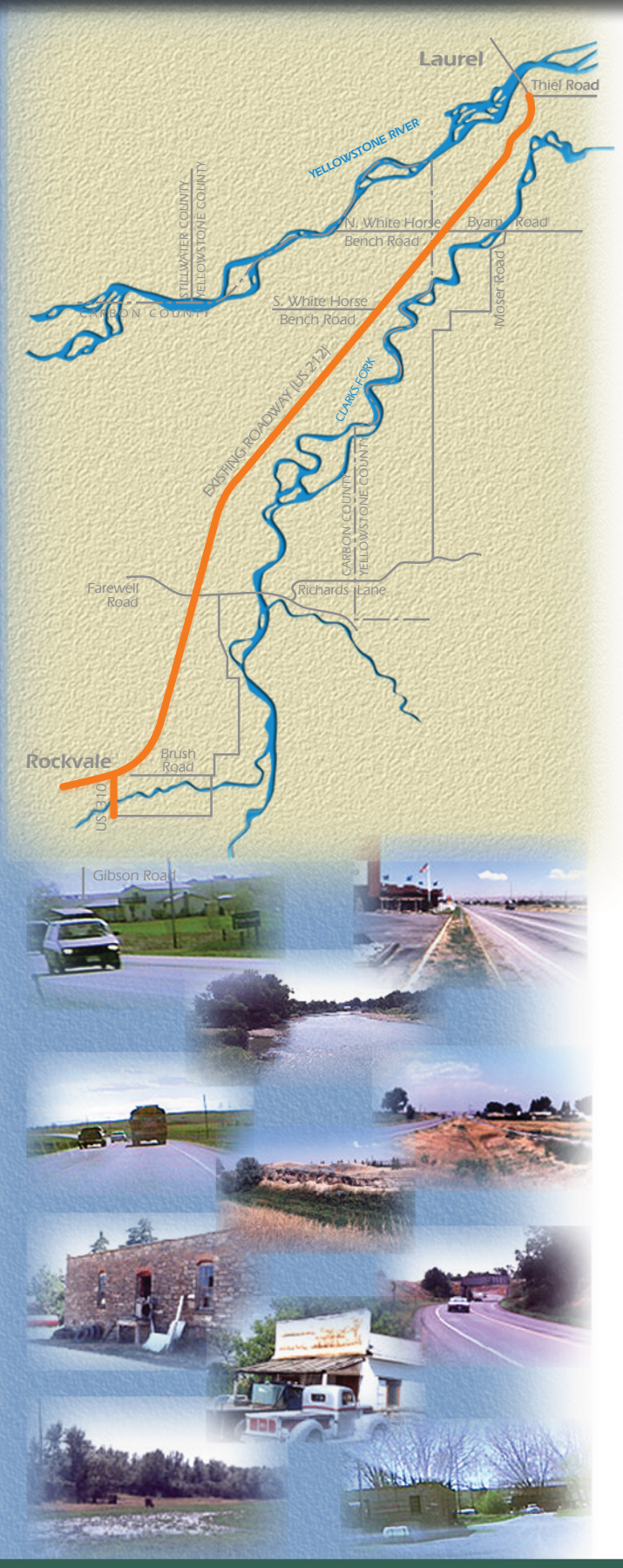
US 212 Reconstruction

ROCKVALE *to* LAUREL



Final Environmental Impact Statement

Montana Department of Transportation

NH 4-1(21)43
Control No. 4070

U.S. Department of Transportation
Federal Highway Administration

March 2009

Final Environmental Impact Statement for
NH 4-1(21)43
ROCKVALE-LAUREL (PPMS-OPX2 Control #4070) in
Yellowstone and Carbon Counties, Montana

This document is prepared in conformance with the Montana Environmental Policy Act (MEPA) requirements and contains the information required for an environmental impact statement under the provisions of ARM 18.2.237(2) and 18.2.243. It is also prepared in conformance with the National Environmental Policy Act (NEPA) requirements for an environmental impact statement under 23 CFR 771.125 and Section 4(f) of the U.S. Department of Transportation Act under 23 CFR 774. Submitted pursuant to 42 USC 4332(2)(c), Sections 75-1-201 & 2-3-104 MCA, and Executive Orders 11990, 11988, 12898, and 13112 by the

U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION,

MONTANA DEPARTMENT OF TRANSPORTATION,

and the following Cooperating Agencies

U.S. Fish and Wildlife Service
U.S. Natural Resources Conservation Service
U.S. Army Corps of Engineers
Montana Fish, Wildlife and Parks

3-18-9
Date of Approval

Montana Department of Transportation

3-24-09
Date of Approval

Federal Highway Administration

The following persons may be contacted for additional information concerning this document:

Tom Martin, P.E.
Bureau Chief, Environmental Services Bureau
Environmental Services Bureau
Montana Department of Transportation
2701 Prospect Ave., P.O. Box 201001
Helena, Montana 59620-1001
(406) 444-7228

Alan C. Woodmansey, P.E.
Operations Engineer
Montana Division
Federal Highway Administration
585 Shepard Way
Helena, Montana 59601
(406) 449-5302, Extension 233

ABSTRACT

This proposed highway reconstruction project is for a 17.4-kilometer (10.8-mile) section of U.S. Highway 212/310 between Carbon and Yellowstone counties in south-central Montana, along with a short section of U.S. Highway 310 southwest of Rockvale. The alternative preferred by MDT and the Federal Highway Administration would involve "shifting" the alignment west-northwesterly with grading, paving, new structures, guard rails, and fencing, and would include access to both the present route and adjacent or nearby properties. That Preferred Alternative, designated Alternative 5B—Combined West Bench herein, would be a four-lane divided facility between the Rockvale area and the existing four-lane highway southerly of Laurel. Principal environmental impacts would be to land use (primarily in farmlands), traffic noise, water resources (an intermittent stream and irrigation ditch crossings), and wetlands. Some residential relocations are expected.

Comments on this final environmental impact statement are due by May 11, 2009, and should be sent to Tom Martin, P.E., at the address shown above.

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SUMMARY

An environmental impact statement (EIS) helps the lead agencies (the Montana Department of Transportation [MDT] and the U.S. Department of Transportation, Federal Highway Administration [FHWA]) make informed choices between reasonable alternatives. This summary of the *US 212 Reconstruction Rockvale to Laurel Final Environmental Impact Statement* (Final EIS) highlights key information about the project purpose, the alternatives that were considered, and how the alternatives compared to each other. This information is discussed in more detail in other chapters of this Final EIS. The lead agencies selected a Preferred Alternative that is described in this Final EIS, and appreciate the participation from the public throughout this process.

Project Route

This Final EIS has been prepared for a 17.4-kilometer (km) (10.8 mile [mi]) portion of U.S. Highway 212/U.S. Highway 310 (US 212/310) between Carbon and Yellowstone counties in south-central Montana, along with a short portion of U.S. Highway 310 (US 310) southwest of Rockvale. For simplicity, the route is referred to as US 212 in the remainder of the document.

Proposed Alternatives

This Final EIS reviews proposed options (including a No Build Alternative) for US 212 from the City of Laurel south to Rockvale between reference post (RP) 42.1 and approximately RP 52.9. Note that the original project limits set by MDT began at RP 42.6. However, two of the project alternatives developed (Alternative 1—Far West Bench and Alternative 3A—Near Existing Alignment) would extend the southwest project limit to RP 42.1. The project area is located in Carbon and Yellowstone counties.

This Final EIS identifies a Preferred Alternative (designated as Alternative 5B—Combined West Bench herein) to reconstruct US 212. The Preferred Alternative includes a four-lane divided facility on a new alignment generally northwest from its present route. A build alternative would be constructed as appropriate in accordance with current MDT standards.

Environmental Consequences and Mitigation

The probable social, economic, and environmental impacts that may result from construction and implementation of the proposed project are identified in this document. This Final EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) as implemented for federally funded projects (42 U.S. Code [USC] 4321 et seq.) and the Montana Environmental Policy Act (MEPA) (Montana Code Annotated [MCA] 75-1-101 et seq.). Measures proposed to mitigate adverse impacts are also described.

Topics

This summary highlights the major findings of this Final EIS and addresses the following topics:

- Purpose and Need
- Project Description
- Project History
- Alternatives
- Affected Environment
- Environmental Consequences
- Mitigation
- Cumulative Impacts
- Permits and Other Governmental Actions
- Major Unresolved Issues

Purpose and Need

The *Purpose and Need* section provides information about the following topics:

- Purpose
- Critical Needs
- Key Concerns

Purpose

The purpose of the proposed project is to accommodate growing traffic volumes; resolve safety conflicts between the highway's dual purpose of transporting regional tourist and truck traffic and transporting local traffic; and provide access for local roadways and land use. Specifically, this project has been proposed to:

- Improve safety for local and regional traffic needs
- Accommodate capacity needs for local and regional travelers over the next 20 years and beyond using prudent planning principles
- Accommodate the variety of transportation needs along US 212, including local circulation and access for residents with existing access needs
- Support mobility of goods and people connecting Interstate 90 (I-90) with the rural communities of Silesia, Rockvale, Red Lodge, and Bridger, and with destinations in Wyoming

Critical Needs

The following critical needs for improving the US 212 transportation corridor between Rockvale and Laurel have been identified:

- There is conflict between local and regional traffic needs, including slow versus faster travel desires, sightseeing versus destination-oriented driving, and frequent stops versus through connectivity with other portions of the National Highway System (NHS).
- Accidents are most frequently located at points of access (such as driveways and local roadways connecting to US 212) and stationary objects.
- Accident rates involving truck traffic are more than double the state average for similar roadways in Montana.
- The existing two-lane US 212 is undersized for carrying anticipated traffic volumes in the next 20 years and beyond.
- The distance for storing vehicles stopped between US 212 and railroad crossings (vehicle storage distance) is inadequate.
- Residential development and other physical features constrain the ability to widen the existing right-of-way within the project area.

Key Concerns

These US 212 roadway needs have been translated into four key concerns: safety, capacity, mobility, and access management/access control. These concerns, which are incorporated into the project purpose, are summarized below.

- **Safety.** While both the number and severity of accidents for vehicles of all types are less than the statewide averages, the truck-involved accident rate is more than 2.7 times the statewide average. The northern portion of the existing highway experienced a greater number and frequency of accidents.
- **Capacity.** It is estimated that transportation demand will increase by approximately 125 percent between 2000 and 2025. For the year 2025, traffic volumes have been forecasted as 11,590 vehicles per day (vpd) at the junction of US 212 and US 310 at Rockvale and 13,250 vpd at the county line. A design hourly volume of 1,590 vehicles per hour (vph) has been projected for the year 2025.

  Traffic operations are characterized by level of service (LOS). The Transportation Research Board's (TRB's) labels of A through F (TRB, 2000) are used, with LOS A as most optimal. In other words, LOS A provides the highest level of service.

  Delays from speed reductions are commonly due to a number of factors. These include types and volume of traffic, turning movement restrictions, and/or passing sight distances.

A two-lane typical section configuration with intermittent passing lanes was used to analyze the capacity of, and potential delays on, the existing roadway and a new alignment. The analyses showed LOS C in 2005 for the existing and new alignments. By 2025, the northern portion of the existing roadway would be expected to drop to LOS D and the southern portion of the existing roadway and the new alignment would be expected to remain at LOS C, with higher delays due to increased traffic volumes.

The LOS C and LOS D ratings do not meet MDT capacity standards for this roadway type. A principal objective of this proposed project is to enhance and/or improve these conditions to the optimum of LOS B.

- **Mobility.** Mobility is the ability to maintain a normal operating speed and maneuver to one's destination without interference from other traffic. US 212 is only two lanes with narrow shoulders, poor vertical and horizontal alignments, and a narrow railroad underpass. In addition, 47 percent of this project area is considered a no-passing zone. For two-lane roadways, vehicles traveling in a single direction are often inhibited by the lack of passing opportunities and the volume of opposing traffic. Little traffic is required to limit traffic mobility on two-lane roadways such as US 212.
- **Access Management/Access Control.** Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. The purpose of access management is to improve safety, preserve function and mobility, and handle existing and future accesses in a consistent manner.

  Access management would be an integral part of the design and operation of the build alternatives. During the design phase of the proposed project, access management guidelines and an access management plan would be developed after consulting with property owners. At the end of the design phase, but before right-of-way acquisition, a resolution designating the highway as a controlled-access highway would be submitted to the Montana Transportation Commission for approval. Accesses would then be managed in accordance with the Commission's access control resolution and the access management guidelines and plan.

  There are approximately 103 access points, most of which are residential in nature. Nineteen access points cross the railroad tracks, three of which are multiple-use roads. MDT has determined a strong correlation between accidents and the concentrated areas of access points. Highways with positive control of access to and from abutting properties are recognized as operationally superior and safer than facilities with uncontrolled access.

Project Description

The *Project Description* section provides information about the following topics:

- Project Location
- Alternatives Reviewed and Preferred Alternative

Project Location

On a regional scale, US 212 is the main northeasterly highway for the Red Lodge and Yellowstone Park recreational areas. It is a critical link in the NHS.

The project is located in Carbon and Yellowstone counties in south-central Montana southwest of Billings. US 212's presently traveled way (PTW), which is located in the Clarks Fork Yellowstone River valley, lies between the Yellowstone River and the Clarks Fork Yellowstone River. The topography is generally flat in the valley bottom, with steep bluffs to the west rising to a plateau that extends to bluffs overlooking the Yellowstone River valley. The topography rises more gently to the east from the valley bottom of the Clarks Fork Yellowstone River.

Alternatives Reviewed and Preferred Alternative

Several alternatives, including a No Build Alternative, were reviewed. These alternatives begin near US 310's junction with US 212, progress northeast, and end at the connection to the existing four-lane highway at approximately RP 52.9, which is south of the bridge crossing the Yellowstone River. The alternative that FHWA and MDT prefer (Alternative 5B—Combined West Bench, the Preferred Alternative) would be to reconstruct US 212's current two-lane route to a four-lane divided highway. The Preferred Alternative reconstruction would be on a new alignment northwest of and partly parallel to the former PTW. The junction with US 310 in Rockvale would also be reconstructed to connect with US 212's new roadway. The proposed facility would be designed and managed with the intent to provide access to public roads and to provide reasonable and appropriate access to abutting property.

Construction Phasing, Cost Estimate, and Funding

MDT and FHWA anticipate phasing this proposed project for design and construction. The reasoning for the phasing allows for the construction of smaller projects with independent utility and available funding. The construction phasing, cost estimate, and funding listed below reflect MDT's and FHWA's current plan. This plan might change if funding changes or area(s) of higher need are identified.

Construction Phasing

The phasing for construction is dependent on the area(s) of highest need. Presently, the area of highest need is the replacement of the railroad underpass at the northern end of the project. A new, grade-separated overpass of the Burlington Northern Santa Fe (BNSF) Railway would be constructed that would tie back into the existing roadway. The phased design of the overpass would not prohibit the final design specified in this Final EIS. A two-lane structure could initially be built with the other two lanes being constructed at a later date.

The next phase anticipated for construction would be the intersection of US 212 and US 310 in Rockvale. This intersection would tie back into the existing US 310 roadway north to Laurel.

The new alignment between the intersection of US 212 and US 310 and the railroad overpass would be anticipated for construction by first completing a two-lane roadway between the two previously constructed end points.

The final project phasing would complete construction of the final two lanes, the additional bridge structure, and the interchange at the north end that would tie back into US 310. The sequencing of this additional work is unknown at this time.

Cost Estimate

The total construction cost estimate for the total project is $49.6 million. The anticipated construction estimate for the first phase, the BNSF Railway overpass, is $10 million.

Funding

The total funding package is unknown at this time. The phases of the proposed project would move forward as funding became available. The first phase of the project, the BNSF Railway overpass, is anticipated to be funded using a combination of federal and state funds, which could include National Highway, Safety, Bridge, and other available funding sources.

Project History

The *Project History* section provides information about the following topics:

- Project Initiation
- Public Coordination

Project Initiation

This project was initially proposed by MDT and approved by the Montana Transportation Commission in 1998. The proposed project was included in Amendment 1 of the 1999 Statewide Transportation Improvement Program, which indicated its construction would occur after Fiscal Year 2007. The Notice of Intent to prepare an EIS was published in the *Federal Register* (FR) on July 14, 2000 (65 FR 136).

Public Coordination

A number of public scoping and information meetings were held to discuss this project. The initial public scoping meeting was held in Laurel, Montana, on August 30, 2000, to identify corridors within which possible alternative alignments could be located. Follow-up public scoping meetings were held on November 13, 2000, and December 12, 2001, also in Laurel. Specific potential alternative alignments were presented to the public at the November 13,

2000, meeting. Public input was used to recommend alternative alignment modifications. The final alternatives to be evaluated in the EIS were presented to the public at the December 12, 2001, meeting. Subsequent evaluation and public input identified other issues. In addition, new data became available. To address these issues and incorporate the new data, several modifications of the alternative alignments were prepared and evaluated.

Alternatives

The Alternatives section provides information about the following topics:

- Development of Alternatives
- Analyses Conducted
- Future Status of the Presently Traveled Way
- Engineering and Other Aspects of the Alternatives Considered
- No Build Alternative
- Build Alternatives
- Alternatives not Carried Forward
- Typical Sections and Right-of-Way

Development of Alternatives

The alternatives presented in the Draft EIS (MDT and FHWA, 2007) were the result of a vigorous public involvement process involving members of the general public, public interest groups, and state and federal regulatory and management agencies. A variety of alternative alignments were explored before developing the six build alternatives that were presented in Chapters 2 through 4 of the Draft EIS, and presented along with the Preferred Alternative in this Final EIS. Based on the preliminary engineering analysis and the environmental evaluation presented in the Draft EIS, as well as on public comments, Alternative 5B—Combined West Bench has been identified as the Preferred Alternative. A No Build Alternative is included as a basis for comparing impacts related to the build alternatives. Other alternatives with either fewer lanes (such as two or three lanes) or different four-lane configurations were not reviewed in detail (see the *Alternatives Not Carried Forward* section of this *Summary*). The alternatives presented in this Final EIS, including the No Build Alternative ("Existing Roadway"), are shown on Figure S-1. The dimensions used in this document are based on conceptual design and are subject to change as the design progresses.

