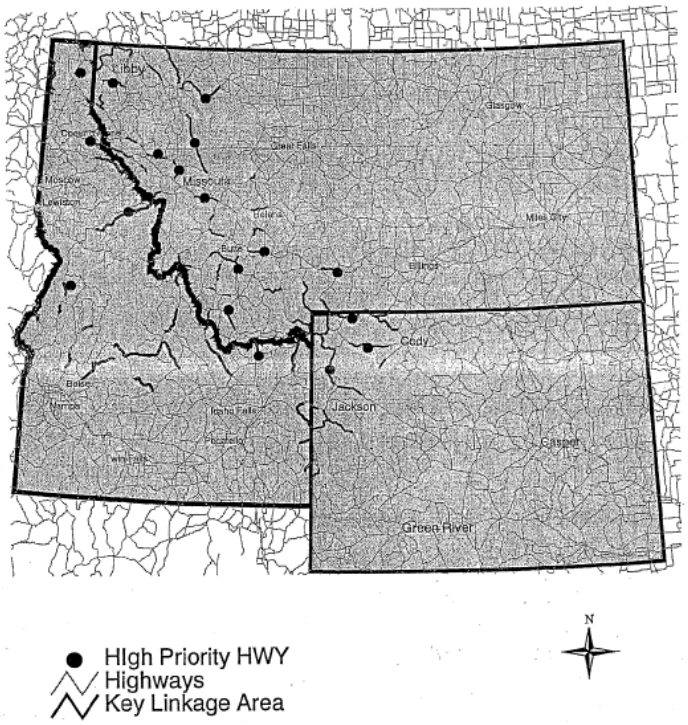
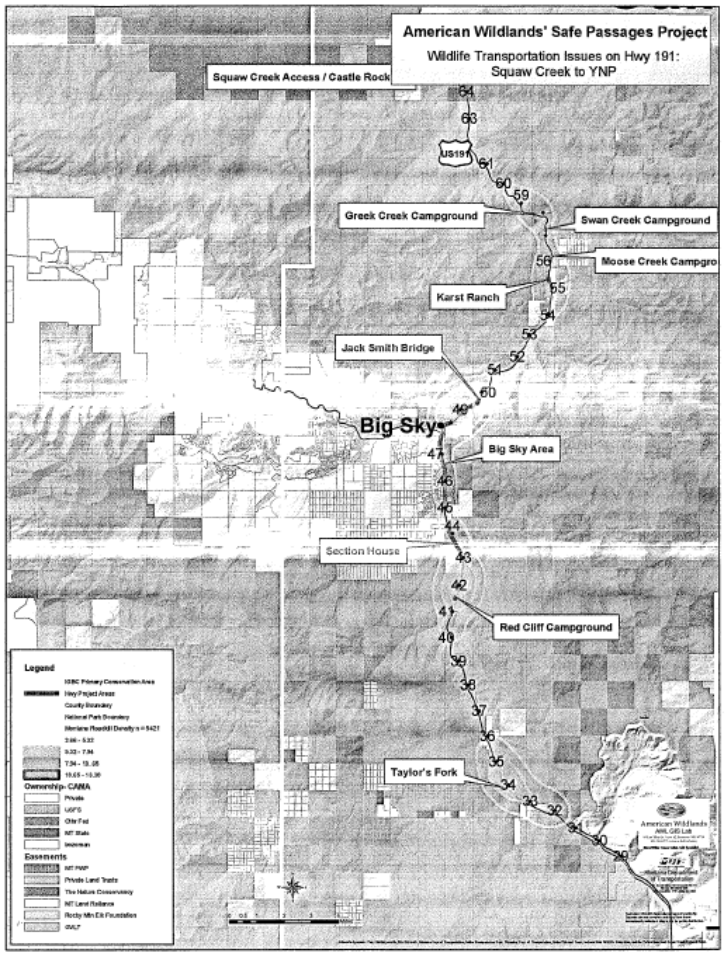


Figure 5
Montana, Idaho and Wyoming
Key Linkage Areas and Priority HWY





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A Preliminary Assessment of Wildlife-Transportation Issues in the Greater Yellowstone Ecosystem

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DISCLAIMER

The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the Greater Yellowstone Coalition, Montana State University, or any of the agencies contacted for information summarized in this report.

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To use animal-vehicle collision data obtained from the Montana Department of Transportation (MDT), the authors respectfully abide by MDT's requirement of adherence to confidentiality interests, as follows:

> "By opening this data [delivered in a sealed envelope] you acknowledge that you understand that this information may be confidential under provisions of 23 U.S.C. 409. You also accept the State's confidentiality interest. This includes responsibility for its confidentiality, including, but not limited to, protection from dissemination or release to parties known or unknown involved or contemplating litigation as well as its security in any electronic database in which it is incorporated.
>
> Section 409 states:
>
> Nothwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway highway crossings, pursuant to Sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data."

Montana Department of Transportation also provided this disclaimer with their 2004-2006 State Transportation Improvement Program (STIP):

> "While the projects and dates shown are official departmental objectives, it is important to bear in mind that this program is only tentative. Execution of this program is contingent on a number of factors, including federal and state funding availability, right-of-way acquisition, utility relocations, environmental review, surveying, and design. Complications with one or more of these factors may cause a given project to be rescheduled."

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1. INTRODUCTION

Transportation moves people and commerce, contributing to our quality of life. But roads can have negative impacts on wildlife and habitats (Forman 1998, Forman 2003, Jackson 2000). In the United States, approximately one million animal-vehicle collisions (AVCs) occur each year at an estimated cost of more than $1 billion in vehicle repairs alone (Conover et al. 1995). While roads occupy and directly impact only about 1% of land mass in the United States, it has been estimated that transportation infrastructure and traffic indirectly affects 15-20% of this landscape (Forman and Deblinger 1998). High traffic levels can create a barrier to animal movements across the landscape. Roads often bisect quality wildlife habitat into smaller patches of lower-quality habitat that may not provide the shelter, food, water, mates, and dispersal routes that wildlife need for long-term sustained wildlife population viability. These safety and ecological issues relative to transportation infrastructure are particularly concerning in areas that boast large areas of quality habitat that support healthy wildlife populations.