Analyses Conducted

Several detailed analyses were conducted while developing the typical section configuration for the build alternatives. Analyses of the traffic operations determined that the operations issues of capacity, mobility, safety, and access management/access control could not be improved within the existing highway network. A four-lane facility is necessary to achieve acceptable traffic operations. Research performed by FHWA (1999) on safety effects of conversion of two-lane roadways to four-lane roadways supports this conclusion. This research found that converting two-lane rural highways to median-divided, four-lane

facilities reduced accident rates by 40 to 60 percent compared to the undivided two-lane highways. The benefits of converting two-lane rural highways to median-divided, four-lane facilities are sensitive to traffic volume. Also, on divided highways, it has been shown that non-traversable medians yield additional safety benefits. In summary, a four-lane, median-divided, access-controlled highway is recommended to provide the highest level of safety and operational success (capacity, mobility, and access management/access control) for US 212.

Future Status of the Presently Traveled Way

Most of the PTW, excluding the existing railroad underpass (which would be eliminated), would remain, maintaining local access. Each build alternative would provide new access connections on a new alignment.

Engineering and Other Aspects of the Alternatives Considered

Table S-1 summarizes information about engineering and other aspects of the alternatives considered.

No Build Alternative

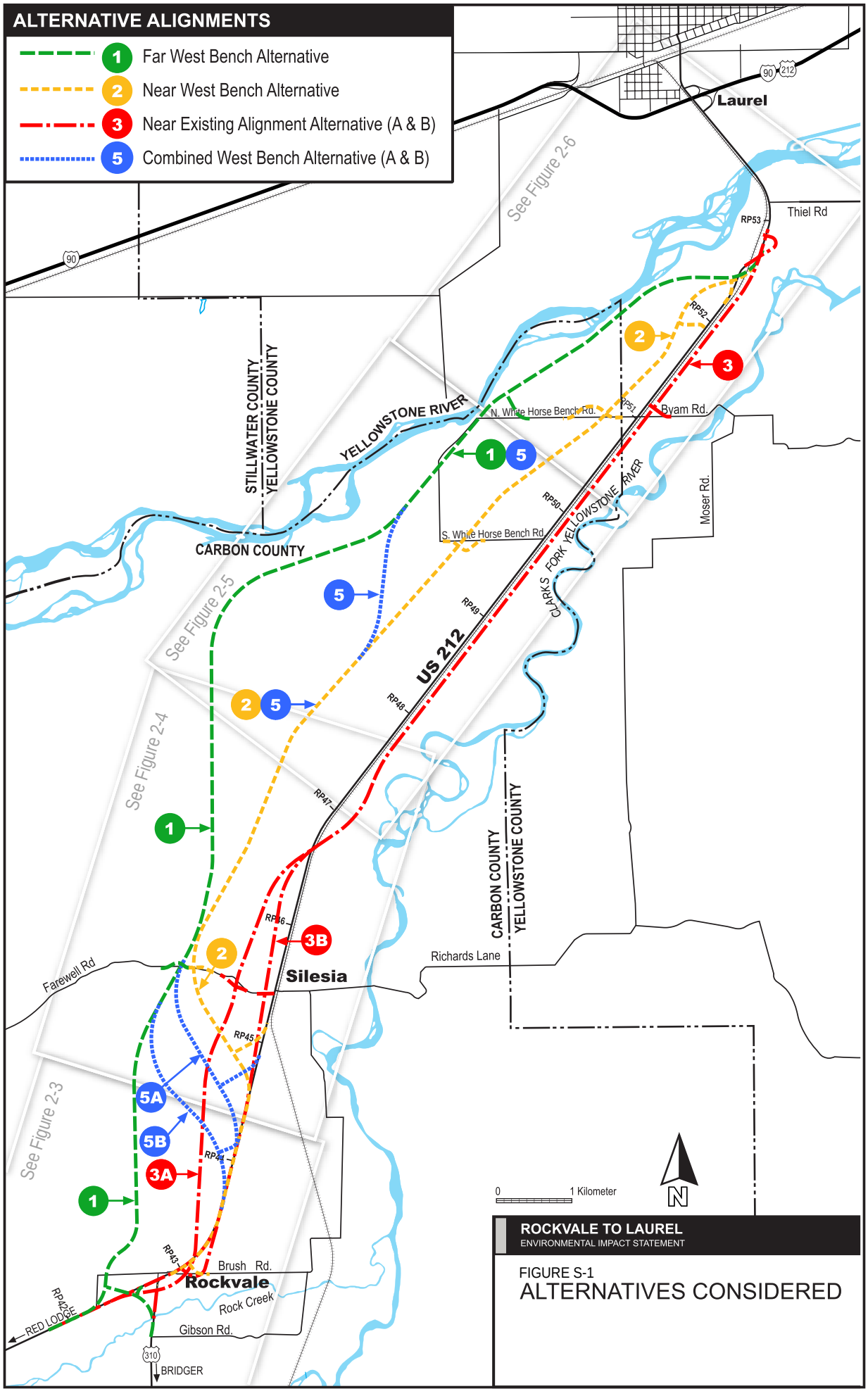
The No Build Alternative is the current alignment and two-lane configuration of the PTW. Physical, operational, or safety improvements on the current alignment would either not occur or be very limited. However, the PTW would still be maintained. The No Build Alternative was used as a basis for comparing impacts related to this proposed project's build alternatives. The No Build Alternative ("US 212") is shown on Figure S-1.

Build Alternatives

The alignments and some access issues related to the six build alternatives are discussed in the following sections. Figure S-1 shows the alignments for these alternatives, which include:

- Alternative 1—Far West Bench
- Alternative 2—Near West Bench
- Alternative 3–Near Existing Alignment (two variations)
  - Alternative 3A—Deviates north at RP 43.1 then parallels existing alignment
  - Alternative 3B—Deviates north at RP 44.4 then parallels PTW (closest to existing alignment)
- Alternative 5—Combined West Bench (two variations)
  - Alternative 5A—Departs US 212 at RP 44.1
  - Alternative 5B (Preferred)—Departs US 212 at RP 43.7

Alternative 4—East Bench was dropped from detailed analysis (see the *Alternatives Not Carried Forward* section of this *Summary*).


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Laurel
90
212
See Figure 2-6
Thiel Rd
RP53
RP52
RP51
Byam Rd.
N. White Horse Bench Rd.
YELLOWSTONE RIVER
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
S. White Horse Bench Rd.
RP50
CLARK'S FORK YELLOWSTONE RIVER
Moser Rd.
See Figure 2-5
RP49
US 212
RP48
See Figure 2-4
RP47
CARBON COUNTY
YELLOWSTONE COUNTY
RP46
Richards Lane
Farewell Rd
Silesia
RP45
See Figure 2-3
5A
5B
3A
3B
RP44
RP43
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
RP42
RED LODGE
310
BRIDGER
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE S-1
ALTERNATIVES CONSIDERED

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TABLE S-1
Summary Information about Engineering and Other Aspects of the Alternatives Considered[a]

Comparison Area	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Length of Roadway	16.4 km (10.2 mi)	19.2 km (11.9 mi)	17.7 km (11.0 mi)	17.6 km (10.9 mi)	16.9 km (10.5 mi)	18.2 km (11.3 mi)	18.4 km (11.4 mi)
Relationship to the PTW							
Where it departs from the PTW	No change	RP 42.6	RP 44.5	RP 43.1	RP 44.4	RP 44.1	RP 43.7
Where it rejoins the PTW	No change	RP 52.7	RP 52.4	RP 52.7	RP 46.6	RP 52.7	RP 52.7
Traffic							
Level of Service (LOS)	E	A	A	A	A	A	A
Local traffic	No change	Would carry the least local traffic	Would have moderate local traffic interaction	Would carry the most local traffic	Would carry the most local traffic	Would have moderate local traffic interaction	Would have moderate local traffic interaction
Local Circulation and Access							
General	No change	<---------- No general advantage between build alternatives. ---------->					
Access requirements	No change	Generally, no new access to properties from the PTW required	Generally, no new access to properties from the PTW required	The PTW would become a frontage road providing access to properties	The PTW would become a frontage road providing access to properties	Generally, no new access to properties from the PTW required	Generally, no new access to properties from the PTW required
Access to Rockvale	No change	Poor	Good	Fair	Good	Good	Good
Access points (approximate)	103	25	34	38	39	36	35
Safety[b]							
Exposure to conflict points (% of existing)	No change	40%	53%	66%	65%	55%	53%
Exposure to existing US 212 conditions	No change	19%	14%	9%	8%	17%	18%
Railroad crossings[c]	No change	No Change	No Change	Decreased Safety	Decreased Safety	No Change	No Change
Typical Section	No change to existing roadway that is 19.2-m (64-ft) wide	For most of the highway corridor, the 11-meter Median Typical Section (100-ft Section) is recommended. In built-up areas such as Rockvale and Laurel, the 5-meter Median Typical Section (80-ft Section) is recommended.					
Sharp curves (7-8% superelevation range)	2 curves	5 curves	4 curves	3 curves	1 curve	2 curves	2 curves
Vertical curves at 100 kilometers per hour (km/h) (60 miles per hour [mph]) design speed	0 curves	1 curve	1 curve	0 curves	0 curves	1 curve	1 curve
Grades over 3% (100 km/h [60 mph] design speed)	2 grades	8 grades	3 grades	0 grades	0 grades	6 grades	7 grades

TABLE S-1
Summary Information about Engineering and Other Aspects of the Alternatives Considered[a]

Comparison Area	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Long steep grades (16 km/h [10 mph] speed reduction)	0 grades	3 grades	0 grades	0 grades	0 grades	1 grade	3 grades
Grade separations	No change	2	2	4	4	2	2
Geotechnical Considerations[e]							
Earthwork required	No change	1st (Most)	3rd (~84% of Alt. 1)	5th (45% of Alt. 1)	5th (45% of Alt. 1)	4th (~75% of Alt. 1)	2nd (~95% of Alt. 1)
Length of concerns	NA	33.2 km (20.6 mi)	11.6 km (7.2 mi)	7.5 km (4.7 mi)	7.5 km (4.7 mi)	18.1 km (11.2 mi)	18.1 km (11.2 mi)
Intersections							
With roads	No change	5	6	4	3	6	6
With railroad crossing	No change	0	0	4	4	0	0
Crossing Requirements							
Overpass over railroad tracks (bridge)	No change	2	2	2	2	2	2
Overpass over PTW (bridge)	No change	0	0	2	2	0	0
Bridge over water body	No change	1 (Rock Creek)	0	0	0	0	0
Culvert over water body	No change	4	7	7	4	6	6
Railroad and Utility Conflicts	None	1 railroad crossing	1 railroad crossing, gas line	1 railroad crossing, electrical substation displaced	1 railroad crossing, electrical substation displaced	1 railroad crossing, gas line	1 railroad crossing, gas line
Public Comment[f]							
Comments FOR / AGAINST (percentage)	Few comments	73% / 8%	28% / 58%	23% / 56%	23% / 56%	See Note f	
Construction Cost Estimate (in 2012 dollars)	0	$49.6 million	$45.6 million	$49.9 million (includes $1 million to relocate an electrical substation)	$46.0 million (includes $1 million to relocate an electrical substation)	$47.5 million	$49.6 million

[a]These values are based on preliminary (approximately 30%) design and may change as the design process continues.

[b]Less exposure to approaches (conflict points) and railroad crossings is considered more desirable, as more exposure indicates a higher potential for accidents.

[c]Pertains to both the existing US 212 and the alternative.

[d]Sharp horizontal curves, lower design speed vertical curves, steep grades, and long steep grades that reduce truck speed significantly are less desirable.

[e]Greater length equates to more geotechnical concerns on the specific alternative.

[f]Comments not gathered from general public. Affected landowners on the south end of the project area prefer Alternative 5B over Alternative 5A by a ratio of 5 to 1.

Alternative 1—Far West Bench

The Alternative 1 alignment would:

- Depart the PTW nearly 1.2 km (0.75 mi) west-southwesterly from Rockvale.
- Curve onto a northerly bearing and pass through irrigated cropland westerly of Rockvale, ascending the hills northerly from there.
- Continue northerly over rolling rangelands.
- Intersect the Farewell Road westerly of Silesia.
- Cross Farewell Creek upstream from a small reservoir.
- Proceed northerly through rangelands and wheat fields to the bluffs along the Yellowstone Valley's southerly side.
- Turn northeasterly to follow those bluffs through more wheat fields and irrigated croplands onto the White Horse Bench.
- Intersect White Horse Bench Road north of the old White Horse School.
- Continue northeasterly through irrigated croplands on the Yellowstone Valley's southerly bluffs to within approximately 0.5 km (0.3 mi) northerly of the Krug (Gravel) Pit.
- Turn easterly, crossing both the PTW near RP 52.4 and the railroad tracks.
- Turn northerly through more croplands, joining the PTW at approximately RP 52.7.

Drivers currently access the properties affected by Alternatives 1, 2, 5A, and 5B (preferred) from public roads. Those public roads would have new intersection crossings with the proposed alignments of US 212, and new access to individual properties from US 212 would generally not be required. Access to most local properties could be made from the PTW, which would remain in place. Each build alternative would require approximately five field access points. These new access points would be in addition to crossing intersections at existing public roads.

Alternative 2—Near West Bench

The Alternative 2 alignment would:

- Follow the PTW from Rockvale northerly to approximately RP 44.5.
- Leave the PTW, turning northwesterly through pastureland.
- Intersect Farewell Road approximately 1.1 km (0.7 mi) westerly of Silesia.
- Cross Farewell Creek upstream from a small reservoir.
- Proceed northeasterly through rangelands and wheat fields.
- Intersect the South White Horse Bench Road westerly of the PTW.
- Continue northeasterly through irrigated croplands.

- Intersect the North White Horse Bench Road westerly of the PTW.
- Remain heading northeasterly into Yellowstone County.
- Cross the Mason Canal southerly of the Krug (Gravel) Pit.
- Turn northerly to generally parallel the Mason Canal's southeasterly (right) bank through irrigated croplands.
- Turn east-northeasterly onto the Alternative 1 alignment, crossing the PTW near RP 52.4.
- Remain on the same proposed alignment as Alternative 1.

Access issues would be the same as those discussed for Alternative 1.

Alternative 3—Near Existing Alignment

Alternative 3 has two potential alignments, Alternatives 3A and 3B, that are discussed in the following sections.

Alternative 3A—Near Existing Alignment. The Alternative 3A alignment would:

- Leave the PTW approximately 0.4 km (0.25 mi) southwesterly from its present junction with US 310.
- Proceed east-northeasterly through irrigated croplands, intersecting US 310 southerly of Rockvale near RP 42.7.
- Turn northerly to cross the PTW close to RP 43.1.
- Cross the Smith Ditch.
- Continue northerly through irrigated croplands and pasturelands between the Smith Ditch and the Free Silver Ditch.
- Bend slightly easterly and intersect Farewell Road west of Silesia.
- Return to a more northerly bearing, roughly paralleling the PTW just over 0.5 km (0.3 mi) easterly.
- Bend northeasterly to cross the White Horse Canal.
- Traverse the PTW (near RP 46.6), the railroad tracks, and the Mason Canal.
- Turn northerly, paralleling the southeasterly right-of-way of the railroad.
- Match the proposed alignments of both Alternatives 1 and 2 soon after crossing the railroad tracks.
- Join the PTW at approximately RP 52.7.

The north 9.5 km (5.9 mi) of Alternatives 3A and 3B would be located northeasterly and southeasterly of, and parallel to, the railroad tracks. This would effectively limit access from the west to public roads that would continue to cross the railroad tracks. The PTW would become a frontage road serving other access points from the west.

An examination of the number and location of existing access points east of the railroad tracks suggests that it would be reasonable to provide access to the new US 212 alignment at most existing access locations. Only two existing locations have spacing of less than 0.4 km (0.25 mi), and these could be eliminated in final planning. The number of access points from the east would be approximately four per mile. This would be acceptable given that the access points generally serve single homesteads. It would be expected, however, that future development of increased numbers of homes and businesses would prompt the development of local roadways that would ultimately reduce the number of access points.

Both Alternatives 3A and 3B would need existing access consolidated from the beginning of their alignment to southwesterly of RP 46.5 on the PTW. Approximately eight access locations are present on each side of the PTW in the southwesterly 3.2 km (2.0 mi) on the proposed project's portion of US 212. Therefore, it would be necessary to realign and/or eliminate several access connections and to determine if a frontage road would be desirable.

Alternative 3B—Near Existing Alignment. The Alternative 3B alignment would:

- Remain on the PTW to approximately RP 44.4.
- Diverge from the PTW and run northerly through pasturelands.
- Cross the Farewell Road immediately west of Silesia.
- Continue through pasturelands and irrigated croplands until it joins Alternative 3A, which would occur southwesterly of where Alternative 3A crosses the PTW at approximately RP 46.6.
- Use Alternative 3A's alignment for the remainder of Alternative 3B's route.

Access issues would be the same as those discussed for Alternative 3A.

Alternative 5—Combined West Bench

Alternative 5 has two potential alignments, Alternatives 5A and 5B (preferred), that are discussed in the following sections.

Alternative 5A—Combined West Bench. The Alternative 5A alignment would:

- Use the same alignment as Alternative 3B on the PTW to approximately RP 44.1.
- Turn northwesterly, crossing irrigated croplands and pasturelands.
- Join Alternative 1 southerly of where Alternative 1 intersects Farewell Road.
- Continue north-northeasterly on Alternative 2's proposed route.
- Turn northerly in the S.E. 1/4 of Section 1 in Township 3 South, Range 23 East.
- Rejoin Alternative 1 in the S.W. 1/4 of Section 31 in Township 2 South, Range 24 East, Montana Principal Meridian, which would be approximately 0.45 km (0.28 mi) northwesterly from the old White Horse School site.

- Continue on Alternative 1's alignment to the proposed project's northeasterly end near RP 52.7 on the PTW.

Access issues would be the same as those discussed for Alternative 1.

Alternative 5B—Combined West Bench (Preferred). The Alternative 5B (preferred) alignment would:

- Use the same alignment as Alternative 3B on the PTW to approximately RP 43.7.
- Leave the PTW and turn northwesterly through irrigated farmland.
- Turn northeasterly and briefly join Alternative 1 before it intersects Farewell Road west of Silesia.
- From its intersection with Farewell Road, follow Alternative 5A.

Access issues would be the same as those discussed for Alternative 5A.

Alternatives Not Carried Forward

In the development of build alternatives, several design aspects were analyzed to determine their appropriateness related to the proposed project's objectives. The following alternatives were either initially developed and presented to the public or reviewed but subsequently dropped from further consideration on this proposed project:

- **Typical Sections with Two Lanes and Three Lanes (Two-Lane with Passing Lanes).** These typical sections were dismissed because they neither meet the safety needs for local and regional traffic nor accommodate the projected capacity needs for local and regional travelers over the next 20 years, which are both objectives of the proposed project's Purpose and Need.
- **Typical Sections Without Medians.** The PTW requires a median to satisfy safety needs. Therefore, typical sections without medians were dismissed.
- **Transportation System Management and Transportation Demand Management (TSM/TDM) Alternative.** This alternative for reducing demand through methods of transport (mobility) and/or physical changes (system) neither satisfies the safety needs for local and regional traffic nor accommodates projected capacity needs. The TSM/TDM Alternative was removed from further consideration.
- **Alternative 4—East Bench.** This alternative proposed a four-lane divided route running east-northeasterly from Alternative 3A's projected junction with US 310 southerly of Rockvale. It would have paralleled the existing alignment southeasterly of and above the Clarks Fork Yellowstone River on the opposite bank. The alignment would have crossed the Clarks Fork Yellowstone River twice. This alternative lacked agency and public support. Riverine and wetland environments from the river crossings would have been affected by this alternative without providing better transportation service than the other

build alternatives. Alternative 4 was considered; however, it was not carried forward for complete analysis.

- **Existing Alignment.** The existing alignment does not meet the current geometric standards of MDT for this type of highway (MDT, 2004). It is located between an existing railroad right-of-way on one side and residential and agricultural properties on the other. It physically cannot be expanded to a four-lane highway on its existing alignment without severe right-of-way and railroad impacts. Expansion to accommodate a four-lane highway toward the railroad would require the railroad to be relocated in order to maintain minimum right-of-way width for the railroad, and would be cost-prohibitive. Expansion in the opposite direction, toward the residential and agricultural properties, would require additional right-of-way that would affect 47 residential properties and 1 business property, including 25 residential relocations. Therefore, the existing alignment does not meet the Purpose and Need of the proposed project, and was not carried forward.

Typical Sections and Right-of-Way

The 11-meter Median Typical Section (100-ft Section), which is a four-lane facility with a depressed median, is recommended for most of the highway corridor. Each lane would be 3.6-m (12-ft) wide. There would also be a preference for 2.4-m (8-ft)-wide outside shoulders, and an 11-m (36-ft)-wide depressed median. The 5-meter Median Typical Section (80-ft Section) is recommended in built-up areas such as Rockvale and Laurel. The typical right-of-way for both sections (impact area or footprint) would be approximately 80 meters (m) (260 feet [ft]) wide. The discussion of build alternatives in this Final EIS is based on the preferred typical section (11-meter Median Typical Section).

Affected Environment

The existing social, economic, and environmental conditions within the study area are described in *Chapter 3, Affected Environment*. The following resource areas are discussed: Land Use; Farmlands; Social Conditions; Transportation Right-of-Way and Relocations; Economic Conditions; Environmental Justice; Pedestrian and Bicycle Considerations; Air Quality; Noise; Water Flow and Quality; Wetlands; Water Bodies and Aquatic Resources; Vegetation; Wildlife Resources; Threatened and Endangered Species and State Species of Concern; Floodplains; Cultural Resources; Hazardous Materials; Visual Resources; Energy Consumption; and Geology and Soils.

Environmental Consequences

Chapter 4, Environmental Consequences, discusses expected environmental effects, both positive and adverse, and presents mitigation measures to compensate for potential adverse effects. Table S-3 (following the *Major Unresolved Issues* section of this *Summary*) summarizes and compares the environmental consequences of the No Build Alternative and the build alternatives. Some notable items from that summary include:

- **Farmland.** Construction of a build alternative would convert U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)-classified suitable

farmlands (that is, Prime if Irrigated Farmland and Farmland of Statewide Importance) to non-agricultural uses. Using preliminary design footprints of the roadway and related facilities, impacts range from approximately 75.80 hectares (ha) (187.30 acres [ac]) of NRCS-classified suitable farmlands with Alternative 3A to approximately 108.17 ha (267.28 ac) with Alternative 2.

- **Relocations.** The build alternatives would likely require residential relocations, ranging from 12 houses with Alternative 3A and 11 residences with Alternatives 2 and 3B to 2 residences with Alternatives 1 and 5A. Additionally, with Alternative 3A, two businesses would likely be relocated, and with Alternative 3B, one business would likely be relocated. With the build alternatives, buildings on between one and three farms would likely need to be relocated. With Alternative 5B (preferred), five residences would likely be relocated, one of which is a farm house.

- **Noise.** The build alternatives would increase transportation-related noise levels. Impacts by the design year (2030) are predicted to range from 5 noise-sensitive receptors representing 5 residences (affected with Alternative 1) to 20 noise-sensitive receptors representing 34 residences (affected with Alternative 2). Alternative 5B (preferred) would impact 5 noise-sensitive receptors representing 9 residences.

  These impacts are immitigable for residences that already exist in the project corridor. Proposed developments along the alignment, once it is finally chosen, should be designed to minimize traffic noise impacts. See MDT's new noise and planning guide, *Growing Neighborhoods in Growing Corridors: Land Use Planning for Highway Noise* (MDT, 2008). The report can be found at http://www.mdt.mt.gov/research/docs/research_proj/noise_plan/final_report.pdf.

- **Wetlands.** Using preliminary design footprints of the roadway and related facilities, total wetland (jurisdictional and non-jurisdictional) impacts range from approximately 0.5 ha (1.5 ac) (Alternative 1) to 1.1 ha (2.5 ac) (Alternative 3A). The impacts on jurisdictional wetlands using preliminary design footprints of the roadway and related facilities range from approximately 0.5 ha (1.5 ac) (Alternative 1) to 1.0 ha (2.5 ac) (Alternative 3A). Alternative 5B (preferred) is predicted to impact approximately 0.6 ha (1.5 ac) of wetlands, of which 0.6 ha (1.5 ac) would be jurisdictional wetlands.

- **Irrigation Systems (Canals).** Alternative 1 would have the least effect on irrigation systems (canals), affecting the Free Silver Ditch, White Horse Canal, and Mason Canal. The other build alternatives would involve those three irrigation systems and an additional system (Smith Ditch).

- **Stream Crossings.** With Alternative 1, two streams would be crossed (one new crossing, one existing crossing). With the other build alternatives, one stream would be crossed (a new crossing).

Mitigation

General mitigation measures discussed in *Chapter 4, Environmental Consequences,* would compensate for direct, indirect, and cumulative impacts that might result from implementation of a build alternative. Table S-4, Summary of Operations-Related Mitigation Measures, and Table S-5, Summary of Construction-Related Mitigation Measures (at the end of this *Summary* section) list the mitigation measures presented in *Chapter 4, Environmental Consequences*.

Cumulative Impacts

MDT has identified various transportation projects that have the potential for interaction with the Rockvale to Laurel project. These projects were considered in the cumulative impact assessment. Ongoing agricultural activities and rural development would also interact with the transportation projects. Residential subdivisions that are being constructed in the project area might contribute to cumulative effects. No other developments or planned developments that might affect or be affected by the proposed expansion project have been identified in the City of Laurel, Carbon County, or Yellowstone County.

The proposed MDT projects are summarized in Table S-2 and described in *Section 4.25, Cumulative Impacts.*

Permits and Other Governmental Actions

Implementation of a build alternative might include, but not be limited to, one or more of the following federal actions:

- Issuance of a Section 404 of the Clean Water Act (CWA) Permit by the U.S. Army Corps of Engineers (COE) for proposed fill impacts to jurisdictional wetlands and Waters of the U.S. For further information, see the CWA Section 404(b)(1) analysis of the proposed project in *Appendix E*.
- Approval for floodplain encroachments from the Federal Emergency Management Agency (FEMA), which are administered by each county.
- Coordination with the U.S. Fish and Wildlife Service (FWS) concerning threatened and endangered species.

TABLE S-2
Proposed Montana Department of Transportation Projects near the Rockvale to Laurel Project Area

Project	Description	Location	Relationship to Project Area	Potential Start Date
Corridor Study–Red Lodge North	Reconstruct US 212	RP 70 to RP 90	Approximately 19.3 km (12 mi) from project area	2010
Red Lodge–Northwest	Reconstruct Montana State Highway 78	RP 0 to RP 5.1	About 53.1 km (33 mi) from project area	2012
Bridger–South	Rehabilitate a portion of US 310 located south of Bridger along Bridger Jack Creek, a tributary to the Clarks Fork Yellowstone River	RP 12.6 to RP 25.676	Within the Clarks Fork Yellowstone River watershed	2012
Wyoming Line–Belfry	Reconstruct MT 72 paralleling the Clarks Fork Yellowstone River between the Wyoming State Line and the Town of Belfry	RP 0 to RP 10.54	Within the Clarks Fork Yellowstone River watershed	Completed
Belfry–North	Reconstruct MT 72 between Belfry and US 310 to the south	RP 10.54 to RP 21.42	Approximately 16.3 km (10.1 mi)	2011
Clarks Fork–Fromberg	Replace a three-span, single-lane bridge over the Clarks Fork Yellowstone River on Carbon County Local Route 307 (locally known as East River Street)	1 km (0.6 mi) east of Fromberg	Within the Clarks Fork Yellowstone River watershed	Completed
8th Ave-Main to 9th-Laurel	Reconstruct 8th Avenue in the City of Laurel	In Laurel	In Laurel	2012
Bridger–Fromberg	Rehabilitate surface on MT 72 from RP 26.2 to RP 33.80	RP 26.2 to RP 33.80	In proximity to Rock Creek	2010

Implementation of a build alternative might include, but not be limited to, one or more of the following state actions:

- Compliance with the water quality provisions of MCA 75-5-308 for Section 318 Authorizations and the stream protection provisions of MCA 87-5-501 through 509.
- A Stream Protection Act Notification (SPA 124) authorization from Montana Fish, Wildlife and Parks (MFWP).
- A Section 401 of the CWA certification from the Montana Department of Environmental Quality (MDEQ).
- A Section 402/Montana Pollutant Discharge Elimination System (MPDES) authorization from MDEQ.
- A water use permit from the Montana Department of Natural Resources and Conservation.
- Coordination with MFWP concerning state species of concern.

Major Unresolved Issues

No major unresolved issues were identified during development of this Final EIS.

TABLE S-3
Summary of Impacts[a]

Resource Area[b]	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
1. LAND USE							
Consistency with Local Plans							
Carbon County	No	Partial	No	Yes	Yes	Partial	Yes
Yellowstone County	No	Yes	No	Yes	Yes	Yes	Yes
City of Laurel	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. FARMLAND DISPLACEMENT							
Prime farmland if irrigated	None	54.00 ha (133.44 ac)	43.17 ha (106.68 ac)	41.79 ha (103.27 ac)	57.67 ha (142.50 ac)	54.48 ha (134.61 ac)	66.05 ha (163.22 ac)
Farmland of Statewide Importance	None	33.60 ha (83.03 ac)	64.99 ha (160.60 ac)	34.01 ha (84.03 ac)	34.76 ha (85.90 ac)	49.20 ha (121.57 ac)	34.00 ha (84.01 ac)
Irrigated agricultural habitat (including pasture/alfalfa)	None	28.00 ha (69.2 ac)	21.16 ha (52.28 ac)	46.83 ha (115.72 ac)	29.20 ha (72.16 ac)	38.36 ha (94.78 ac)	35.12 ha (86.78 ac)
Dryland agricultural habitat (including pasture)	None	61.53 ha (152.05 ac)	44.40 ha (109.72 ac)	0 ha	0 ha	39.21 ha (96.90 ac)	45.57 ha (112.60 ac)
3. SOCIAL CONDITIONS							
Transportation Services							
Safety	Worsen	Improve	Improve	Improve	Improve	Improve	Improve
Level of service (LOS)	LOS E	LOS B	LOS B	LOS B	LOS B	LOS B	LOS B
Access	No change	More restricted	More restricted	More restricted	More restricted	More restricted	More restricted
4. TRANSPORTATION RIGHT-OF-WAY AND RELOCATIONS							
Number of houses impacted	No change	2	11	12	11	2	5[d]
Number of farmsteads	No change	1	1	2	3	1	1
Number of businesses impacted	No change	0	0	2	1	0	0
5. ECONOMIC CONDITIONS							
Loss in property tax ($/yr)	No change	$2,300	$2,300	$10,160	$10,700	$8,867	$10,793
Number of local businesses with a potential decline in patronage	No change	4	1	4	1	1	1

TABLE S-3
Summary of Impacts[a]

Resource Area[b]	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
6. ENVIRONMENTAL JUSTICE	No change	No change	No change	No change	No change	No change	No change
7. PEDESTRIAN AND BICYCLE CONSIDERATIONS	Worse over time	Improve	Improve	Improve	Improve	Improve	Improve
8. AIR QUALITY	Worse over time	Minor changes	Minor changes	Minor changes	Minor changes	Minor changes	Minor changes
9. NOISE							
Number of impacted noise receptors/residences by 2030	15/34	5/5	20/34	9/12	6/7	7/9	5/9
10. WATER FLOW AND QUALITY							
Number of domestic wells displaced	None	3	3	14	12	5	5
Number of public water supplies displaced	None	None	None	None	None	None	None
11. WETLANDS							
Impacted Area (Total)	None	0.5 ha (1.5 ac)	0.9 ha (2.0 ac)	1.1 ha (2.5 ac)	0.9 ha (2.0 ac)	0.6 ha (1.5 ac)	0.6 ha (1.5 ac)
Expected Jurisdictional	None	0.5 ha (1.5 ac)	0.8 ha (2.0 ac)	1.0 ha (2.5 ac)	0.8 ha (2.0 ac)	0.6 ha (1.5 ac)	0.6 ha (1.5 ac)
Expected Non-jurisdictional	None	<0.1 ha (<0.5 ac)	<0.1 ha (<0.5 ac)	<0.1 ha (<0.5 ac)	<0.1 ha (<0.5 ac)	<0.1 ha (<0.5 ac)	<0.1 ha (<0.5 ac)
12. WATER BODIES AND AQUATIC RESOURCES							
Water Resources	Stream and irrigation system crossings would not impact flows and did not affect selection of the Preferred Alternative						
13. VEGETATION	Same as existing	Direct habitat loss noted for wetlands and for altered remnant native uplands	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
14. WILDLIFE							
Road/traffic effects	Continuation of general road impacts such as vehicle collisions and noise disturbance	May increase wildlife mortality due to increased total roadway length, more traffic lanes, higher speeds, and continued use of the PTW (see *Section 4.14.2.1, Human Presence and Vehicle Use of the New Road)*	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1

TABLE S-3
Summary of Impacts[a]

Resource Area[b]	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Habitat loss	No additional habitat loss	Direct habitat loss noted for wetlands and for altered remnant native uplands	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Altered remnant native uplands	0 ha	35.4 ha (87.5 ac)	29.4 ha (72.6 ac)	0 ha	0 ha	17.2 ha (42.5 ac)	31.9 ha (78.8 ac)
Wildlife travel corridors	No change	Disruption of wildlife travel corridors in drainages	Same as Alternative 1	Minor disruption of identified wildlife travel corridors	Minor disruption of identified wildlife travel corridors	Disruption of wildlife travel corridors in drainages	Disruption of wildlife travel corridors in drainages
Indirect effects such as noise, disturbance, and habitat fragmentation	No change	Relatively high compared to the other build alternatives because it would pass through lands that have been least altered by human activity	Similar but less than with Alternative 1	Similar to Alternative 2	Similar to Alternative 2	Similar to Alternative 2	Similar to Alternative 2
15. THREATENED & ENDANGERED SPECIES AND STATE SPECIES OF CONCERN							
Wildlife	No effects	State species of concern or their habitat that might be affected by the build alternatives include the Baird's sparrow, barn owl, milk snake, the western hognose snake, the northern leopard frog, and the bald eagle	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
Plants	No effects	Same as No Build Alternative	Same as No Build Alternative	Same as No Build Alternative	Same as No Build Alternative	Same as No Build Alternative	Same as No Build Alternative
16. FLOODPLAINS							
Total Impacts	No change	3.5 ha (8.6 ac)	1.3 ha (3.2 ac)	12.4 ha (30.6 ac)	4.3 ha (10.6 ac)	1.3 ha (3.2 ac)	1.3 ha (3.2 ac)
Rock Creek	No change	2.4 ha (5.9 ac)	0.2 ha (0.5 ac)	8.3 ha (20.5 ac)	0.2 ha (0.5 ac)	0.2 ha (0.5 ac)	0.2 ha (0.5 ac)
Yellowstone River/Clarks Fork Yellowstone River	No change	1.1 ha (2.7 ac)	1.1 ha (2.7 ac)	4.1 ha (10.1 ac)	4.1 ha (10.1 ac)	1.1 ha (2.7 ac)	1.1 ha (2.7 ac)
17. CULTURAL RESOURCES							
Historic railroad tracks	No effect	No effect	No effect	No effect	No effect	No effect	No effect
Historic Free Silver Ditch	No effect	No effect	No effect	No effect	No effect	No effect	No effect
Historic house on Nutting Farmstead	No effect	No effect	No effect	No effect	No effect	No effect	No effect

TABLE S-3
Summary of Impacts[a]

Resource Area[b]	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
18. HAZARDOUS MATERIAL							
Displacement	No change	7 waste collection sites and 3 electric pole transformers	4 waste collection sites	Creosote-stained soil and electrical substation	Creosote-stained soil and electrical substation	7 waste collection sites and 2 electric pole transformers	7 waste collection sites and 2 electric pole transformers
19. VISUAL RESOURCES							
Alter character of landscape[c]	No Change	3.29 (Moderate)	3.07 (Moderate)	2.67 (Moderate-Low)	2.69 (Moderate-Low)	3.14 (Moderate)	3.20 (Moderate)
20. ENERGY CONSUMPTION							
		Impacts related to energy would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative					
21. GEOLOGY AND SOILS							
		Impacts related to geology and soils would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative					
22. CONSTRUCTION IMPACTS RELATED TO THE BUILD ALTERNATIVES			See Table S-5, Summary of Construction-Related Mitigation Measures				

[a]These values are based on conceptual design.