The Greater Yellowstone Ecosystem (GYE) is one of the last places in temperate North America with large tracts of relatively undisturbed lands that provide habitat for grizzly and black bears, wolves, cougars, wolverine, moose, elk, bison, deer, pronghorn antelope, bighorn sheep and many other northern Rocky Mountain wildlife species. Roads throughout the GYE cross through these quality habitats, resulting in costly AVCs, and potentially limiting animal movements across the landscape when and where traffic volumes are high. With increasing traffic volumes and developments that sprawl across the landscape, fragmentation of these habitats and AVCs will continue to increase. Proactive transportation planning and engineering approaches can help moderate these impacts and ultimately increase safety and the ecological integrity that makes the GYE a special region in the northern Rocky Mountains.

The Greater Yellowstone Coalition (GYC) is dedicated to "…protecting the lands, waters, and wildlife of the GYE, now and for future generations." In line with their mission, GYC recognizes the effects that transportation infrastructure can impose on habitat and wildlife. To better understand transportation-wildlife interactions in the GYE, GYC contracted the Western Transportation Institute (WTI) at Montana State University and American Wildlands (AWL) to assess where wildlife-transportation conflicts may be occurring and how concerned stakeholders can work with transportation agencies to reduce the impact of roads on wildlife and the habitats they rely on while increasing driver safety in terms of reducing AVCs.

This report synthesizes spatial data on reported AVCs occurrences, areas of ecological concern, and the State Transportation Improvement Program (STIP) projects in the GYE. We use a Geographic Information System (GIS) to identify stretches of roads with wildlife-transportation conflicts based on relative densities of reported AVCs. In addition, we isolate road segments that overlap modeled core and corridor habitat and priority "megasites" or highly irreplaceable or vulnerable ecological areas. The purpose of this effort is to provide an indication of wildlife-transportation conflicts and potential opportunities to mitigate impacts in upcoming highway projects identified in the STIPs. This information can be used to proactively plan for future highway improvement projects to include mitigation techniques that increase safety by reducing AVCs while also supporting the long-term ecological integrity of the Greater Yellowstone region by reducing wildlife mortalities and maintaining or increasing habitat connectivity.

2. STUDY AREA

The project's spatial extent was determined by using the GYC's defined boundary of the GYE (Figure 1). The GYE is uniquely labeled the single remaining relatively intact ecosystem in world's the northern temperate zone (Keiter and Boyce 1991). Encompassing approximately 18 million acres of northwest Wyoming, southwest Montana, and southeast Idaho, the GYE straddles the Continental Divide and the high elevation volcanic Yellowstone Plateau where the headwaters of seven major rivers (Yellowstone, Madison, Gallatin, Snake, Bighorn, Ruby, and Green) originate and descend to lower elevation valleys. Variation in elevation, geology, and climate influence the distribution of forest, shrubland, grassland, and lowland riparian habitats that support the numerous fish and wildlife species found in the GYE.

Two million acres of Yellowstone National Park habitat alone supports 381 known fish, wildlife, and bird species. Across the GYE, higher elevations provide summer habitat for approximately 35,000 elk (*Cervus elaphus*) plus smaller numbers of grizzly bear (*Ursus arctos horribilus*), black bear (*Ursus arctos americana*), wolves (*Canus lupus*), cougar (*Felis concolor*), bison (*Bison bison*), moose (*Alces alces*), pronghorn antelope (*Antilocapra americana*) bighorn sheep (*Ovis canadensis*), whitetail and mule deer (*Odocoileus virginianus* and *Odocoileus hemionus*, respectively). Many of these animals rely on habitats at lower elevations for winter range or to provide a diversity of seasonal food sources that omnivores such as bears depend on.

Figure 1: The Greater Yellowstone Ecosystem study area, as delineated by the Greater Yellowstone Coalition.

Lower elevation valley bottoms in the GYE are dominated by private lands where agriculture, domestic animal rangeland grazing, rural housing, and urban development occur (Hansen et al. 2002). About 32-36% of the GYE is privately owned (Hernandez 2004, Noss et al 2002). The majority of the GYE's protected public lands are at higher elevations and include 32% USDA Forest Service lands, 19% USDI Bureau of Land Management lands, while Yellowstone and Grand Teton National Parks together occupy 7% of the GYE, Tribal Lands make up 5% of the GYE, and wildlife refuges and other federal lands occupy the remaining 5% (Hernandez 2004).

While much of the private land in the GYE is currently undeveloped, rural residential land development of densities greater than one home per 16.2 acres increased by 350% between 1970 and 1999 (Hernandez 2004). By 2000, 359,492 residents occupied the 20 Montana, Wyoming, and Idaho counties in the GYE (Hansen et al. 2002), a 60% population increase since 1970 (Hernandez 2004).

Transportation infrastructure in the GYE includes airports, railways, and paved roads. The primary high-speed, high-capacity ground transportation in the GYE includes the interstate, US, and state highways covering 716 miles of roads in Montana, 929 miles in Wyoming, and 428 miles in Idaho; additionally, there are 310 and 159 miles of paved roads in Yellowstone and Grand Teton National Parks, respectively. Secondary routes such as unpaved road and trail networks accommodate lower volumes of travelers using a wider array of modes of transportation (such as off-road recreational vehicles, bikes, foot travel, and horses) to access more remote areas in the GYE.

Most roads assessed in this project are managed by state departments of transportation (DOT). The main routes through federal lands are managed by the respective federal agency and Federal Lands Highways (FLH); the Federal Highway Administration of the U.S. Department of Transportation is a critical planning and funding partner for both state DOTs and FLH.

3. METHODOLOGY

3.1. Animal-vehicle collision density analysis

We contacted Montana, Wyoming, and Idaho state departments of transportation (DOTs), the National Park Service, and state wildlife management agencies to request existing AVC data for GYE roads. While secondary routes and unimproved roads have unique direct and indirect cumulative impacts on wildlife and habitats (Forman 2003), we restricted our request to the primary routes including the interstate system, US and state highways, and paved park roads.

We asked what methods were used to collect these data and qualitatively assessed each dataset with regards to the data collection effort, consistency of recording AVC events, and any other factors that would affect the rigor of the analyses. Each AVC dataset was systematically screened to eliminate obvious duplicate records, and standard procedures were used to delete other potential duplicate data that were not as obvious. The latter situation could have occurred if more than one source contributed to the dataset; for example, if highway patrol reported an AVC on a weekend while DOT maintenance staff removed and reported the same carcass on Monday, the records would have unique dates and appear to be separate events. To reduce the potential for double-counting in these cases, if more than one AVC record involved the same species and sex (if known) of animal, occurred at the same location (either as a Universal Transverse Mercator or UTM location or a mile marker location +/-0.2 miles) and the same date +/- 2 days, we assumed these were duplicates record(s) and deleted the redundant data from the dataset. Although each state's dataset underwent separate GIS analyses (each state's data recording protocols were different and therefore could not provide reliable relative comparisons from a single dataset), all datasets of reported AVCs were standardized to include the date, species of animal, route, mile marker for each AVC report.

The cleaned AVC datasets were converted to Dbase (.dbf) files and imported into a GIS software program (see end of methods for list of software used). Spatial data layers for roads with measured geometrics (PolylineM) were reprojected for a common geographic projection and clipped to the GYE boundary. The AVC records were spatially attached using the PolylineM road files. The data are in UTM zone 12 and North American Datum (NAD) 27.

We ran density analyses for the AVC dataset with a 1.5 mile search radius to produce a density grid with nine values and 30-meter resolution. The density outputs were a product of assessing the neighboring data points within a 1.5 mile radius around each point. Density grid outputs were converted to color-coded polygons representing the different relative densities of AVC occurrences. The dataset only included AVCs on roads, but the polygons are wider than the road because this analysis used a search radius around each data point.

3.2. State Transportation Improvement Programs

We asked each DOT for the most current State Transportation Improvement Program (STIP) Plans. We reviewed each state's STIP projects in the GYE and made a qualitative judgment of each project's potential for incorporating mitigation to reduce wildlife-transportation conflicts. Small projects that didn't appear to involve "moving dirt" (e.g., chip sealing, pavement overlays, signing or reflective striping projects) were classified as having lower potential for mitigation while larger and more involved projects (e.g., reconstruction, culvert or bridge replacements) were classified as potential opportunities to incorporate mitigation. The STIP datasets, with each project's linear extent identified and classified according to the potential for mitigation opportunities, were converted to database files, imported into GIS and attached using the PolylineM road files. The classifications were color-coded and overlaid upon roads and AVC density polygons.

3.3. Corridors and Megasites

Two existing GIS analyses, one assessing habitat connectivity, or corridors, in the GYE and the other assessing the vulnerability and "irreplaceability" of GYE sites, were incorporated into the same map. Walker and Craighead (1997) delineated wildlife corridors on a regional scale in GYE area. In summary, their model combined indicators of habitat quality, road density, and forest to edge ratio into an habitat effectiveness index to identify core areas of habitat for grizzly bears and then used least-cost path analysis to identify likely routes that grizzly bears might use when traveling between areas of core habitat (Walker and Craighead 1997). Noss et al (2002) identified and prioritized vulnerable and biologically irreplaceable sites throughout the GYE that were unprotected and subject to degradation. Their analyses incorporated basic conservation approaches to protect special features, environmental variation, and habitat for focal species (grizzly bear, wolf, and wolverine). Identification of sites of concern was accomplished by incorporating spatial data relating to habitat suitability and population viability into a simulated annealing site-selection algorithm (Noss et al. 2002). Prioritization of the identified sites (referred to as "megasites") was based on nine criteria that related to minimum threshold goals to protect species and communities, to represent the region's habitat types and geoclimatic classes, and to protect large areas of habitats that can support and maintain viable populations of the focal species (Noss et al. 2002). We overlaid the top 25 prioritized megasites on our map.

Additional spatial datasets of standard geographic information were added to the map. All maps included the GYE boundary, main roads, towns, topography, and state boundaries. Because the map with the AVC density polygons, STIPs, corridors, and megasites was saturated with information, we created a second map displaying land ownership with the AVC density polygons and STIPS. To accomplish these tasks, we used ArcGIS/ Arc/Info with Spatial Analyst extension, ArcView 3.3 with Spatial Analyst extension, Xtools, Add True X,Y Centroid, and

FixJoin Avenue Scripts downloaded from ESRI's website, as well as MS Excel and MS Access. American Wildlands GIS lab conducted the GIS analyses.

4. RESULTS

We contacted more than 50 individuals in Montana, Idaho, and Wyoming to request AVC data. Twelve people responded with relevant information. We produced two maps displaying the resulting AVC density polygons and color-coded STIPs; one map was underlain by land ownership (**Error! Reference source not found.**) while the other displayed the least-cost-path corridor model and megasites under the AVC densities and STIPs (**Error! Reference source not found.**). The maps are not intended for interpretation without the results reported here.

The results of each state's analyses are reported by individual road segments. Each road segment is briefly described geographically relative to the GYE and landmarks such as mountain ranges and towns. We created a table summarizing information for each road segment on the geographic range and distance of the given road segment, the source(s) of AVC data for that road segment, the range of dates that the AVC data covered, general observations about data quality, and the total number of AVC observations recorded, along with a break down of occurrences by individual animal species. We listed stretches of roads with higher AVC densities (defined and displayed on the maps as colored polygon representing ranges of the average number of AVCs per 3 miles of roads [double the 1.5 mile density search radius]). Stretches of roads without colored polygons do not represent areas without reported AVCs, but rather areas with the lowest relative densities of AVCs. Finally, we summarized the overlapping areas AVCs with areas of ecological concern (corridors and megasites) and upcoming STIP projects for each road segment.

Montana Results

All Montana AVC data were obtained from the Montana Department of Transportation's (MDT) State Highway Traffic Safety Office. These data originated from two sources: Montana Highway Patrol (MHP) collision reports and MDT Maintenance records of carcass removals. The following statement was included with the data sent by MDT:

> "This information is not inclusive of all incidents of animal-vehicle collisions. All incidents are not reported. The Animal Incident Reporting System is an opportunistic collection and reporting system, initiated by a research project, with no guarantee of accuracy or statistical validity."