[b]The numbers used in this column correspond with the subsections in *Chapter 4, Environmental Consequences*.

[c]Visual Quality Rating (FHWA [1988] Methodology): 7 = High; 5 = Moderate; 1 = Low.

[d]One is abandoned and one is occupied rent-free.

Note: Acreage numbers are based on the 80-m (260-ft) planning footprint.

TABLE S-4
Summary of Operations-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
1. Land Use	Access to US 212.	All Build Alternatives	**Integrate local growth policies.** Where appropriate, local growth policies would be integrated into the strategies for managing access. Implementation of limited access control within the project corridor might result in relocating, combining, or eliminating some existing access points if alternate access points could be provided. However, access management would not be used to prohibit the development of private property.
3. Social Conditions	Access to US 212.	All Build Alternatives	**Manage access.** Strategies for managing access would be used to handle specific impacts related to accessing US 212.
4. Transportation Right-of-Way and Relocations	Acquisition of new rights-of-way.	All Build Alternatives	**Provide compensation.** Affected landowners would be entitled to receive fair market value for land or buildings acquired and damages to remaining land due to the effects of highway construction.
	Displacement of residences, businesses, and farms.	All Build Alternatives	**Follow appropriate procedures.** The proposed project would be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended, 42 USC 4601, et seq.) and the Uniform Relocations Act Amendments of 1987 (Public Law 100-17).
	Impacts to geodetic monuments.	All Build Alternatives	**Notify National Geodetic Survey (NGS).** If there are any planned activities that would disturb or destroy geodetic control monuments, NGS requires notification not less than 90 days in advance of such activities in order to plan for their relocation.
10. Water Flow and Quality	Displacement of domestic wells.	All Build Alternatives	**Restore domestic water**. If domestic wells were displaced by the proposed project, domestic water would be restored to the affected properties. The manner in which this would be accomplished would be determined on a case-by-case basis.
	Impacts to groundwater flow.	All Build Alternatives	**Conduct studies to avoid impacts to the water table**. Subsurface excavation to a depth sufficient to impact groundwater is not anticipated with implementation of the proposed project. However, if a situation arises that would entail excavation to a depth that might intersect the water table, mitigation measures would be implemented to minimize the impact to groundwater flow, including groundwater flow that supports springs.

TABLE S-4
Summary of Operations-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
	Contaminants from stormwater and highway runoff.	All Build Alternatives	**Seed the project area**. To re-establish permanent vegetation, disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species, as recommended by the MDT botanist. Revegetation would be conducted in accordance with the most current version of MDT's *Standard Specifications for Road and Bridge Construction* (MDT Standard Specifications; MDT, 2006). This action would be in accordance with MCA 7-22-2152 and 60-2-208, and MDT would develop revegetation guidelines that the contractor would have to follow. As appropriate, these specifications would include instructions for seeding methods, dates, mix components, and the types and amounts of mulch and fertilizer.
		All Build Alternatives	**Manage highway runoff contaminants**. Four management measures have been identified as effective means for removing contaminants such as salt and deicing agents from highway runoff. These measures are vegetative controls, wet detention basins, infiltration systems, and wetlands (TRB, 2000). Of these measures, the best mitigation tool for attenuating pollutant loading from highway runoff along the US 212 corridor would be vegetative control. To re-establish permanent vegetation, disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species, as recommended by the MDT botanist. Revegetation would be conducted in accordance with MDT Standard Specifications. Vegetative control would be the most cost-effective tool available for removal of contaminants from highway runoff.
		All Build Alternatives	**Create an erosion control and sediment plan.** An erosion control and sediment plan in compliance with the MPDES regulations (ARM 17.30.1301 et seq.) would be created and submitted to MDEQ's Water Quality Division to minimize erosion and sedimentation during and following construction. Best management practices (BMPs) would be used in the design of this plan.
11. Wetlands	Loss of wetland areas by using new right-of-way.	All Build Alternatives	**Do not discharge dredged or fill material into wetlands unless mitigated.** Except as provided under CWA Section 404(b)(1) guidelines, COE and EPA would not allow dredged or fill material to be discharged into wetlands unless appropriate and practicable steps were taken to avoid or minimize potential adverse impacts on the wetlands. **Implement mitigation measures.** • **Avoid.** Avoid potential wetland impacts to the maximum extent practicable. • **Minimize.** Minimize unavoidable wetland impacts to the extent appropriate and practicable. • **Compensate.** Compensate for unavoidable adverse impacts to wetlands that remain after all appropriate and practicable minimization has been required. See *Section 4.11.2.6, Mitigation,* of the *Wetlands* section for specific mitigation measures.

TABLE S-4
Summary of Operations-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
12. Water Bodies and Aquatic Resources	Adverse impacts on aquatic habitat, fish, or other aquatic resources in water bodies.	All Build Alternatives	**Implement stormwater controls and BMPs**. During and after construction, stormwater controls and BMPs designed and constructed to prevent contamination from entering water bodies would be implemented.
			Follow permit provisions. Provisions listed in permits from MFWP, COE, and MDEQ would be followed.
14. Wildlife Resources	New weeds in wildlife habitat.	All Build Alternatives	**Control noxious weeds.** MDT would control noxious weeds within the project limits during construction.
	New vegetation in wildlife habitat.	All Build Alternatives	**Time reclamation**. Reclamation of disturbed construction zones, such as ditches and embankments, would be timed in accordance with the most current version of MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003) using a seeding mix of desirable species. If revegetation was necessary after weed control, the seed mix would be determined by the MDT reclamation specialist and would be included in project construction specifications.
16. Floodplains	Encroaching on floodplains.	All Build Alternatives	**Avoid floodplains and floodways**. To the extent practicable, floodplain and floodway impacts greater than 0.15 m (0.50 ft) would be avoided during the design of the alternative selected.
			Follow design standards. The proposed project would be designed in compliance with Executive Order (E.O.) 11988, *Floodplain Management*. State of Montana drainage design standards would be applied to achieve results that would not increase or significantly change the flood elevations and/or limits.
			Assess floodplain impacts. To evaluate such things as levee effects, a qualitative assessment of specific direct floodplain impacts would be conducted during final design of the alternative selected. That assessment would include hydraulic modeling to simulate water surface profiles for each existing and proposed structure.
		Alternative 1	**Appropriately design the bridge.** The bridge over Rock Creek associated with US 310 would span the Rock Creek floodway. The proposed bridge design would avoid placing structures or fill within the floodway and would comply with Montana statutes specifying that such structures not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft). The bridge would also be designed with appropriate erosion control measures.
			Potentially conduct a hydraulic analysis. Due to the proposed bridge construction, a hydraulic analysis might be required for Rock Creek.

TABLE S-4
Summary of Operations-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
19. Visual Resources	Without corridor development regulations, the visual quality of the corridor might adversely affect development outside the corridor.	All Build Alternatives	**Lessen visual effects**. If practical, techniques would be employed to lessen the visual effects of typical rock cuts and bridge abutments at stream crossings. **Create natural-looking rock cuts.** As appropriate, natural-looking rock cuts with non-linear edges that have rounded edges resembling adjacent, existing bluffs would be created. **Revegetate.** Revegetation practices such as reintroducing desirable plant species, creating pockets in newly graded slopes for plantings, and revegetating in ways that do not result in a linear edge would be implemented.
21. Geology and Soils	Possibility of cut-slope failures.	All Build Alternatives	**Follow water quality mitigation measures.** Follow the mitigation measures described for *10. Water Flow and Quality* in Tables S-4 and S-5.

[a]Information based on conceptual design and modifications may be necessary as the design process continues.

[b]The numbers used in this column correspond with the subsections in *Chapter 4, Environmental Consequences*.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
1. Land Use	Temporary road closures or restrictions.	All Build Alternatives	**Keep county commissioners informed.** MDT would keep the county commissioners informed about the project by providing updates to the commissioners at their request and by attending county commissioner meetings, if appropriate, to address community and business concerns. This would satisfy the *Carbon County Montana Growth Policy* (2003), which specifically requests that the County Commissioners be engaged in the development process.
3. Social Conditions	Construction-related traffic delays.	All Build Alternatives	**Keep county commissioners informed.** The county commissioners would then be responsive to their constituents and would help with problem solving.
			Develop a traffic control plan. A traffic control plan would be required with a response strategy for emergency vehicles needing to travel through the construction area.
		Alternatives 1, and 3A	**Provide flaggers and signs.** As appropriate, traffic controllers would use flaggers and signs to reduce congestion at the locations where the new road leaves and reenters the existing alignment.
		Alternatives 3A and 3B	**Use a pilot car.** A pilot car would be used during lane restrictions (if necessary) to maintain public safety.
		Alternatives 5A and 5B (preferred)	**Address traffic safety and traffic delays.** Traffic safety would be addressed and traffic delays would be minimized in the section of construction where the four-lane expansion would use the existing alignment and where traffic-turning activities would occur during construction at the US 310 interchange.
4. Transportation Right-of-Way and Relocations	Disruption of access to business, residence, and agricultural lands.	All Build Alternatives	**Make prior arrangements.** Arrangements would be made prior to the start of each phase of construction to maintain access.
			Designate alternative access points. Alternative access points would be designated for impacted businesses, residences, and farmlands.
5. Economic Conditions	"Through traffic" travelers might stop at more convenient establishments outside the immediate construction zone.	All Build Alternatives	**Create a traffic control plan**. A traffic control plan would be created to maintain traffic safety and provide opportunities for vehicle patrons to leave and reenter the roadway from roadside business establishments.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
7. Pedestrian and Bicycle Considerations	Disruption of access to pedestrian and bicycle facilities.	All Build Alternatives	**Make arrangements.** Prior to the start of each phase of construction, arrangements would be made to maintain access or to designate alternative access points for pedestrian and bicycle facilities.
8. Air Quality	Air emissions generated by construction activities.	All Build Alternatives	**Minimize air quality impacts.** In accordance with MDT Standard Specifications, contractors are required to operate in compliance with applicable federal, state, and local air quality standards. **Obtain an air quality permit, if necessary**. In accordance with MDT Standard Specifications, contractors are required to operate in compliance with applicable federal, state, and local air quality standards.
9. Noise	Noise generated by construction activities.	All Build Alternatives	**Follow noise ordinances.** In accordance with MDT Standard Specifications, contractors are required to adhere to applicable noise laws, which may include local ordinances.
10. Water Flow and Quality	Changes to water flow and quality.	All Build Alternatives	**Obtain and adhere to permits and authorizations.** In accordance with MDT Standard Specifications, contractors are required to obtain and adhere to applicable permits and authorizations. Applicable permits and authorizations may include obtaining a 318 Authorization for short-term water quality standards for turbidity related to construction activity, preparing and maintaining an erosion control and sediment control plan for an MPDES permit, obtaining a CWA Section 404 permit for dredge and fill in Waters of the U.S., and obtaining a Stream Protection Act Notification (SPA 124). **Revegetate.** Contractors will be expected to re-establish permanent vegetation in disturbed areas within MDT right-of-way or easements. Areas will be seeded and/or planted with desirable plant species, as recommended by the MDT botanist and in accordance with MDT Standard Specifications. **Provide erosion control measures.** Contractors will be expected to adhere to MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003) through use of BMPs such as fiber mats, catch basins, silt fences, and sediment barriers.
11. Wetlands	Loss of wetland area.	All Build Alternatives	**Follow wetlands and water quality measures**. The mitigation measures described for *11. Wetlands* in Table S-4 and for *10. Water Flow and Quality* in Tables S-4 and S-5 would be followed.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
12. Water Bodies and Aquatic Resources	Increased sediment delivery to water bodies, degrading aquatic resources.	All Build Alternatives	**Minimize, avoid, or prevent adverse impacts.** Measures to minimize, avoid, or prevent some of the potential for adverse impacts on natural resources would be implemented. For example, MDT and the Montana Transportation Commission have adopted MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003), which contain contractor requirements that minimize, avoid, or prevent some of the potential for adverse impacts on natural resources.
			Abide by authorizations. The required authorization to perform work in streams would be secured and the conditions set forth would be followed.
			Use standard specifications. Use the most current version of MDT Standard Specifications to prevent water quality degradation from erosion and runoff, thereby reducing potential impacts on aquatic resources.
	Contamination from accidental spills, leakage, and runoff or leaching of petroleum products and other potentially toxic substances.		**Implement stormwater controls and BMPs.** During and after construction, stormwater controls and BMPs designed and constructed to prevent contamination from entering water bodies would be implemented.
			Abide by permits. Provisions listed in permits from MFWP, COE, and MDEQ would be followed.
14. Wildlife Resources	Impacts to wildlife habitat and populations.	All Build Alternatives	**Follow wildlife resources measures**. Follow the mitigation measures described for *14. Wildlife Resources* in Table S-4.
			Follow standard specifications. Implementation of MDT Standard Specifications.
	Disturbing nesting birds.	All Build Alternatives	**Search for nests.** Searches for nests would be conducted in accordance with MBT conventions required by the FWS.
			Time construction. As necessary, construction would be timed or distractive measures would be used to avoid disturbance of nests in order to comply with the Migratory Bird Treaty Act (MBTA).
	Disturbing habitat.	All Build Alternatives	**Maintain vegetation.** To re-establish permanent vegetation, disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species, as recommended and determined feasible by the MDT botanist.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
	Creating new hazards for raptors.	All Build Alternatives	**Raptor-proof facilities**. Electrical facilities that are relocated within MDT right-of-way as a result of this project would be raptor-proofed in accordance with MDT policy.
15. Threatened and Endangered Species and State Species of Concern	Impacts to bald eagles—state species of concern.	All Build Alternatives	**Locate nests.** Prior to construction, MDT would contact and coordinate with FWS and MFWP to reconfirm the locations of known nests, roosts, or concentration areas occurring within 1.6 km (1 mi) of the project. **Coordinate construction restrictions**. MDT would discuss and coordinate construction restrictions with FWS and MFWP, as appropriate to the location, setting, and status of known or discovered nests, roosts, or concentration areas. Although they would be site-specific, typical construction restrictions would include, if necessary, the following: • **Avoiding active nests March 1 to May 15.** High intensity activities (gravel crushing, pavement milling, heavy-equipment operations, and so forth) or locating or placing staging areas, stockpile sites, borrow sites, or production processing or mixing plants would not be conducted within 0.8 km (0.5 mi) of an active nest between March 1 and May 15. • **Avoiding active nests May 15 to July 15.** High-intensity activities (gravel crushing, pavement milling, heavy-equipment operations, and so forth) or locating or placing borrow sites, or production processing or mixing plants would not be conducted within 0.4 km (0.25 mi) of an active nest between May 15 and July 15. • **Avoiding roost sites and concentration areas.** Temporal and spatial restrictions would be applied within 0.4 km (0.25 mi) of roost sites and concentration areas during the seasons that these were being actively used. Restrictions to work might be extended or modified in coordination with, and subject to approval by, FWS and MFWP.
16. Floodplains	Encroachment on floodplains.	All Build Alternatives	**Obtain a joint floodplain development permit, if necessary.** If impacts to floodplains were unavoidable, a joint floodplain development permit application would be submitted to the Montana Department of Natural Resources and Conservation. That permit would have to be approved before construction activities began. **Consult with agencies.** The COE, FEMA, and floodplain agencies for the State of Montana, Carbon County, and Yellowstone County would be consulted prior to construction.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
17. Cultural Resources	Discovery of cultural resources.	All Build Alternatives	**Cease construction.** If archeological resources are discovered during the construction phases of the proposed project, construction would cease immediately. **Consult professionals.** To identify, evaluate the significance of, and determine appropriate future actions related to the archeological/historical resource(s), the MDT archeologist and/or historian would be consulted and would work with the Montana State Historic Preservation Office (SHPO), as appropriate.
18. Hazardous Materials	Encountering hazardous materials in waste collection areas.	Alternatives 1, 2, 5A, and 5B (preferred)	**Determine waste collection area.** Materials contained in the waste collection areas identified within the footprints would be handled and disposed in special ways such as the following: • **Evaluate.** The waste collection area would be evaluated to determine if special handling would be required. • **Deposit in landfills.** Materials in the waste collection area would be deposited in landfills approved for those materials.
	Demolishing buildings that contain asbestos or other hazardous materials.	All Build Alternatives	**Determine building contamination**. It would be determined whether buildings to be demolished were contaminated with asbestos-containing-material or lead-based-paint wastes. If they were contaminated, the materials would be properly disposed. • **Use preliminary site investigations (PSIs)**. PSIs would identify the location and quantity of asbestos-containing-material and lead-based-paint wastes, if any, that would be abated prior to demolition. • **Sample.** Buildings containing lead-based paint or other surface coatings containing lead would be sampled to determine the characteristics of the debris for appropriate disposal. • **Develop a remediation/reclamation plan**. A remediation/reclamation plan would be developed, if needed, in consultation with MDEQ and the counties. • **Properly remove and dispose.** Regulated asbestos-containing materials containing more than 1 percent asbestos would be removed and properly disposed in approved locations prior to building demolition. • **Inspect.** Structures slated for relocation or demolition would be inspected for asbestos-containing material by a state-licensed inspector. • **Complete appropriate form.** A National Emissions Standards for Hazardous Air Pollutants Demolition/Renovation Notification form would be filed with MDEQ for relocated or demolished structures.