We combined the MHP and maintenance carcass removal records. After screening for and removing duplicate records, the remaining dataset consisted of 5,421 AVC observations between 1998—2002 (through November 12th, 2002). The data were located to the nearest even milepost. While we conducted only one density analysis with all 5,421 records, different segments of road had data that covered different spans of time. Datasets that cover shorter periods of time may yield density grid results that "wash out" relative to the other datasets that cover longer periods of time.

4.1.1. US Highway 191

From Main Street of Bozeman to Four Corners and south to West Yellowstone, US Highway 191 (US 191) is one of three Montana roads that access a Yellowstone National Park (YNP) entrance gate (the West Entrance, in West Yellowstone, Montana). This road follows the valley bottoms that divide the Gallatin Range from the Madison Range, and includes 20 miles that lie within YNP.

4.1.1.1. AVC data summary

Table 1 summarizes AVC data for US 191. The density analysis, summary of data in Table 10, and this summary do not include additional data reported by YNP; see Wyoming results under the YNP heading for a summary of the AVCs on US 191 in YNP. On average, a minimum of 5 AVCs per mile occurred along these 88 miles between 1998 and 2002. Notably, 6 bighorn sheep and 35 moose were killed on US 191 during that time. Higher densities of AVCs occurred at the following locations:

- From Four Corners south, past Gallatin Gateway (up to 7.94 AVCs per 3 miles)
- North of Big Sky, in Gallatin Canyon (up to 7.94 AVCs per 3 miles)
- Just north of Big Sky (up to 10.65 AVC per 3 miles)
- Big Sky south to YNP northwestern border (to 7.94 AVCs per 3 miles)

Table 1: Summary of animal-vehicle collisions reported from January 1998 to November 2002 on US Highway 191 (US 191) from Bozeman to West Yellowstone, Montana. Additional data recorded by Yellowstone National Park for the segment of US 191 that cuts through the park is not included in this summary.

State	Montana	**Route**	US 191	**Road segment length**	88 miles
Geographic & milepost range		Bozeman to Four Corners to West Yellowstone			
Data source(s)		Montana Department of Transportation's maintenance carcass removal reports and Montana Highway Patrol collision reports.			
Date range		1/29/1998 - 11/12/2002			
Data Quality	Data opportunistically recorded and are not guaranteed to be consistently recorded. Carcass and collision reports were merged and screened for duplicates. It appears that there are gaps in reporting over time and at some milemarkers.		**Reported AVCs and carcasses removed**	**total:**	**445**
				Bighorn Sheep	6
				Black bear	1
				Bison	4
				Moose	35
				Elk	100
				Mule Deer	104
				Whitetail Deer	187
				Other wild	7
				Unknown	1

4.1.1.2. Corridors and Megasites

US 191 travels through or skirts a significant length of the Gallatin River megasite. This megasite was ranked fourth on the overall list of megasites, a ranking earned due to a high "vulnerability" score. The site description of the Gallatin River megasite highlights the

importance of the elk migration corridor that links YNP to the Taylor Fork area in the Madison Range to the west; US 191 bisects this migration corridor. This road passes through core habitat from the north end of Gallatin Canyon south to West Yellowstone.

4.1.1.3. Opportunities to mitigate via STIP

The MDT STIP for 2004-2006 shows numerous projects scheduled for this segment of US 191. Several pavement preservation projects were planned for various sections of US 191. The Gallatin Gateway area was slated for the construction of turn bays and a pedestrian tunnel under US 191. One reconstruction project for 2004 in Gallatin Canyon was listed under the projects in the incidental construction phase; it appears this is a slope flattening and widening project that is estimated to cost <$1million.

5. DISCUSSION

This report is a preliminary assessment of wildlife-transportation issues in the GYE based on available AVC data overlapping regional ecological analyses of corridor habitats and priority ecological areas at risk. We do not prioritize specific conflict areas or make explicit mitigation recommendations, although we do outline upcoming transportation projects (STIPs) as potential opportunities to include mitigation measures. This report is a first step to understanding where conflicts may be occurring and where future research, monitoring, or mitigation efforts may be best applied.

Results in this report can be presented with or without the maps, although the maps are excellent tools for illustrating where wildlife may be at odds with transportation infrastructure in the GYE. The maps should not be presented without the report—it is important that the limitations of our analysis be acknowledged openly in order to build credibility and trust with audiences. We address these limitations below.

5.1. Animal-vehicle collision density analysis

Quality of data was an issue for the datasets. All data was opportunistically collected and were not guaranteed of any consistency of effort. Even with daily systematic roadkill surveys, it has been estimated that survey observations underestimate numbers of animals killed during daylight hours by a factor of 12-16 (Slater 2002). As emphasized throughout the results, the data under-represent reality and, unfortunately, it is impossible to gauge how far off the data may be from truth. We reinforce that these data can only be considered an indicator of AVC occurrences.

The GIS density analysis is a relative comparison of densities of AVCs on all roads within a given analysis area (in this case, each state was analyzed separately). Due to the potential lack of consistency in reporting efforts between routes or counties or districts, the densities of AVCs in some areas may appear to be greater simply because one observer was more vigilant than another. Consider "route A" with 100 AVCs in one mile reported over 10 years, and "route B" with 50 AVCs in one mile reported over only one year; "route A" will appear to have higher densities of AVCs relative to "route B" if you simply glance at the density polygon results on the map. But in reality, "route A" had a rate of 10 AVCs/mile/year while "route B" had a rate of 50 AVCs/mile/year. Ideally, one would use data consistently collected over the same period of time, but in this case, we were not able to do that within our schedule and budget. While this is the "best available information", we emphasize that few final conclusions can be drawn from the density analyses and that the information compiled in this report should only be considered as an indicator of AVC activity.

5.2. State Transportation Improvement Program

Montana Department of Transportation also provided this disclaimer with their 2004-2006 State Transportation Improvement Program (STIP):

> "While the projects and dates shown are official departmental objectives, it is important to bear in mind that this program is only tentative. Execution of this program is contingent on a number of factors, including federal and state funding availability, right-of-way acquisition, utility relocations, environmental review, surveying, and design.

Complications with one or more of these factors may cause a given project to be rescheduled."

Each state's STIP lists preliminary engineering and planned construction for transportation improvement projects, typically forecasting three years ahead. These listings include a general description of the type of project, location, estimated timeline and cost for each project. Any STIP is subject to change at any point due to changing priorities or availability of resources. Some projects listed here are from a most recent STIP but may be "past due" (2003 and 2004 projects). We listed all projects since we did not follow up with the DOTs about each project's progress, and it is not uncommon for projects to be delayed. For specific information about a project, it will be necessary to contact the DOT directly.

Most ecological mitigation measures are incorporated into transportation construction projects that have been proposed for reasons unrelated to ecological concerns. In only a few cases have there been "stand alone" mitigation efforts (Florida DOT has installed under-crossings for wildlife outside of any other "purpose and need" for a project; there may be a few other examples, but it is safe to say such occurrences are rare). The STIP allows us to look for the opportunities to avoid, mitigate or compensate for negative impacts to the ecosystem.

We classified STIP projects in the GYE as "likely to incorporate mitigation" vs "less likely to incorporate mitigation". This was a subjective judgment based on the author's experiences and should not be considered the final word. Ultimately, the DOTs determine what considerations they want to incorporate into their projects.

5.3. Corridors and Megasites

The core habitat used in the least-cost path corridor model was defined for grizzly bears. While these omnivores likely need many of the same habitat qualities that other terrestrial wildlife requires, we must consider other species habitat needs that may not be represented in the model used here. For example, aquatic species will have different habitat and landscape needs; mule deer and pronghorn antelope may have specific movement patterns that the corridor model does not identify as core or corridor habitat; and wildlife that depend on rugged and steep terrain (bighorn sheep, avian nesting habitats) may not be properly accounted for in this model.

The corridor model is a regional model and does not provide specific landscape-level (smaller scale) locations for wildlife crossings. In addition, the corridor model is theoretical and has not been rigorously validated in the field (this would be a huge long-term undertaking, although it could be done). The corridor model should be considered a "rough cut" of important areas for wildlife and further analyses is needed to address other species-specific needs and other landscape scales.

We only considered the presence or absence of priority megasites (the top 25 defined areas with the highest vulnerability and irreplaceability) in our assessment. We did not provide a detailed evaluation of the megasites and how transportation infrastructure may be affecting the resources within megasites.

6. RECOMMENDATIONS

We recommend that the GYC disseminate this report to transportation agencies and stakeholders discuss of these findings and to work together regarding future impacts and mitigation options. We recommend stakeholders (any interested organizations or individuals) ask transportation agencies to assess, avoid, mitigate, or compensate for impacts when and where:

- roads intersect core or corridor wildlife habitats;
- AVCs rates are high (both ecological and safety concerns);
- species of special concern are being killed in AVCs or isolated due to habitat fragmentation as a result of roads; and/or
- traffic volumes are at or are projected to increase to 4,000 vehicles a day or more (Ruediger et al. [2000] suggests that 4,000 vehicles/day can form a "barrier" to animal movements and can cause significant levels of animal mortalities; this level of traffic may be more or less of a barrier depending on the species and other conditions).

This report does not comprehensively address all the points above, but can be used as a "starting point" for discussing these issues with transportation agencies and interested stakeholders. There are many other sources of information and data that may be useful in further discussions, e.g., the Jackson Hole Wildlife Foundation's report (Biota Research and Consulting 2003) on wildlife and transportation issues in Teton County, Wyoming. Appendix A summarizes other potential resources and efforts that may be helpful.

Further, we offer additional suggestions to GYC and other stakeholders:

- Improve AVC data collection protocols either by working with the agencies that collect these data or by establishing independent efforts to collect these data (Note: appropriate permits are required prior to collecting these data)[1].
- Further define "conflict areas" and develop a prioritization tool to help both stakeholders and transportation agencies perform triage and concentrate on the most urgent or severe problems.
- Re-analyze subsets of AVC data in areas of concern to better hone the spatial aggregation of AVC occurrences.
- Assess priority megasite threats relative to transportation issues.
- Compile supporting data on species of special concern.
- Garner and maintain good relationships with DOT staff, county planners, and state game and fish agencies. This is essential and requires time, but goes a long way to building trust, an essential ingredient for working together.

[1] The WTI has created a prototype handheld computer and Global Positioning System (GPS) with customized software for collecting standardized, spatially-accurate AVC data that allows for simple data collection, management and more rigorous analyses; we hope to field test these tools in the next year and are looking for opportunities to work with agencies to adapt the tool to meet their institutional and technological needs.

- Form collaborations and pool funds for researching specific areas/animals of concern. Transportation agencies may be more apt to contribute funding to monitoring efforts if they see there are matching funds and outside interest.
- The data synthesized here is subject to change as the landscape and transportation planning and budgets change over time; therefore we recommend this exercise be repeated in 5 years.

As the GYE region continues to experience growth and development (Hernandez 2004), it is becoming increasingly important to consider how this progression is and will continue to affect wildlife and their habitats. Transportation infrastructure is only one of many pieces of the complex puzzle that affects the landscape, habitats, wildlife, and communities' quality of life in the GYE. Both transportation agencies and land use planners need to proactively and holistically plan for the perpetuity of healthy wildlife habitat and populations in the GYE. We hope this report will lead to further discussions and relationship building that will work toward the goal of protecting this region's habitats and wildlife while maintaining the quality of life that safe and efficient transportation brings to our communities.

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Appendix B

Publicity for Public Hearing – Advertisement, Press Release, Postcard

Distribution List – State, Federal and Local Entities Receiving EA

Montana Department of Transportation

MDT

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NOTICE OF AVAILABILITY & PUBLIC HEARING

Gallatin Canyon Environmental Assessment (EA)

Review of proposed safety improvements on US Hwy 191 north and south of the junction with MT 64

Project ID: STPHS 50-1(14)8, Control Number A544

The Montana Department of Transportation (MDT) has completed the Environmental Assessment (EA) for the Gallatin Canyon and the EA document is now available for public review and comment. The EA examines several safety improvements proposed for Highway 191 between reference posts 32 and 70.

These safety improvements include adding turn lanes, flattening side slopes and removing obstacles from the roadside, widening shoulders, improving sight distance by flattening curves and hills, upgrading guardrail, replacing the bridge over Swan Creek, and replacing the bridge over the West Fork of the Gallatin River to accommodate a new turn lane.