TABLE S-5
Summary of Construction-Related Mitigation Measures[a]

Resources Area or Activity[b]	Description of Impact	Alternative Causing Impact	Potential Mitigation Measure
	Encountering home heating oil storage tanks and fuel lines.	All Build Alternatives	**Identify and dispose home heating oil storage tanks.** Home heating oil storage tanks (underground and aboveground) and associated fuel lines that might exist at residences that would be displaced would be identified and properly disposed. • **PSIs.** PSIs would determine if any storage tanks exist on the property. • **Standard specifications.** Procedures for removal and disposal of storage tanks and associated contaminated soil would be in accordance with the most current version of MDT Standard Specifications.
	Encountering contaminated soil.	All Build Alternatives	**Identify and dispose contaminated soil.** Contaminated soil would be identified and properly disposed. • **PSIs.** PSIs would determine the level of soil contamination. • **Standard specifications.** Disposal of contaminated soil, if needed, would be conducted in accordance with the most current version of MDT Standard Specifications.
	Encountering polychlorinated biphenyls (PCBs).	All Build Alternatives	**Identify and dispose PCBs.** PCBs would be identified and properly disposed. • **PSIs.** PSIs would be performed to determine if PCBs were present in electrical transformers or in soils around electric utility facilities that would be impacted by the project. If PCBs were discovered, a remediation/disposal plan would be developed in consultation with MDEQ.
21. Geology and Soils	Excavations, fill areas, and earthwork.	All Build Alternatives	**Follow water quality measures.** Follow the mitigation measures described for *10. Water Flow and Quality* in Tables S-4 and S-5.

[a] Information based on conceptual design and modifications may be necessary as the design process continues.

[b] The numbers used in this column correspond with the subsections in *Chapter 4, Environmental Consequences*.

CONTENTS

Part I: Environmental Impact Statement

Chapter **Page**

Summary i
Project Route i
Proposed Alternatives i
Environmental Consequences and Mitigation i
Topics ii
Purpose and Need ii
Purpose ii
Critical Needs iii
Key Concerns iii
Project Description iv
Project Location v
Alternatives Reviewed and Preferred Alternative v
Construction Phasing, Cost Estimate, and Funding v
Project History vi
Project Initiation vi
Public Coordination vi
Alternatives vii
Development of Alternatives vii
Analyses Conducted vii
Future Status of the Presently Traveled Way viii
Engineering and Other Aspects of the Alternatives Considered viii
No Build Alternative viii
Build Alternatives viii
Alternatives Not Carried Forward xvi
Typical Sections and Right-of-Way xvii
Affected Environment xvii
Environmental Consequences xvii
Mitigation xix
Cumulative Impacts xix
Permits and Other Governmental Actions xix
Major Unresolved Issues xx

Acronyms and Abbreviations xlv
Metric Conversions xlv
Acronyms and Abbreviations xlv

1 Purpose and Need 1-1
1.1 Introduction 1-2
1.2 Purpose 1-7

Chapter **Page**

1.3 Need 1-7
1.3.1 Physical Deficiencies of the Existing Roadway 1-8
1.3.2 Transportation Demand 1-9
1.3.3 Traffic Operations/Level of Service 1-9
1.3.4 Accident History and Safety 1-16
1.3.5 Access 1-18

2 Alternatives 2-1
2.1 Introduction 2-1
2.2 Alternative Development and Evaluation 2-1
2.2.1 MDT Standards 2-15
2.2.2 Typical Sections 2-16
2.2.3 Access Management 2-25
2.3 Alternatives Considered 2-26
2.3.1 No Build Alternative 2-26
2.3.2 Build Alternatives 2-29
2.4 Comparison of Build Alternatives 2-42
2.4.1 Selection of a Preferred Alternative 2-42
2.4.2 Preliminary Cost Comparison 2-46
2.5 Alternatives Considered but Eliminated from Detailed Analysis 2-46
2.5.1 Transportation System Management and Transportation Demand Management (TSM/TDM) Alternative 2-47
2.5.2 Alternative 4—East Bench 2-48
2.6 Basis for Recommending the Preferred Alternative 2-49
2.7 Permits and Other Governmental Actions 2-50

3 Affected Environment 3-1
3.1 Land Use 3-1
3.1.1 Carbon County Land Use 3-2
3.1.2 Yellowstone County Land Use 3-2
3.1.3 Project Area Land Use 3-5
3.1.4 Applicable Land Use Policies 3-6
3.2 Farmlands 3-8
3.3 Social Conditions 3-9
3.3.1 Community Characteristics 3-10
3.3.2 Public Services 3-10
3.3.3 Parks and Recreation Opportunities 3-13
3.3.4 Transportation Patterns and Safety 3-13
3.4 Transportation Right-of-Way and Relocations 3-13
3.5 Economic Conditions 3-14
3.5.1 Regional Economic Summary 3-14
3.5.2 Local Economy 3-17
3.6 Environmental Justice 3-17
3.6.1 Minority Population 3-17

Chapter **Page**

3.6.2 Household Income 3-18
3.6.3 Poverty Population 3-18
3.7 Pedestrian and Bicycle Considerations 3-18
3.8 Air Quality 3-19
3.9 Noise 3-20
3.9.1 Noise Terminology 3-20
3.9.2 Noise Impact Criteria 3-20
3.9.3 Existing Noise Levels 3-20
3.10 Water Flow and Quality 3-25
3.10.1 Surface Water Flow Rates 3-25
3.10.2 Total Maximum Daily Loads 3-25
3.10.3 303(d) Listed Water Bodies 3-25
3.10.4 Water Quality Standards 3-26
3.10.5 Source Water Protection 3-26
3.10.6 Domestic Wells 3-27
3.10.7 Groundwater 3-28
3.11 Wetlands 3-31
3.11.1 Delineation of Wetlands 3-31
3.11.2 Wetland and Riparian Plant Communities 3-32
3.12 Water Bodies and Aquatic Resources 3-35
3.12.1 Water Bodies 3-35
3.12.2 Aquatic Resources 3-35
3.13 Vegetation 3-39
3.13.1 Plant Communities 3-39
3.13.2 Noxious Weeds and Other Introduced Plant Species 3-39
3.14 Wildlife Resources 3-41
3.14.1 Mammals 3-41
3.14.2 Birds, Including Migratory Birds 3-41
3.14.3 Reptiles and Amphibians 3-42
3.15 Threatened and Endangered Species and State Species of Concern 3-43
3.15.1 Threatened and Endangered Wildlife 3-43
3.15.2 State Species of Concern 3-45
3.16 Floodplains 3-49
3.17 Cultural Resources 3-50
3.17.1 Regulatory Guidelines 3-50
3.17.2 Research Methodology 3-50
3.17.3 Resource Inventory 3-51
3.17.4 Site Descriptions 3-52
3.18 Hazardous Materials 3-52
3.18.1 Investigation 3-52
3.18.2 Sites Potentially Containing Hazardous Materials 3-53
3.19 Visual Resources 3-53
3.19.1 Existing Visual Characteristics 3-53
3.19.2 Landscape Units 3-54
3.19.3 Visually Sensitive Resources 3-54

Chapter **Page**

3.20 Energy Consumption 3-57
3.21 Geology and Soils 3-58
3.21.1 Topography 3-58
3.21.2 Geology 3-58
3.21.3 Soils 3-59

4 Environmental Consequences 4-1
4.1 Land Use 4-2
4.1.1 No Build Alternative 4-2
4.1.2 Build Alternatives 4-3
4.2 Farmlands 4-6
4.2.1 No Build Alternative 4-6
4.2.2 Build Alternatives 4-6
4.3 Social Conditions 4-7
4.3.1 No Build Alternative 4-8
4.3.2 Build Alternatives 4-8
4.4 Transportation Right-of-Way and Relocations 4-8
4.4.1 No Build Alternative 4-8
4.4.2 Build Alternatives 4-9
4.5 Economic Conditions 4-11
4.5.1 No Build Alternative 4-11
4.5.2 Build Alternatives 4-12
4.6 Environmental Justice 4-20
4.6.1 No Build Alternative 4-20
4.6.2 Build Alternatives 4-21
4.7 Pedestrian and Bicycle Considerations 4-22
4.7.1 No Build Alternative 4-22
4.7.2 Build Alternatives 4-22
4.8 Air Quality 4-23
4.8.1 No Build Alternative 4-23
4.8.2 Build Alternatives 4-23
4.9 Noise 4-24
4.9.1 Noise Impact Criteria 4-24
4.9.2 Noise Analysis Methodology 4-25
4.9.3 No Build Alternative 4-25
4.9.4 Build Alternatives 4-32
4.10 Water Flow and Quality 4-35
4.10.1 No Build Alternative 4-35
4.10.2 Build Alternatives 4-36
4.11 Wetlands 4-40
4.11.1 No Build Alternative 4-40
4.11.2 Build Alternatives 4-40
4.12 Water Bodies and Aquatic Resources 4-47
4.12.1 No Build Alternative 4-47
4.12.2 Build Alternatives 4-48

Chapter **Page**

4.13 Vegetation 4-50
4.13.1 No Build Alternative 4-50
4.13.2 Build Alternatives 4-50
4.14 Wildlife Resources 4-50
4.14.1 No Build Alternative 4-50
4.14.2 Build Alternatives 4-51
4.15 Threatened and Endangered Species and State Species of Concern 4-55
4.15.1 No Build Alternative 4-55
4.15.2 Build Alternatives 4-56
4.16 Floodplains 4-59
4.16.1 No Build Alternative 4-59
4.16.2 Build Alternatives 4-59
4.17 Cultural Resources 4-68
4.17.1 No Build Alternative 4-69
4.17.2 Build Alternatives 4-69
4.18 Hazardous Materials 4-69
4.18.1 No Build Alternative 4-69
4.18.2 Build Alternatives 4-70
4.19 Visual Resources 4-70
4.19.1 Visual Analysis Methodology 4-70
4.19.2 No Build Alternative 4-72
4.19.3 Build Alternatives 4-72
4.20 Energy Consumption 4-75
4.20.1 No Build Alternative 4-75
4.20.2 Build Alternatives 4-76
4.21 Geology and Soils 4-77
4.21.1 No Build Alternative 4-77
4.21.2 Build Alternatives 4-78
4.22 Construction Impacts Related to the Proposed Project 4-80
4.22.1 Land Use 4-81
4.22.2 Farmlands 4-81
4.22.3 Social Conditions 4-81
4.22.4 Transportation Right-of-Way and Relocations 4-83
4.22.5 Economic Conditions 4-83
4.22.6 Environmental Justice 4-84
4.22.7 Pedestrian and Bicycle Considerations 4-84
4.22.8 Air Quality 4-84
4.22.9 Noise 4-85
4.22.10 Water Flow and Quality 4-85
4.22.11 Wetlands 4-85
4.22.12 Water Bodies and Aquatic Resources 4-86
4.22.13 Vegetation 4-88
4.22.14 Wildlife Resources 4-88
4.22.15 Threatened and Endangered Species and State Species of Concern 4-89

Chapter **Page**

4.22.16 Floodplains 4-90
4.22.17 Cultural Resources 4-90
4.22.18 Hazardous Materials 4-91
4.22.19 Visual Resources 4-94
4.22.20 Energy Consumption 4-94
4.22.21 Geology and Soils 4-94
4.22.22 Construction Schedule and Method 4-94
4.23 Local Short-Term Uses and Long-Term Productivity 4-95
4.24 Irreversible and Irretrievable Commitments of Resources 4-95
4.24.1 Physical Resources 4-96
4.24.2 Monetary Resources 4-96
4.24.3 Natural Resources 4-96
4.24.4 Human Resources 4-96
4.25 Cumulative Impacts 4-96
4.25.1 Past, Present, and Future Actions 4-97
4.25.2 Summary of Cumulative Impacts 4-99
4.26 Major Unresolved Issues 4-104

5 List of Preparers 5-1

6 Distribution List 6-1
6.1 Federal Agencies 6-1
6.2 State Agencies 6-2
6.3 Local Agencies 6-3
6.4 Public Copies 6-3

7 Comments and Coordination 7-1
7.1 Agencies Contacted 7-1
7.1.1 Agencies with Jurisdiction and/or Permitting Authority 7-1
7.1.2 Other Agencies, Groups, or Persons 7-2
7.2 Cooperating Agencies 7-2
7.2.1 Agency Involvement 7-2
7.2.2 Cooperating Agency Meeting 7-3
7.3 Pre-Draft EIS Publication Coordination 7-3
7.3.1 Public Scoping Meetings 7-3
7.3.2 Pre-Draft EIS Publication Comments 7-5
7.4 Post-Draft EIS Publication Coordination 7-6
7.4.1 Draft EIS Public Hearing (December 11, 2007) 7-6
7.5 Future Public Involvement and Information Activities 7-10
7.5.1 Notice of Availability of Final Environmental Impact Statement 7-10
7.5.2 Final EIS Availability 7-10

8 Sources and Supporting Documents 8-1

Appendixes

A Intersection Alternatives
B Species Information
C Farmland Conversion Impact Rating for Corridor Type Projects
D Noise Figures
E Clean Water Act Section 404(b)(1) Evaluation
F Glossary
G Coordination Letters
H Section 106 Determination of Effect
I Draft EIS Comments and Responses

Tables Page

S-1 Summary Information about Engineering and Other Aspects of the Alternatives Considered xi
S-2 Proposed Montana Department of Transportation Projects near the Rockvale to Laurel Project Area xx
S-3 Summary of Impacts xxi
S-4 Summary of Operations-Related Mitigation Measures xxv
S-5 Summary of Construction-Related Mitigation Measures xxix

1-1 Projected Change in Population Between 2000 and 2020 1-9
1-2 Level of Service (LOS) Definitions for a Two-Lane Roadway 1-15
1-3 Reported Accident Characteristics on US 212 RP 42.64 to RP 53.05 from 1990 to 2000 1-18
1-4 Reported Accident Characteristics on US 212 RP 42.64 to RP 53.05 from 2002 to 2006 1-19
1-5 Existing Highway Access Points 1-20

2-1 Developing Reasonable Alternatives to Meet Project Purpose 2-1
2-2 Comparison of LOS Analysis for Two-Lane, Two-Lane-with-Passing-Lanes, and Four-Lane Typical Sections of US 212 2-16
2-3 Typical Sections under Consideration 2-18
2-4 Summary Information about Engineering and Other Aspects of the Alternatives Considered 2-27
2-5 Potential Structure Requirements for Alternative 1—Far West Bench 2-31
2-6 Potential Structure Requirements for Alternative 2—Near West Bench 2-33
2-7 Potential Structure Requirements for Alternative 3A—Near Existing Alignment 2-36
2-8 Potential Structure Requirements for Alternative 3B—Near Existing Alignment 2-38
2-9 Potential Structure Requirements for Alternative 5A—Combined West Bench 2-39
2-10 Potential Structure Requirements for Alternative 5B—Combined West Bench (Preferred) 2-41
2-11 Comparison of the Build Alternatives for Selection of the Preferred Alternative 2-43

3-1 Project Area General Land Uses by County 3-5
3-2 Project Area Residences and Businesses by County (Number) 3-5

Tables **Page**

3-3 Employment Trends for Carbon and Yellowstone Counties, 1990-1999 3-14
3-4 Average Annual Unemployment Rates by County 3-15
3-5 Per Capita Income, 1990-1999 3-16
3-6 Property Taxes Collected in Carbon and Yellowstone Counties (2000) 3-16
3-7 Minority Populations Within and Surrounding the Project Area 3-18
3-8 Low-Income Populations Within and Surrounding the Project Area 3-19
3-9 Measured Ambient $L_{eq}(h)$ Noise Levels (October 2001) 3-23
3-10 Water Bodies Along US 212 Corridor on the 2006 Montana Integrated Water Quality Report (MDEQ, 2006) 3-26
3-11 Public Water Supplies Located within the US 212 Project Corridor 3-27
3-12 Summary of Sites Identified during the Rockvale to Laurel Cultural Resources Inventory 3-51

4-1 Projected Amount of Agricultural Land Displaced by Rights-of-Way for the Alternatives 4-7
4-2 Summary of Projected Relocations and Right-of-Way Impacts by Alternative 4-9
4-3 Estimated Annual Loss of Property Tax Revenue from Displaced Residential and Business Property 4-12
4-4 Summary of Projected Economic Impacts 4-14
4-5 Summary of Projected Impacts to Businesses in the Project Area 4-15
4-6 Summary of Noise-Impacted Receptors 4-25
4-7 Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h 4-26
4-8 Summary of Water-Related Impacts 4-38
4-9 Potential Area and Type of Wetland and Other Waters of the U.S. Present Within Each Roadway Alternative—Wetland, Riparian, and Aquatic Areas Affected 4-42
4-10 Approximate Area of Potential Onsite Wetland Mitigation Sites 4-46
4-11 Preferred Alternative Threatened and Endangered Species Summary and Determination of Effect. 4-56
4-12 Summary of Yellowstone River and Clarks Fork Yellowstone River Floodplain Impacts 4-63
4-13 Summary of Rock Creek Floodplain Impacts 4-64
4-14 Comparison Summary of Projected Visual Quality Ratings for Alternative Alignments 4-71
4-15 Comparison Summary of Visual Quality for Alternative Alignments and Assessment of Impacts 4-72
4-16 Factors Influencing Operations Energy Consumption by Alternative 4-75
4-17 Sites Potentially Containing Hazardous Materials 4-91