MDT, along with the Federal Highway Administration, invites interested individuals, organizations, and federal, state, and local agencies to review the EA and provide comments.

Viewing options

Anyone interested in reviewing the EA may view it online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml** or at one of the following locations:

- Bozeman Public Library – 220 E Lamme, Bozeman
- Gallatin County Offices – 311 W Main, Bozeman
- MDT Bozeman Office – 907 N Rouse Ave, Bozeman
- Big Sky Community Library/Ophir School – 45465 Gallatin Rd, 1.5 miles S of MT 64/US 191 junction
- Big Sky Post Office – 55 Meadow Center Drive - Suite 2, Big Sky
- West Yellowstone Public Library – 220 Yellowstone Avenue, West Yellowstone
- MDT Butte District Office – 3751 Wynne, Butte
- MDT Environmental Services – Room 111, 2701 Prospect Avenue, Helena

To request a hard copy of the EA, please contact MDT Environmental Services at (406) 444-7228.

How to comment

A six-week review period will **begin on December 12, 2005** and **conclude on January 27, 2006.** Oral or written comments may be presented at the public hearing. Alternatively, written comments on the EA may also be addressed to Jean Riley, MDT Environmental Services, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001 or submitted online at *www.mdt.mt.gov/pubinvolve/eis_ea.shtml* **by January 27, 2006.**

For further information

For more information, please contact Jeff Ebert, MDT Butte District Administrator, at (406) 494-9600 or Laura Meyer of David Evans & Associates at (720) 946-0969. To arrange special accommodations for persons with disabilities, please call MDT at (406) 494-9600 or 1-800-261-6909. For the hearing impaired, the TTY number is (406) 444-7696 or (800) 335-7592.

Public Hearing
7pm – Tuesday, January 10, 2006
Ophir School Gymnasium
1.5 mile south of the US 191/MT 64 intersection

News News News News News News News News News News News News News News News News News News News News News News News News News News News News News News News

December 9, 2005

FOR IMMEDIATE RELEASE

For more information:
Jeff Ebert, Butte District Administrator, (406) (406) 494-9600
Laura Meyer, David Evans & Associates, (406) (720) 946-0969
Lorelle Demont, Public Involvement, (406) 444-7200

Public hearing: Gallatin Canyon Environmental Assessment and proposed safety improvements

Beginning December 12, an environmental assessment (EA) of the Gallatin Canyon is available for review and comment. The EA examines several safety improvements proposed for Highway 191 between reference posts 32 and 70.

The Montana Department of Transportation (MDT), along with the Federal Highway Administration, invites all interested parties to review the EA and provide feedback at a public hearing on Tuesday, January 10, 2006, starting at 7 pm. The meeting will be held at the Ophir School Gymnasium located 1.5 miles south of the US 191/MT 64 intersection at 45465 Gallatin Rd.

The six-week review period for the EA will conclude on January 27, 2006. Opinions, comments and concerns may be submitted in writing to Jean Riley, MDT Environmental Services, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001 or online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml by January 27, 2006.

Anyone interested in reviewing the EA may view it online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml or at one of the following locations:

- Bozeman Public Library – 220 E Lamme, Bozeman
- Gallatin County Offices – 311 W Main, Bozeman
- MDT Bozeman Office – 907 North Rouse Ave, Bozeman
- Big Sky Community Library/Ophir School – 45465 Gallatin Road, 1.5 miles south of the MT 64/US 191 intersection
- Big Sky Post Office – 55 Meadow Center Drive - Suite 2, Big Sky
- West Yellowstone Public Library – 220 Yellowstone Avenue, West Yellowstone
- MDT Butte District Office – 3751 Wynne, Butte
- MDT Environmental Services – Room 111, 2701 Prospect Avenue, Helena

A hard copy of the EA may be requested from MDT Environmental Services at (406) 444-7228.

– more –

MDT hired David Evans and Associates, a consulting firm specializing in sustainable solutions for complex transportation issues, to conduct the formal environmental assessment (EA) and examine all issues related to the proposed projects. The process, development, requirements, and schedule for the EA will be explained in detail at the meeting, along with details regarding potential projects.

Proposed safety improvements include adding turn lanes, flattening side slopes and removing obstacles from the roadside, widening shoulders, improving sight distance by flattening curves and hills, upgrading guardrail, replacing the bridge over Swan Creek, and replacing the bridge over the West Fork of the Gallatin River to accommodate a new turn lane.

For more information, please contact Jeff Ebert, MDT Butte District Administrator, at (406) 494-9600 or Laura Meyer of David Evans & Associates at (720) 946-0969. To arrange special accommodations for persons with disabilities, please call MDT at (406) 494-9600 or 1-800-261-6909. For the hearing impaired, the TTY number is (406) 444-7696 or (800) 335-7592.

----------END----------

Project name: Gallatin Canyon Environmental Assessment and proposed safety improvements
Project ID: STPHS 50-1(14)8
Control number A544

SIDE 1

PUBLIC HEARING

The Montana Department of Transportation (MDT) will be holding a public hearing on the Gallatin Canyon US 191 project. MDT and the Federal Highway Adminstration have evaluated safety improvements for this corridor in the Environmental Assessment (EA) document. A public hearing for the Gallatin Canyon project EA will be held on:

Tuesday, January 10, 2006
7:00 pm to 9:00 pm
at
Ophir School
45465 Gallatin Road
Gallatin Gateway (Big Sky), MT

Information on the proposed safety improvements is presented in the EA, which is available online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml and at the following locations:

- **Bozeman Public Library, Bozeman**
- **Gallatin County Offices, Bozeman**
- **Ophir School, Big Sky**
- **Big Sky Post Office, Big Sky**
- **West Yellowstone Public Library, West Yellowstone**
- **MDT Butte District Offices, Butte**
- **MDT Environmental Services Office, Helena**

To arrange special accommodations for disabilities call MDT at (406) 494-9600 or (800) 261-6909. For TTY call (406) 444-7696 or (800) 335-7592.

SIDE 2

Montana Dept. of Transportation

Montana Dept. of Transportation, District 2
Jeff Ebert, District Administrator
3751 Wynne, P.O. Box 3068
Butte, MT 59702-3068

Public Comments Requested

Comments on the proposed safety improvements in the EA can be sent to:

Jean Riley, P.E.,
MDT Environmental Services
2701 Prospect Avenue
P.O. Box 201001, Helena, MT
59260-1001.

Jean Riley's telephone number is (406) 444-9456, or comments can be made directly through a link to www.mdt.mt.gov/pubinvolve/eis_ea.shtml. The deadline for public comments is January 27, 2006.

SIDE 2

Montana Dept. of Transportation

Montana Dept. of Transportation, District 2
Jeff Ebert, District Administrator
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SIDE 1

PUBLIC HEARING

The Montana Department of Transportation (MDT) will be holding a public hearing on the Gallatin Canyon US 191 project. MDT and the Federal Highway Adminstration have evaluated safety improvements for this corridor in the Environmental Assessment (EA) document. A public hearing for the Gallatin Canyon project EA will be held on:

Tuesday, January 10, 2006
7:00 pm to 9:00 pm
at
Ophir School
45465 Gallatin Road
Gallatin Gateway (Big Sky), MT

Information on the proposed safety improvements is presented in the EA, which is available online at www.mdt.mt.gov/pubinvolve/eis_ea.shtml and at the following locations:

- **Bozeman Public Library, Bozeman**
- **Gallatin County Offices, Bozeman**
- **Ophir School, Big Sky**
- **Big Sky Post Office, Big Sky**
- **West Yellowstone Public Library, West Yellowstone**
- **MDT Butte District Offices, Butte**
- **MDT Environmental Services Office, Helena**

To arrange special accommodations for disabilities call MDT at (406) 494-9600 or (800) 261-6909. For TTY call (406) 444-7696 or (800) 335-7592.

Distribution List – Federal, State, and Local Entities Receiving EA

Federal Agencies

U.S.D.A. Gallatin National Forest
Supervisor's Office
PO Box 130
Bozeman, MT 59771
Gene Gibson

U.S. Army - Corps of Engineers (CoE)
Helena Regulatory Office c/o MDNR&C
10 West 15th Street, Suite 2200
Helena, MT 59626-0014
Mr. Allan E. Steinle, Montana Program Manager

U.S. Fish and Wildlife Service
Montana Field Office
100 N. Park, Suite 320
Helena, MT 59601
Mr. Scott Jackson, Wildlife Biologist

State Agencies

Montana Fish, Wildlife & Parks
1400 South 19th Street
Bozeman, MT 59718
Mr. Patrick Flowers, Regional Supervisor

Montana Department Of Natural Resources And Conservation
Bozeman Field Office
151 Evergreen Dr., Suite C
Bozeman, MT 59715
Scott Compton, Regional Manager

Montana Department Of Environmental Quality
Permitting and Compliance Division
Lee Metcalf Building
1520 East Sixth Avenue, PO Box 200901
Helena, MT 59620-0901
Tom Ellerhoff, Administrative Officer

Local Agencies

Gallatin County

Gallatin County Courthouse
311 West Main, Room 301
Bozeman, MT 59715
Mr. John Vincent, County Commissioner – Chairman

Other Organizations

Big Sky Chamber of Commerce

PO Box 160100
Big Sky, MT 59716

American Wildlands
40 East Main Street, Suite 2
Bozeman, Montana 59715

Public Locations

Bozeman Public Library

220 East Lamme
Bozeman, MT 59715

West Yellowstone Public Library
PO Box 370
23 N Dunraven Street
West Yellowstone, MT 59758-0370

Ophir School District and Library
45465 Gallatin Road
Gallatin Gateway, MT 59730

Big Sky Post Office
PO Box 169998
Big Sky, MT 59716-9998

Gallatin County Offices

311 West Main
Bozeman, MT 59715

MDT Environmental Services Office
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

MDT Butte District Offices
3751 Wynne
PO Box 3068
Butte, MT 59702-3068

Appendix C

Agency Correspondence

Tom H. 9
✓ Brady

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
BOZEMAN UNIT OFFICE

BRIAN SCHWEITZER, GOVERNOR

STATE OF MONTANA

(406) 586-5243
FAX: (406) 587-9726

2273 BOOT HILL COURT - SUITE 110
BOZEMAN, MONTANA 59715-7249

January 4, 2006

Ms. Jean Riley, P.E.
Bureau Chief, Environmental Services
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59620-1001

Re: GALLATIN CANYON – SLOPE FLATTENING/WIDENING
STPHS 50-1(14)8 Control No. A544
Environmental Assessment

Dear Ms. Riley,

Per your request we have reviewed the Gallatin Canyon – Slope Flattening/Widening Environmental Assessment.

The State of Montana holds Ownership of the land and Minerals located below the low water marks of navigable rivers and lakes. The Department of Natural Resources and Conservation (DNRC), Trust Land Management Division, administers these lands on behalf of the state. The Gallatin River is defined as a navigable river from Taylor's Fork to Central Park, Montana. Within this area the DNRC will require easements for bridges, utility lines and pipelines over, below and above navigable waterways and a land use license (LUL) will be required for work in the river channel.

Structures that will be affected include the 35 MPH Bridge in section 15 T5S R4E, the Jack Smith Bridge in section 27 T6S R4E and any utility lines or pipelines associated with them. These structures will require easements.

Thank you for the opportunity to comment on the Gallatin Canyon – Slope Flattening/Widening Environmental Assessment. If you have any questions or comments please contact me at (406) 556-4507 or DNRC Bozeman Unit, 2273 Boothill Court, Suite 110, Bozeman, MT 59715.

Sincerely

Craig Campbell

Craig Campbell
Bozeman Unit Manager

CC: Garry Williams, CLO Area Manager
Jeanne Holmgren, Bureau Chief REMB

Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

January 11, 2006

Jean Riley, P.E.
Bureau Chief
Environmental Services Bureau
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

Dear ~~Ms. Riley~~ Jean:

The Department of Environmental Quality (DEQ) reviewed the environmental assessment (EA) for the proposed Gallatin Canyon Slope Flattening and Widening Project.