7-1 Public Scoping Meetings for the Rockvale to Laurel US 212 Reconstruction Project 7-3
7-2 Public Relations Notices for Public Scoping Meetings Held in 2000—US 212 Reconstruction, Rockvale to Laurel EIS Project 7-4
7-3 Public Relations Notices Announcing the Availability of the Draft EIS and Advertising the Public Hearing—US 212 Reconstruction, Rockvale to Laurel EIS Project 7-8

Figures **Page**

S-1 Alternatives Considered vii

1-1 Project Location Map 1-3
1-2 Project Area 1-5
1-3 US 212 Traffic Demand 1-11
1-4 Historic Traffic Growth 1-13

2-1 Alternatives Carried Forward 2-3
2-2 Alternative Not Carried Forward 2-5
2-3 Alternatives–Portion 1 2-7
2-4 Alternatives–Portion 2 2-9
2-5 Alternatives–Portion 3 2-11
2-6 Alternatives–Portion 4 2-13
2-7 80-Meter Footprint (260-Foot Footprint) for an 11-Meter Median Typical Section (100-Foot Section) 2-19
2-8 Typical Sections 2-21

3-1 Existing Land Use 3-3
3-2 Prime if Irrigated and Statewide-Important Farmland 3-11
3-3 Noise Measurement Locations 3-25
3-4 Public Water Sources 3-29
3-5 Wetland and Potential Wetland Mitigation Sites along US 212 from Rockvale to Laurel 3-35
3-6 Water Bodies 3-39
3-7 US 212 Landscape Units 3-57

4-1 Potentially Impacted Business Locations 4-17
4-2 Floodplain along US 212 from Rockvale to Laurel 4-63

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ACRONYMS AND ABBREVIATIONS

Metric Conversions

To assist the reader, this document, where appropriate, includes metric and English units side-by-side, such as 13.7 km (8.5 mi). The following information briefly summarizes the conversion factors and units used in this document:

Metric Units	English Units	Conversion Factor (Metric to English)
centimeter (cm)	inch (in)	0.3937
meter (m)	foot (ft)	3.2808
cubic meters (m^3)	cubic feet (ft^3)	35.3147
kilometer (km)	mile (mi)	0.6214
hectare (ha)	acre (ac)	2.471

Acronyms and Abbreviations

AADT .....annual average daily traffic
AASHTO .....American Association of State Highway and Transportation Officials
ac .....acre(s)
ADT ..... average daily traffic
agencies..... federal and state regulatory and cooperating agencies
ARM .....Administrative Rules of Montana
AST ..... aboveground storage tank
BLM..... U.S. Bureau of Land Management
BMP .....best management practice
BNSF.....Burlington Northern Santa Fe
BSA.....Big Sky Acoustics
CAMA.....Computer Assisted Mass Appraisal
CEI ..... Cost-Effectiveness Index
CFR .....Code of Federal Regulations
cfs .....cubic feet per second
cm..... centimeter(s)
cm/sec .....centimeters per second
cms .....cubic meters per second

COE..... U.S. Army Corps of Engineers
CWA .....Clean Water Act
dB.....decibel
dBA..... decibel (A-weighted scale)
DHV.....design hourly volumes
Draft EIS .....*US 212 Reconstruction Rockvale to Laurel Draft Environmental Impact Statement* (MDT and FHWA, 2007)
EIS.....Environmental Impact Statement
E.O. ..... Executive Order
EPA.....U.S. Environmental Protection Agency
ESA..... Endangered Species Act
FAC.....facultative
FACU.....facultative upland
FACW.....facultative wetland
FEMA .....Federal Emergency Management Agency
FHWA.....U.S. Department of Transportation, Federal Highway Administration
Final EIS .....*US 212 Reconstruction Rockvale to Laurel Final Environmental Impact Statement (this document)*
FIRM..... Flood Insurance Rate Maps
FR..... *Federal Register*
ft ..... foot (feet)
FWS ..... U.S. Fish and Wildlife Service
GLO ..... General Land Office
ha.....hectare(s)
I-90.....Interstate 90
in .....inch(es)
km ..... kilometer
km/h ..... kilometers per hour
L&WCF ..... Land and Water Conservation Fund
L_{eq}..... steady-state noise level
$L_{eq}(h)$.....steady-state noise level over 1 hour
LOS.....level of service
m ..... meter(s)
MBT.....migratory bird treaties
MBTA.....Migratory Bird Treaty Act of 1918
MCA ..... Montana Code Annotated
MDEQ..... Montana Department of Environmental Quality

MDT ..... Montana Department of Transportation
MDT Standard Specifications ..... *Standard Specifications for Road and Bridge Construction* (MDT, 2006)
MEPA ..... Montana Environmental Policy Act
MFWP ..... Montana Fish, Wildlife and Parks
mi ..... mile(s)
MNHP ..... Montana Natural Heritage Program
MPDES ..... Montana Pollutant Discharge Elimination System
mph ..... miles per hour
MSATs ..... Mobile Source Air Toxics
MT-GAP ..... Montana Gap Analysis Project
MWAM ..... Montana Wetland Assessment Method
NA ..... not applicable
NAAQS ..... National Ambient Air Quality Standards
NCHRP ..... National Cooperative Highway Research Program
NEPA ..... National Environmental Policy Act
NHPA ..... National Historic Preservation Act
NHS ..... National Highway System
NI ..... no indicator
NRCS ..... U.S. Department of Agriculture Natural Resources Conservation Service
NRHP ..... National Register of Historic Places
NRIS ..... Natural Resource Information System
NSSH ..... *National Soil Survey Handbook* (NRCS, 2005)
OBL ..... wetland obligate
PCB ..... polychlorinated biphenyl
PEM ..... palustrine emergent marsh
pers. comm. ..... personal communication
PFO ..... palustrine forest
$PM_{2.5}$ ..... particulate matter less than 2.5 microns in diameter
Preferred Alternative ..... Alternative 5B—Combined West Bench
PSI ..... preliminary site investigation
PSS ..... palustrine scrub-shrub
PTSF ..... percent of time spent following
PTW ..... US 212's presently traveled way
PWSID ..... Public Water Supply Identifier
RC&D ..... Resource Conservation and Development

RP.....reference post (also known as mile post)
RUB .....riverine unconsolidated bottom
SCS .....U.S. Department of Agriculture, Soil Conservation Service
Section 4(f).....Section 4(f) of the U.S. Department of Transportation Act under 23 CFR 774
Section 6(f)..... Section 6(f) of the Land and Water Conservation Fund (Public Law 88-578, as amended)
SHPO ..... Montana State Historic Preservation Office
SIP..... State Implementation Plan
sp. ..... species (used when species is unknown or unspecified)
SPA 124 .....Stream Protection Act Notification
spp. .....plural of sp. (multiple unknown species)
TDM.....Transportation Demand Management
TMDL ..... total maximum daily load
TRB.....Transportation Research Board
TSM ..... Transportation System Management
TSM/TDM .....Transportation System Management and Transportation Demand Management
TWLTL .....two-way left-turn lane
US 212 .....U.S. Highway 212 and U.S. Highway 310 project route
US 310 .....U.S. Highway 310
USC. .....U.S. Code
USDA.....U.S. Department of Agriculture
USDI ..... U.S. Department of the Interior
USFS ..... U.S. Forest Service
USGS .....U.S. Geological Survey
UST .....underground storage tank
VMT..... vehicle miles traveled
vpd.....vehicles per day
vph.....vehicles per hour

CHAPTER 1 PURPOSE AND NEED

This transportation project is being proposed by the Montana Department of Transportation (MDT) in cooperation with the U.S. Department of Transportation, Federal Highway Administration (FHWA). The existing two-lane highway is a 17.4-kilometer (km) (10.8-mile [mi]) portion of U.S. Highway 212/U.S. Highway 310 (US 212/310) in south-central Montana, along with a short portion of U.S. Highway 310 (US 310) southwest of Rockvale (see Figure 1-1). For simplicity, the route is referred to as US 212 in the remainder of this Final Environmental Impact Statement (Final EIS).

This project was initially proposed by MDT and approved by the Montana Transportation Commission in 1998. The proposed project was included in Amendment 1 of the 1999 Statewide Transportation Improvement Program, which indicated its construction would occur after State Fiscal Year 2007. The Notice of Intent to prepare an EIS was published in the *Federal Register* (FR) on July 14, 2000 (65 FR 136).

US 212 is part of the National Highway System (NHS), and is functionally classified by FHWA as a rural principal arterial. The route of the proposed project extends north-northeasterly from the Rockvale community to south of the bridge crossing the Yellowstone River south of the City of Laurel between reference post (RP; also known as mile post) 42.1 and RP 52.9. Note that the original project limits set by MDT began at RP 42.6. However, two of the project alternatives developed (Alternative 1—Far West Bench and Alternative 3A—Near Existing Alignment) would extend the southwest project limit to RP 42.1 (see Figure 1-2). The project area is located in Carbon and Yellowstone counties.

This document consists of two parts—the Final EIS itself and its appendixes—structured as follows:

- Part I: Environmental Impact Statement
  - Signature Page
  - Summary
  - Acronyms and Abbreviations
  - Chapter 1, Purpose and Need
  - Chapter 2, Alternatives
  - Chapter 3, Affected Environment
  - Chapter 4, Environmental Consequences
  - Chapter 5, List of Preparers
  - Chapter 6, Distribution List
  - Chapter 7, Comments and Coordination
  - Chapter 8, Sources and Supporting Documents
- Appendixes
  - Appendix A, Intersection Alternatives
  - Appendix B, Species Information
  - Appendix C, Farmland Conversion Impact Rating for Corridor Type Projects
  - Appendix D, Noise Figures

- Appendix E, Clean Water Act Section 404(b)(1) Evaluation
- Appendix F, Glossary
- Appendix G, Coordination Letters
- Appendix H, Section 106, Determination of Effect
- Appendix I, Draft EIS Comments and Responses

This *Purpose and Need* chapter includes the following sections:

- Introduction
- Purpose
- Need

1.1 Introduction

The purpose of the proposed project is to improve safety for local and regional traffic needs, accommodate capacity needs, accommodate local circulation and access needs, and support the regional mobility of goods and people.

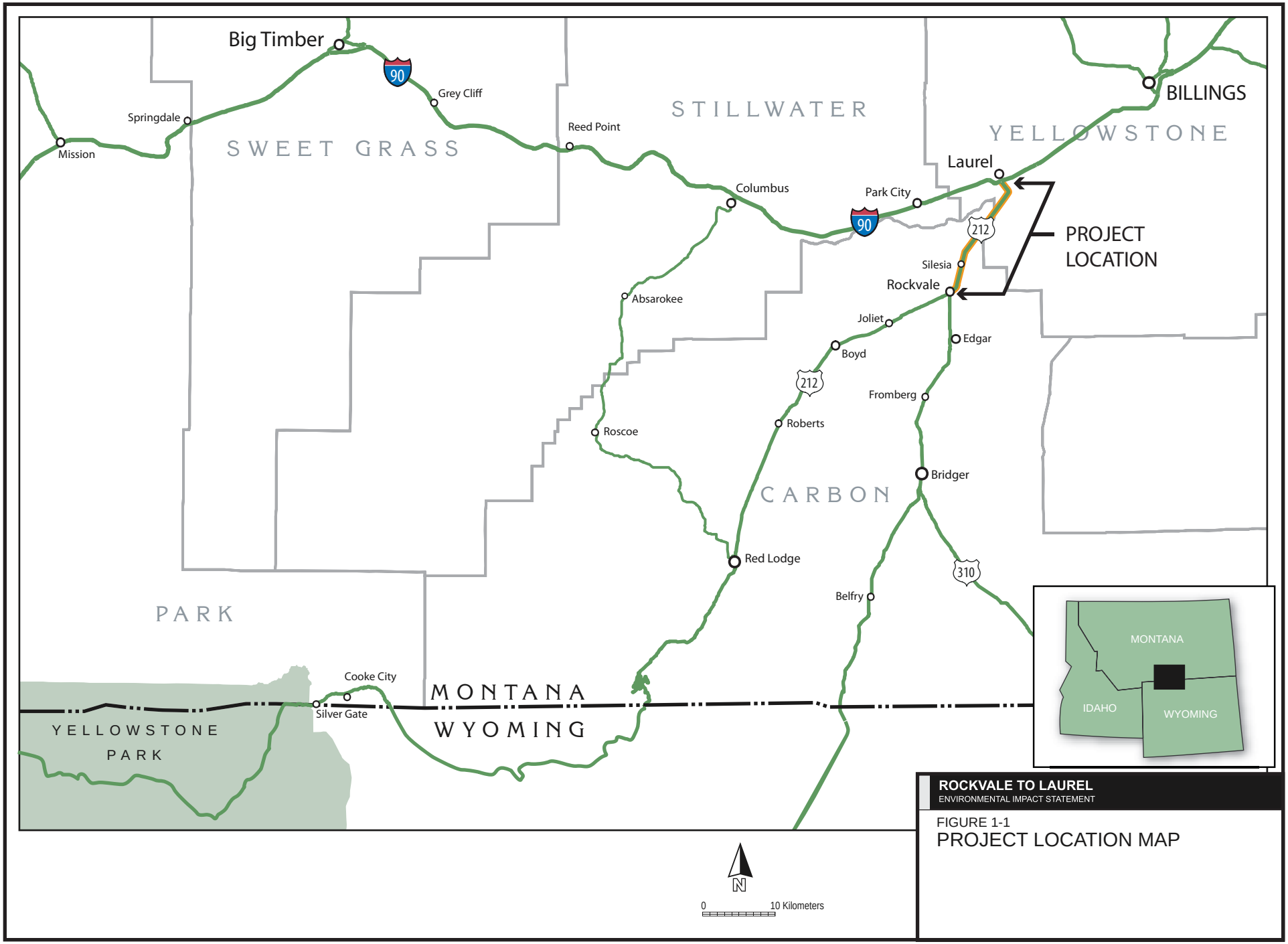
The proposed project's part of US 212 serves local traffic between the unincorporated communities of Rockvale and Silesia and the City of Laurel. Numerous residences receive access directly from US 212.

As part of the NHS, the portion of US 212 addressed by the proposed project is an important link in a system that includes Interstate Highways and other principal arterials that are vital to the nation's highway transportation network. Since completion in 1936, US 212 has become a popular tourist route. On a regional level, US 212 is the main connection between Interstate 90 (I-90) in Laurel and the Red Lodge and Yellowstone Park recreational areas. US 212 becomes the Beartooth Highway south of Red Lodge and travels through the Custer, Shoshone, and Gallatin National Forests. The Beartooth Highway provides access to one of the highest areas in the lower 48 states, with 20 peaks reaching over 12,000 feet (ft) in elevation. The route was originally pioneered in 1882, when General Sheridan surveyed a route across the mountains from Cooke City to Billings. In Rockvale, US 310, which connects to Bridger, Montana, and the state of Wyoming, joins US 212.

The project has been initiated because of rising safety and operation concerns such as:

- Truck-related accident rates within the project limits on US 212 are currently above the statewide average.
- The accident severity rate is substantially higher than the statewide average.
- Access-related accidents involving most types of vehicles prevail within the northeast portion.

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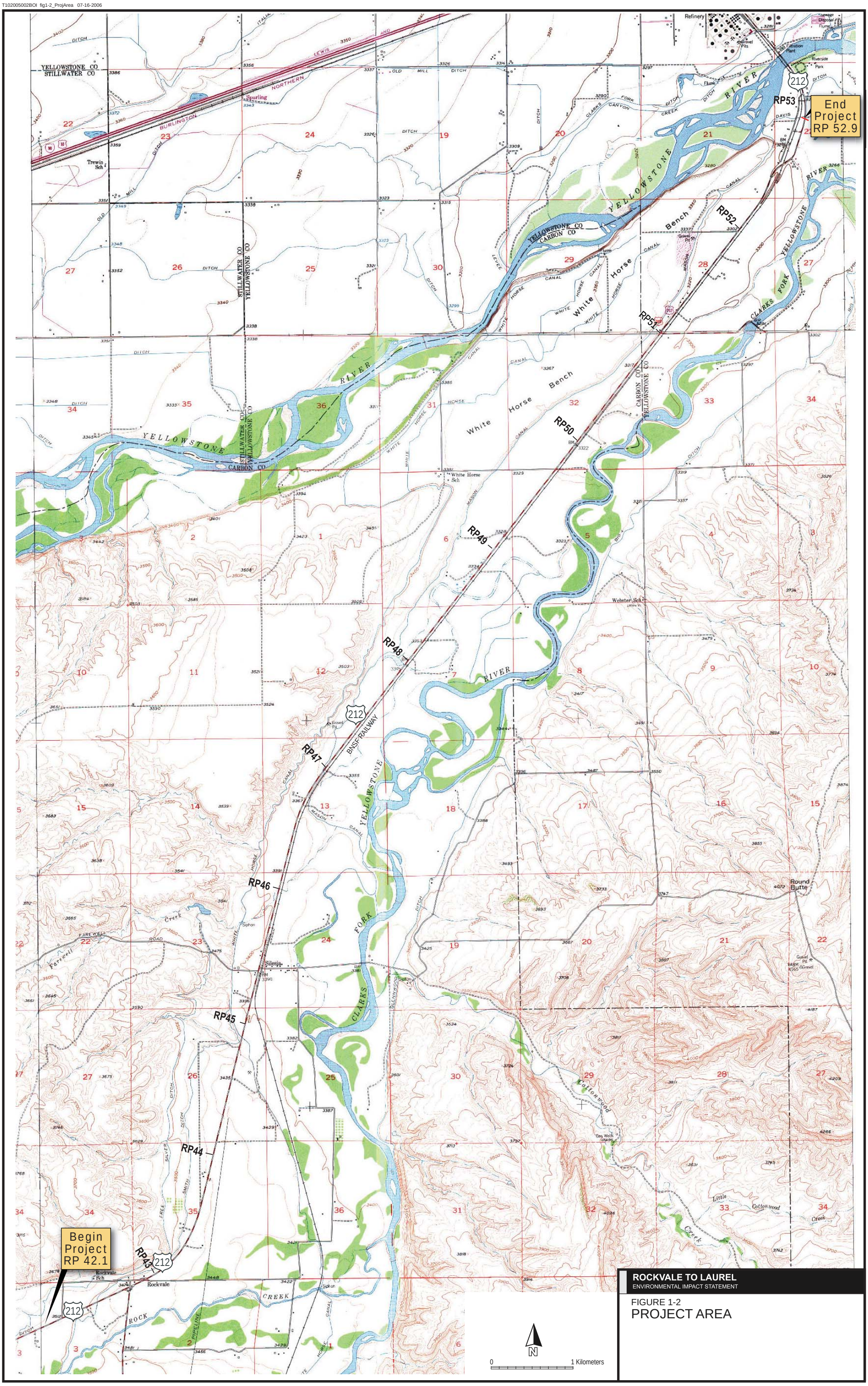


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 1-1
PROJECT LOCATION MAP

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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 1-2
PROJECT AREA

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- Traffic becomes backed up on this rural highway. Reasons for these traffic delays include:
  - It is a two-lane highway.
  - The Burlington Northern Santa Fe (BNSF) Railway tracks are close to the highway. The distance for storing vehicles stopped between US 212 and railroad crossings (vehicle storage distance) is inadequate. Therefore, when waiting for trains to pass, vehicles trying to turn on to side roads are sometimes forced to remain on US 212. These stopped vehicles interfere with through traffic movement because through traffic often cannot safely pass them.
- This portion of US 212 would be hard to modify because its right-of-way is physically constrained.
  - Beginning at Silesia and continuing north, the BNSF Railway closely parallels US 212 to the east.
  - To the west, a ridge separates the road from a plateau above US 212. Between US 212 and the ridge are several residences that receive direct access from US 212 or local connecting roads to US 212.