After reviewing the EA, the DEQ's comments include:

On page 3-34, the discussion regarding the West Gallatin should note that in addition to metals, runoff from highways can also include substantial amounts of sand and salt, where heavy snowfall necessitates increased highway maintenance activities. Sand, sediment (silt and clays), and nutrients associated with sediments in the West Gallatin are factors affecting aquatic life, resulting in a slight to moderate impairment. These pollutants pose long-term, continuing impacts and should be mitigated.

The mitigation discussion on page 3-35 should note design options that provide for curbing that directs runoff water to permanent sedimentation retention structures. Also, the proposed bridge design at this site should consider design features that directs bridge surface runoff off the bridge along curbs, and not through drain ports that empty directly into the river.

Similar design features should be considered and discussed on page 3-34 involving the Gallatin River, and in the "wetlands" impacts section of the document, pages 3-37 - 3-45.

MDT should also refer to the "Montana Department of Transportation (MDT) Design Considerations for Permanent Erosion Control Features to Reduce Sediment Transport." This document was prepared by a team of MDT engineers in August 2005 and notes several design features that are applicable to this proposal.

Additionally, DEQ suggests that wetland mitigation take place in the same watershed (the Gallatin). If on-site mitigation is not feasible, could MDT research mitigation either above or below the project area on public lands within the Gallatin Hydrologic Unit code (10020008)?

Lastly, the downstream segment of the Gallatin River below Spanish Fork (outside of the project boundary) is also listed as impaired due to flow alteration and dewatering. Sometimes, additional investigation finds that siltation (a pollutant and therefore requiring a TMDL) is also an issue because of the flow alteration.

Thank you for the opportunity to review the report. If you have any questions regarding DEQ's comments please contact Jeff Ryan, Water Protection Bureau (406-444-4626), Robert Ray, Water Quality Planning Bureau (406-444-5319), or me (406-444-6780).

Sincerely,

Tom

Tom Ellerhoff
Environmental Program Manager

cc: R. Ray, DEQ
J. Ryan, DEQ

Montana Fish, Wildlife & Parks

1400 South 19th Ave
Bozeman, MT 59718

January 27, 2006

Jean Riley, P.E.
Environmental Services Bureau Chief
Montana Department of Transportation
2701 Prospect Ave, Box 201001
Helena, Montana 59620-1001

Dear Ms. Riley,

I recently reviewed an environmental assessment (EA) from your Department for the Gallatin Canyon Slope Flattening and Widening project, STPHS 50-1(14)8, Control Number A544, October 2005. This is my first opportunity to comment on this proposal, although I note that the EA includes earlier comments from our Department contained in letters to Laura Hunter dated July 11, 2003 and December 2, 2003. The EA addresses proposed highway changes intended to improve road safety along about 38 miles of US Highway 191 as it parallels the West Gallatin River in a narrow canyon between mileposts 32 and 70. The need for the proposed safety improvements is clear both from the document and from our experience traveling this highway on a regular basis.

As you know the West Gallatin River supports a substantial trout fishery well known to anglers that is both ecologically and economically significant to this area. Many portions of the EA acknowledge the potential risks of harm to that fishery that the proposed construction activities could pose, including adverse effects on channel morphology and the potential to concentrate and deliver increased amounts of various pollutants to surface waters. In a general way the EA identifies appropriate safeguards against these unwanted effects during construction, including several references to "Best Management Practices" that will be used during construction. Based on these acknowledgements and assertions, I anticipate that your construction plans will include actions to reduce or mitigate sediment delivery, and to prevent discharges of petroleum products or other harmful substances into nearby ditches, or to lands capable of delivering these substances to local waterways. For these reasons I have only a few additional comments to offer at this time:

1) I understand that at this level of design and environmental review many specific construction details and impacts have not yet even been identified. However, statements such as "Culverts would be designed to accommodate fish passage *to the extent practicable*" (emphasis mine, Table S.2, Page S12 of the EA) as mitigation for fish passage effects are a concern if they are intended to mean that MDT will unilaterally make these kinds of decisions. Perhaps that is not what was meant, but this may be an implication to avoid. I do recognize that most of my misgivings about this type of decision-laden language in the EA are safeguarded in other permit review processes.

2) I did not see any discussion of intentionally engineering grades to establish settling ponds, wetland filters, or similar features that might reduce the amount of materials the new roadway would deliver to this drainage. I wonder if this road improvement project might not be a good time to consider incorporating such features where feasible? An important project goal should be to ensure that the completed project poses no direct or persistent environmental threat to the local watershed. Perhaps more could be done than to just rely on the assumption that the completed project would not be significantly worse than the existing condition?

3) Safe angler access to the West Gallatin River is an ongoing concern along Highway 191, particularly as traffic has increased so much recently with continuing construction activities at Big Sky. Are there opportunities within the general scheme of the proposed road safety improvements to intentionally enhance safe public access to the River? The bridge replacements seem to offer one opportunity. Perhaps there are others? From a fisheries and river recreational standpoint, the replacement of two existing three-span bridges with clear span bridges is an especially welcome improvement. I just wonder if other opportunities to enhance public recreational use of the area have been considered, in addition to the road safety improvements?

4) At this time, the Montana Department of Environmental Quality (DEQ) is developing an Environmental Impact Statement (EIS) evaluating a petition to designate the upper West Gallatin River as an Outstanding Resource Water (ORW) under provisions of state law and the Clean Water Act. The initial public scoping process for this EIS ended in late December 2005. Since most of the areas impacted by the Gallatin Canyon Slope Flattening and Widening proposals coincide with the area under consideration for ORW designation, I wonder how the Montana Department of Transportation (MDT) is coordinating this project with DEQ? In addition, it seems that MDT should also evaluate how the proposed roadwork will potentially effect a recommendation to designate the upper West Gallatin River as an ORW.

I really appreciate this opportunity to comment on the Gallatin Canyon Slope Flattening and Widening EA. I hope that my remarks are useful to you at this time. I look forward to learning how your project plans develop.

Please contact me with any questions.

Sincerely,

Joel Tohtz
FWP Fisheries Biologist
406-994-6938
jtohtz@state.mt.us.

C: Pat Flowers, FWP Region Three Supervisor
Bruce Rich: FWP Region Three Fisheries Manager

Appendix D

http://www.mdt.mt.gov/pubinvolve/docs/eis_ea/ea_gallatincanyon.pdf

Environmental Assessment