1.2 Purpose

The purpose of the proposed project is to:

- Improve safety for local and regional traffic needs
- Accommodate capacity needs for local and regional travelers over the next 20 years and beyond using prudent planning principles
- Accommodate the variety of transportation needs along US 212, including local circulation and access for residents with existing access needs
- Support mobility of goods and people connecting I-90 with the rural communities of Silesia, Rockvale, Red Lodge, and Bridger, and with destinations in Wyoming

1.3 Need

The following critical needs for improving the US 212 transportation corridor between Rockvale and Laurel have been identified:

- There is conflict between local and regional traffic needs, including slow versus faster travel desires, sightseeing versus destination-oriented driving, and frequent stops versus through connectivity with other portions of the NHS.
- Accidents are most frequently located at points of access (such as driveways and local roadways connecting to US 212) and stationary objects.
- The accident-severity rate and the truck-involved accident rate exceed statewide averages.

- The existing two-lane US 212 is undersized for carrying anticipated traffic volumes in the next 20 years and beyond.
- The distance for storing vehicles stopped between US 212 and railroad crossings (vehicle storage distance) is inadequate.
- Residential development and other physical features constrain the ability to widen the existing right-of-way within the project area.

The following sections of this chapter provide details supporting the Purpose and Need for the project.

1.3.1 Physical Deficiencies of the Existing Roadway

Within the project limits, US 212 has several physical deficiencies and capacity limitations.

- **Narrow Shoulders.** The existing roadway has two driving lanes, each with a minimum width of approximately 3.7 meters (m) (12 ft). The shoulders are 1.2-m (4-ft) wide. MDT's Geometric Design Criteria Route Segment Plan calls for 2.4-m (8-ft) shoulders.
- **Sight Distances.** The terrain along this part of US 212 is generally level. However, approximately 20 percent of the road traverses through hills and valleys. In these areas, the highway fails to meet applicable MDT and American Association of State Highway and Transportation Officials (AASHTO) standards for sight distances, and three of the 54 vertical curves do not meet minimum standards.
- **Railroad Underpass Deficiencies.** An existing railroad underpass near the proposed project's northeasterly end poses both sight-distance and vertical-clearance deficiencies.
- **No-Passing Zones.** Approximately 7.7 km (4.8 mi), or 47 percent of the roadway within the project limits, is currently marked with no-passing zones.
- **Lack of Turning Lanes.** The existing roadway alignment was designed in 1949. There are no turning lanes to remove left-turning movements from the travel way within the project area except at the junction of US 212 and US 310 in Rockvale.
- **Many Access Points.** There are approximately 103 access points (driveways and local roadways) connecting to US 212 throughout the project area. This is an average of about one access point per 175 m (570 ft). Sixty access points are concentrated in the northernmost 6.4 km (4.0 mi), which is about one access point per 105 m (350 ft).
- **Physical Constraints.** Topography and private property constrain the roadway on the west side. The east side is constrained by the BNSF Railway tracks from Silesia to Laurel.
- **Inadequate Vehicle Storage Space.** The storage space for vehicles on local access roads between US 212 and the railroad tracks is not adequate. Currently, the distance varies from 14.4 to 22.9 m (47 to 75 ft). In other words, while waiting for trains to pass, there is only room for from one to three vehicles on access roads. Other vehicles waiting to turn onto the access roads must remain on US 212, thereby stopping through-traffic movement. In some locations, the access roads provide inadequate storage for one tractor-trailer vehicle.

1.3.2 Transportation Demand

As part of the NHS, the portion of US 212 addressed by the proposed project is an important connection between I-90 in Laurel and the Red Lodge and Yellowstone Park recreational areas. Additionally, it connects to Bridger, Montana, and the state of Wyoming. Thus, the transportation demand reflects the need to provide both local and regional mobility of goods and people.

Annual average daily traffic (AADT) volumes in 2000 ranged from 5,160 vehicles per day (vpd) at the south end of the project (north of the junction with US 310) to a maximum of 5,900 vpd at the Yellowstone/Carbon county line. Approximately 8 percent of the volume is classified as truck traffic, which includes both small commercial trucks and large trucks. The forecasts were provided by MDT and are based on 10-year historic traffic counts and an annual traffic growth rate of 2.75 percent between 2003 and 2025. Based on the 2.75 percent growth rate, the AADTs in 2025 are forecast to be 11,590 vpd at the junction of US 212 and US 310 at Rockvale and 13,250 vpd at the Yellowstone/Carbon county line. Increased traffic volumes will occur regardless of future improvements to the transportation system. These AADTs translate into a design hourly volume (DHV) of 1,590 vehicles per hour (vph) (2025). Trucks make up 7.7 percent of the design-hour traffic. Figure 1-3 shows US 212 traffic data and demand on the existing roadways. Figure 1-4 shows historic traffic growth.

Recent updates to the above-noted traffic data indicate that the AADT volume in 2005 was 6,800 vpd, while the forecast 2030 volume is expected to increase by approximately 100 percent (to 13,565 vpd). The 2030 DHV is projected at 1,630 vph. Truck traffic as a percent of AADT is expected to remain consistent with the previous projections.

The projected change is primarily due to growth projections for residential development in Montana. Table 1-1 shows that the project area of Carbon and Yellowstone counties will be keeping pace, exceeding the statewide population percentage growth projection through 2020.

TABLE 1-1
Projected Change in Population Between 2000 and 2020[a]

Area/Year	2000	2005[b]	2010	2020	Total Percent Growth
Montana	902,195	935,670	989,190	1,092,730	21%
Carbon County	9,552	9,902	10,600	11,670	22%
Yellowstone County	129,352	136,691	145,400	161,930	25%

[a]U.S. Census Bureau, NPA Data Service, Inc., 2003.

[b]Montana Department of Commerce, Census and Economic Information Center.

1.3.3 Traffic Operations/Level of Service

Capacity analysis techniques presented in *Highway Capacity Manual 2000* (Transportation Research Board [TRB], 2000) are used to evaluate the ability of a roadway to carry existing

or future traffic demand. The specific methodology applicable to existing US 212 is that for two-lane rural highways.

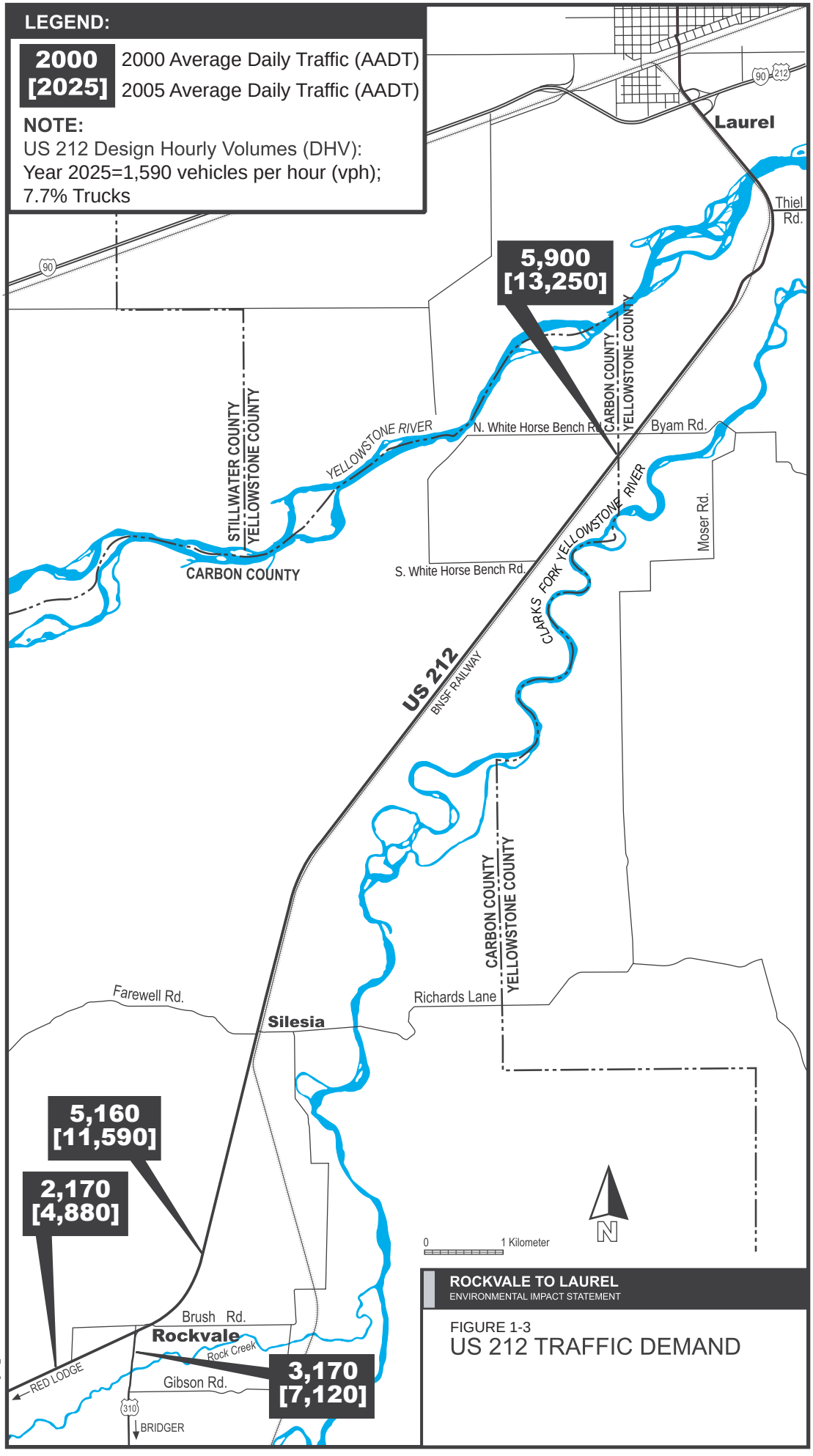
The basic premise for capacity analyses is to evaluate the ability to maintain a normal operating speed and maneuver to one's destination without interference from other traffic. For the case of a two-lane roadway, vehicles traveling in a single direction are often inhibited by the lack of passing opportunities and the volume of opposing traffic. Thus, little traffic is required to create limiting traffic conditions on two-lane roadways. The chances of encountering or following a slow-moving vehicle increase rapidly with increasing traffic volumes. Some level of freedom, and thus a higher level of service (LOS), is afforded by the ability to pass. However, passing is limited by the percent of a given length of roadway where passing is restricted (no-passing zones) and the ability to find a sufficient gap in the opposing traffic stream to make a passing maneuver. Thus, the growing volume of traffic on US 212 and the fact that 47 percent of the project area is restricted as a no-passing zone degrade capacity and ease of movement on US 212.

Capacity analysis characterizes traffic operations in terms of LOS, ranging from LOS A to LOS F. LOS A has the best traffic operations (motorists can drive at their desired speed) and LOS E represents theoretical capacity (that is, the maximum service flow rate of vehicles). Table 1-2 presents qualitative definitions of operations expected for each LOS category for a two-lane roadway. In general, the LOS is based on quantification of the percent of time spent following (PTSF) slower vehicles on the highway and average travel speed (ATS).

Evaluation of the existing traffic volumes (DHV of 850 vph in 2006) indicates current operations are at LOS D. Based on a two-way analysis, PTSF was 69.8 percent and ATS was 46.3 miles per hour (mph) for the overall 17.4-km (10.8-mi) project section. The same analysis was performed for future conditions (DHV of 1,430 vph in 2025). The 2025 projections indicated that the overall 17.4-km (10.8-mi) project section would deteriorate to LOS E, with the PTSF increasing to 81.1 percent and ATS reducing to 42.4 mph. These calculations characterize the operation of the overall corridor in general terms for a long length of highway.

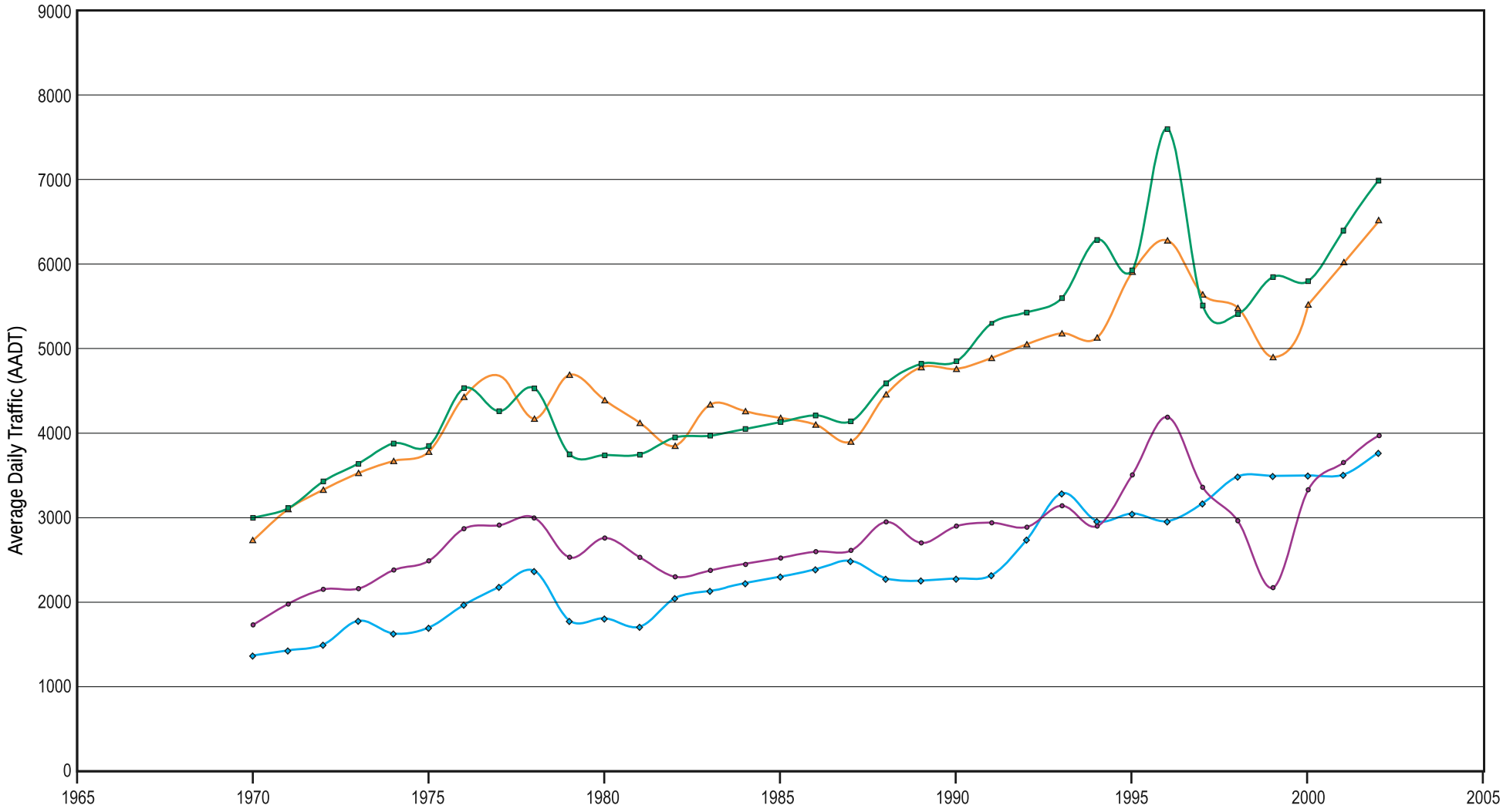
A more definitive result is obtained by evaluating shorter critical sections on a directional basis. To accomplish this, the corridor was assessed by analyzing typical representative sections at both the north and south ends.

- **Northern Section.** The nature of the corridor varies in terms of both traffic volume and abutting land uses. The northernmost section between RP 51 and RP 53 represents the section that has the largest amount of abutting-occupied properties and access points; the greatest number of accidents per mile; the highest traffic volumes; and the greatest amount of no-passing zones along the corridor. Based on the directional analysis, the 2006 LOS for this section was computed as LOS D with a PTSF of 73.7 percent and ATS of 43.9 mph. It is projected that by 2025 this section would operate at LOS E with a PTSF of 86.3 percent and ATS of 39.6 mph.


LEGEND:
2000 [2025]
2000 Average Daily Traffic (AADT)
2005 Average Daily Traffic (AADT)
NOTE:
US 212 Design Hourly Volumes (DHV):
Year 2025=1,590 vehicles per hour (vph);
7.7% Trucks
Laurel
Thiel Rd.
90
212
5,900 [13,250]
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
YELLOWSTONE COUNTY
YELLOWSTONE RIVER
N. White Horse Bench Rd.
Byam Rd.
CARBON COUNTY
S. White Horse Bench Rd.
CLARKS FORK YELLOWSTONE RIVER
Moser Rd.
US 212
BNSF RAILWAY
CARBON COUNTY
YELLOWSTONE COUNTY
Farewell Rd.
Silesia
Richards Lane
5,160 [11,590]
2,170 [4,880]
N
0
1 Kilometer
Brush Rd.
Rockvale
Rock Creek
3,170 [7,120]
RED LODGE
Gibson Rd.
310
BRIDGER
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 1-3
US 212 TRAFFIC DEMAND
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LEGEND:

- US 212/310, RP 50, at Yellowstone County line
- US 212/310, RP 43, N of Jct of US 212 & US 310
- US 212, RP 101, SW of US 310
- US 310, RP 42, S of US 212

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 1-4
HISTORIC TRAFFIC GROWTH

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- **Southern Section.** Based on the directional analysis, the lower volume and less developed southern part of US 212 between RP 44 and RP 46 was computed as LOS D with a PTSF of 72.7 percent and ATS of 46.5 mph in 2005. It is projected that by 2025 this section would operate at LOS E with a PTSF of 85.3 percent and ATS of 42.5 mph.

When there are conflicts between slow and typical traffic speeds, drivers become frustrated and impatient, sometimes performing passing movements that might result in unsafe conditions for traffic operations. MDT policy specifies LOS B as the desirable LOS for rural two-lane highways. This policy conforms with the guidelines of AASHTO as indicated in *A Policy on Geometric Design of Highways and Streets*, 4th Edition (2001).

TABLE 1-2
Level of Service (LOS) Definitions for a Two-Lane Roadway

Level of Service	Definition
A	LOS A describes the highest quality of traffic service, when motorists are able to travel at their desired speed. Without strict enforcement, this highest quality would result in average speeds of 55 mi/h or more on two-lane highways in Class I. The passing frequency required to maintain these speeds has not reached a demanding level, so that passing demand is well below passing capacity, and platoons of three or more vehicles are rare. Drivers are delayed no more than 35 percent of their travel time by slow-moving vehicles. A maximum flow rate of 490 pc/h total in both directions may be achieved with base conditions. On Class II highways, speeds may fall below 55 mi/h, but motorists will not be delayed in platoons for more than 40 percent of their travel time.
B	LOS B characterizes traffic flow with speeds of 50 mi/h or slightly higher on level-terrain Class I highways. The demand for passing to maintain desired speeds becomes significant and approximates the passing capacity at the lower boundary of LOS B. Drivers are delayed in platoons up to 50 percent of the time. Service flow rates of 780 pc/h total in both directions can be achieved under base conditions. Above this flow rate, the number of platoons increases dramatically. On Class II highways, speeds may fall below 50 mi/h, but motorists will not be delayed in platoons for more than 55 percent of their travel time.
C	LOS C describes further increases in flow, resulting in noticeable increases in platoon formation, platoon size, and frequency of passing impediments. The average speed still exceeds 45 mi/h on level-terrain Class I highways, even though unrestricted passing demand exceeds passing capacity. At higher volumes the chaining of platoons and significant reductions in passing capacity occur. Although traffic flow is stable, it is susceptible to congestion due to turning traffic and slow-moving vehicles. Percent time-spent-following may reach 65 percent. A service flow rate of up to 1,190 pc/h total in both directions can be accommodated under base conditions. On Class II highways, speeds may fall below 45 mi/h, but motorists will not be delayed in platoons for more than 70 percent of their travel time.

TABLE 1-2
Level of Service (LOS) Definitions for a Two-Lane Roadway

Level of Service	Definition
D	LOS D describes unstable traffic flow. The two opposing traffic streams begin to operate separately at higher volume levels, as passing becomes extremely difficult. Passing demand is high, but passing capacity approaches zero. Mean platoon sizes of 5 to 10 vehicles are common, although speeds of 40 mi/h still can be maintained under base conditions on Class I highways. The proportion of no-passing zones along the roadway section usually has little influence on passing. Turning vehicles and roadside distractions cause major shock waves in the traffic stream. Motorists are delayed in platoons for nearly 80 percent of their travel time. Maximum service flow rates of 1,830 pc/h total in both directions can be maintained under base conditions. On Class II highways, speeds may fall below 40 mi/h, but in no case will motorists be delayed in platoons for more than 85 percent of their travel time.
E	At LOS E, traffic flow conditions have a percent time-spent-following greater than 80 percent on Class I highways and greater than 85 percent on Class II. Even under base conditions, speeds may drop below 40 mi/h. Average travel speeds on highways with less than base conditions will be slower, even down to 25 mi/h on sustained upgrades. Passing is virtually impossible at LOS E, and platooning becomes intense, as slower vehicles or other interruptions are encountered. The highest volume attainable under LOS E defines the capacity of the highway, generally 3,200 pc/h total in both directions. Operating conditions at capacity are unstable and difficult to predict. Traffic operations seldom reach near capacity on rural highways, primarily because of a lack of demand.
F	LOS F represents heavily congested flow with traffic demand exceeding capacity. Volumes are lower than capacity and speeds are highly variable.

Source: *Highway Capacity Manual 2000* (TRB, 2000), pp. 12-16.

The existing two-lane US 212 highway portion operates at a reduced capacity, failing to meet the LOS desired by MDT in the present and the future. Conflicts between slower and faster drivers must be resolved on US 212 before LOS B or improved traffic operations can be achieved.

1.3.4 Accident History and Safety

The existing corridor has high potential for continued development that would adversely impact traffic operations. Based on current land use and access regulations, there is a high probability that safety, as well as LOS, would be adversely affected with the addition of access points along the existing corridor. Current access management policies permit the addition of access points on the existing corridor, which might exacerbate safety and capacity conditions.

Between 1990 and 2000, MDT records indicate that there were 222 reported accidents (1.00 accident per million vehicle miles) on US 212 within the project area. This rate is below the statewide average for similar highways, which is approximately 1.30 accidents

per million vehicle miles. The all-vehicle severity rate (that is, the product of the severity index and the accident rate) for the US 212 project area was 2.67, which was slightly less than the statewide average rate of 3.11. However, trucks were involved in 24 out of the 222 accidents (10.8 percent). This rate is higher than the relative percent of trucks in the current traffic flow (7.7 percent). According to average rates reported by MDT, the truck-involved accident rate of 2.74 accidents per million vehicle miles within the project area is approximately 2.7 times higher than the statewide average for NHS routes of 1.01 accidents per million vehicle miles.

The most recent 5-year period of accident data indicates that the number of crashes, as well as the severity of those crashes, has increased compared to the 10-year period from 1990 to 2000. The total accident rate in the past 5 years is now approximately equal to the current statewide average rate (1.15 accidents per million vehicle miles), while the severity rate for the past 5 years now well exceeds the statewide average (3.12 versus 2.61). The truck-involved accident rate is now 1.15 accidents per million vehicle miles.

The accident summary was prepared during two different phases of this project. During the first phase, a review from 1990-2000 was completed. During the second phase, an update to the original summary was performed for the latest complete 5 years of accident data available (2002-2006). Tables 1-3 and 1-4 summarize the reported accidents by accident type and severity for the 10-year period between 1990 and 2000 and the 5-year period between 2002 and 2006, respectively. A review of the detailed accident data indicates that many of the accidents were related to stopping and turning maneuvers at access points, such as private driveways, field approaches, and public roadways intersecting with US 212. Sideswipes, left-turn, and rear-end accidents accounted for 33 percent of the total accidents between 1990 and 2000, while sideswipes, right-angle, and rear-end accidents accounted for more than 37 percent of the total accidents between 2002 and 2006. Between 1990 and 2000, almost 40 percent of the accidents were reported as “run-off-the-road” or “fixed-object” accidents. Between 2002 and 2006, 35 percent of the accidents were reported as “run-off-the-road,” “fixed-object,” or “overturn” accidents. This suggests the need for flatter embankment slopes within a wider clear zone on either side of the road to improve safety.

In addition, over the 10-year period from 1990 to 2000, MDT formally identified several “accident cluster” sites in the project area, while there were no accident clusters identified between 2002 and 2006. Traffic safety studies have identified a number of potential improvements within the study section of US 212 that might reduce the accident potential. The conceptual solutions include:

- Adding turn lanes to reduce conflicts at the Silesia access
- Widening the shoulder and the addition of “rumble strips”
- Flattening the slope in the vicinity of RP 44 to increase sight distance
- Adding speed advisory signs on existing curve signs

Although some of these improvements have been made, full implementation of these recommendations is limited by the existing right-of-way.

1.3.5 Access

The primary factor affecting the safety, traffic operations, and overall mobility function of a highway is the number and locations of access to abutting properties and connecting streets. On two-lane highways, the number of access points per mile (that is, access density) impacts actual operating speeds, which affects the operating LOS. Table 1-5 lists the number of access points on US 212 grouped by reference posts.

TABLE 1-3
Reported Accident Characteristics on US 212 RP 42.64 to RP 53.05 from 1990 to 2000

Accident Category	Number of Accidents	US 212	Statewide
Accident Severity			
Property damage only	127	57.2%	59.7%
Incapacitating injuries	32	14.4%	14.1%
Non-incapacitating injuries	27	12.2%	11.9%
Other injuries	32	14.4%	12.3%
Fatal accidents	4	1.8%	2.0%
Total	222	100.0%	100.0%
Total resulting injuries	173		
Total resulting fatalities	7		
Accident Type			
Other	18	8.1%	
Run off road	49	22.1%	
Fixed object	38	17.1%	
Animal	27	12.2%	
Subtotal	132	59.5%	60.0%
Rear end	50	22.5%	16.5%
Sideswipe same direction	13	5.9%	4.3%
Sideswipe opposite direction	7	3.2%	2.7%
Left turn same direction	3	1.4%	0.8%
Right angle	12	5.4%	13.3%
Head-on	5	2.3%	2.2%
Total	222	100.0%	100.0%

TABLE 1-4
Reported Accident Characteristics on US 212 RP 42.64 to RP 53.05 from 2002 to 2006

Accident Category	Number of Accidents	US 212	Statewide
Accident Severity			
Property damage only	87	57.6%	65.5%
Incapacitating injuries	21	13.9%	9.6%
Non-incapacitating injuries	17	11.3%	11.2%
Other injuries	21	13.9%	11.3%
Fatal accidents	5	3.3%	2.1%
Total	151	100.0%	100.0%
Total resulting injuries	102		
Total resulting fatalities	8		
Accident Type			
Other	1	0.6%	
Run off road	19	12.6%	
Fixed object	13	8.6%	
Overturn	22	14.6%	
Animal	24	15.9%	
Subtotal	79	52.3%	65.7%
Other	5	3.3%	1.9%
Rear end	32	21.2%	14.1%
Sideswipe same direction	9	6.0%	4.1%
Sideswipe opposite direction	6	4.0%	2.7%
Right turn same direction	0	0%	0.2%
Right turn opposite direction	0	0.0%	0.1%
Left turn same direction	2	1.3%	0.9%
Left turn opposite direction	0	0.0%	1.3%
Right angle	10	6.6%	7.0%
Head-on	8	5.3%	2.0%
Total	151	100.0%	100.0%

The project area includes 103 access points, most of which (79) are residential in nature. Eleven access points are multiple-use roads, which are public roads or a public access to multiple properties. Sixty access points occur within the northernmost 6.4 km (4.0 mi). The project area also includes three accident cluster sites identified between 1990 and 2000. Within these accident cluster sites, the most frequent accidents by type were rear-end accidents, which are often caused by slow-moving vehicles turning off and on the highway.

Since approximately 47 percent of the route within the project area is designated as a no-passing zone, there is great potential for turning vehicles to inhibit traffic flow. Many of the accidents that have occurred in the project area can be related to the incompatibility of high-speed through traffic with slower vehicles accessing residential areas and farmsteads.

TABLE 1-5
Existing Highway Access Points

Access Type	Beginning at Reference Post: 43	44	45	46	47	48	49	50	51	52	Total
Total Access Points											
Multiple-Use Roads	-	1	2	1	-	1	1	2	2	1	11
Residence/Farm	6	6	5	6	1	5	6	13	24	7	79
Subtotal	**6**	**7**	**7**	**7**	**1**	**6**	**7**	**15**	**26**	**8**	**90**
Field Access	1	2	1	1	1	-	-	-	1	2	9
Other	1	1	1	-	-	-	-	-	1	-	4
Subtotal	**2**	**3**	**2**	**1**	**1**	**-**	**-**	**-**	**2**	**2**	**13**
Total	**8**	**10**	**9**	**8**	**2**	**6**	**7**	**15**	**28**	**10**	**103**
Railroad Crossing Access Points											
Multiple-Use Roads	-	-	1	-	-	1	-	-	1	-	3
Residence/Farm	-	-	-	2	-	3	2	3	2	1	13
Subtotal	**-**	**-**	**1**	**2**	**-**	**4**	**2**	**3**	**3**	**1**	**16**
Field Access	-	-	-	1	1	-	-	-	-	1	3
Other	-	-	-	-	-	-	-	-	-	-	0
Subtotal	**-**	**-**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**3**
Total	**-**	**-**	**1**	**3**	**1**	**4**	**2**	**3**	**3**	**2**	**19**

The MDT District Office is responsible for approving modifications of existing access points and for granting new access points onto the highway. Abutters seeking to obtain new or improved access points must acquire a permit and comply with the requirements of MDT as defined in *Approach Standards for Montana Highways* (1983). The intent of the regulations is to provide for reasonable and safe access to highways while preserving the safety and utility of the highway to the maximum extent practicable. The regulations do not apply to existing access unless a change to that access is to be made. Because of the large amount of existing agricultural and undeveloped frontage along the highway, the potential exists for additional access points as well as for increased side-street and access-oriented traffic volumes. As the number of driveways and other access points along a highway increases, accident rates increase.

AASHTO has shown that for an undivided rural highway with 10 access points per mile, the accident rate would increase by 50 percent if the number of access points were to increase to 30 per mile (2001). AASHTO has further suggested that some degree of access management

should be included in the development of a street or highway, particularly on a new facility where the potential for development exists. Along the northernmost section of US 212 near Laurel, the greatest proliferation of access points exists on the west side of the highway. This concentration of access points represents almost an urban access condition. The higher number of access points correlates to the higher number and frequency of accidents along the north end of the corridor.

Table 1-5 also lists the number of access points that cross the BNSF Railway tracks, which are adjacent and parallel to US 212 north from Silesia. The proximity of the railroad tracks to the roadway varies from only 19.8 m (65 ft) to 33.5 m (110 ft). Nineteen access points cross the railroad tracks, three of which are multiple-use roads. The BNSF Railway (which was previously known as the Rocky Fork Branch of the Northern Pacific Railroad) currently operates 10 or fewer trains per day, with an average of 100 cars per train. At 72 kilometers per hour (km/h) (45 mph), it is estimated that a train could impact each of the 19 crossings for 2 to 3 minutes. When this occurs, because the vehicle storage distance between the railroad tracks and US 212 is too short, there is the potential for waiting vehicles to back up onto US 212. US 212 does not have adequate shoulder width for accommodating waiting vehicles stopped outside of the through-traffic lanes on US 212. In addition, large trucks or several vehicles waiting in line can also occupy a railroad grade crossing while waiting to enter US 212, potentially blocking the railroad crossing. This problem will become more frequent as side road and mainline road traffic increases. Thus, the number of crossings and their proximity to US 212 represent an existing and potential safety problem.

Improving clear zones (that is, the roadside border area available for safe use by errant vehicles) and widening the roadway would require a wider right-of-way. The railroad tracks to the east and the many residences to the west of US 212 restrict the potential for improvements along the existing alignment. Therefore, alternative alignments for US 212 to meet the improvement needs of the highway should be considered.

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CHAPTER 2 ALTERNATIVES

2.1 Introduction

After gathering initial comments from interested members of the public and from federal and state regulatory and cooperating agencies (agencies), MDT and FHWA developed a full range of alternatives to address the Purpose and Need for the proposed project. The preliminary alternatives were presented during public scoping to gather additional comments from the public. After reviewing public input and evaluating engineering feasibility, safety, and environmental considerations for each alternative, MDT and FHWA screened and modified the preliminary alternatives based on the public's comments. The modified alternatives were then carried forward for detailed analysis.

More than any other factors, the alternatives considered must meet the project's purpose as defined in *Chapter 1, Purpose and Need.* The purpose of the proposed project is to improve safety for local and regional traffic needs, accommodate capacity needs, accommodate local circulation and access needs, and support the regional mobility of goods and people.

This chapter includes the following sections:

- Alternative Development and Evaluation
- Alternatives Considered
- Comparison of Build Alternatives
- Alternatives Considered but Eliminated from Detailed Analysis
- Basis for Recommending the Preferred Alternative
- Permits and Other Governmental Actions

2.2 Alternative Development and Evaluation

The development of the alternatives was structured to meet the project purpose statements (see *Chapter 1, Purpose and Need*). Table 2-1 lists considerations in the process related to developing reasonable alternatives for meeting the project purpose (for example, expanded typical sections incorporating added lanes to meet capacity and passing safety needs; access management strategies; and so forth).

TABLE 2-1
Developing Reasonable Alternatives to Meet Project Purpose

Purpose Statement	Method for Meeting Objective
Improve safety for local and regional traffic needs.	Apply MDT standards and implement access management strategies.
Accommodate capacity needs for local and regional travelers over the next 20 years and beyond using prudent planning principles.	Provide typical section options to meet the capacity need over the next 20 years. (MDT policy requires that acceptable operating LOS be achieved in the design year [future year]).

TABLE 2-1
Developing Reasonable Alternatives to Meet Project Purpose

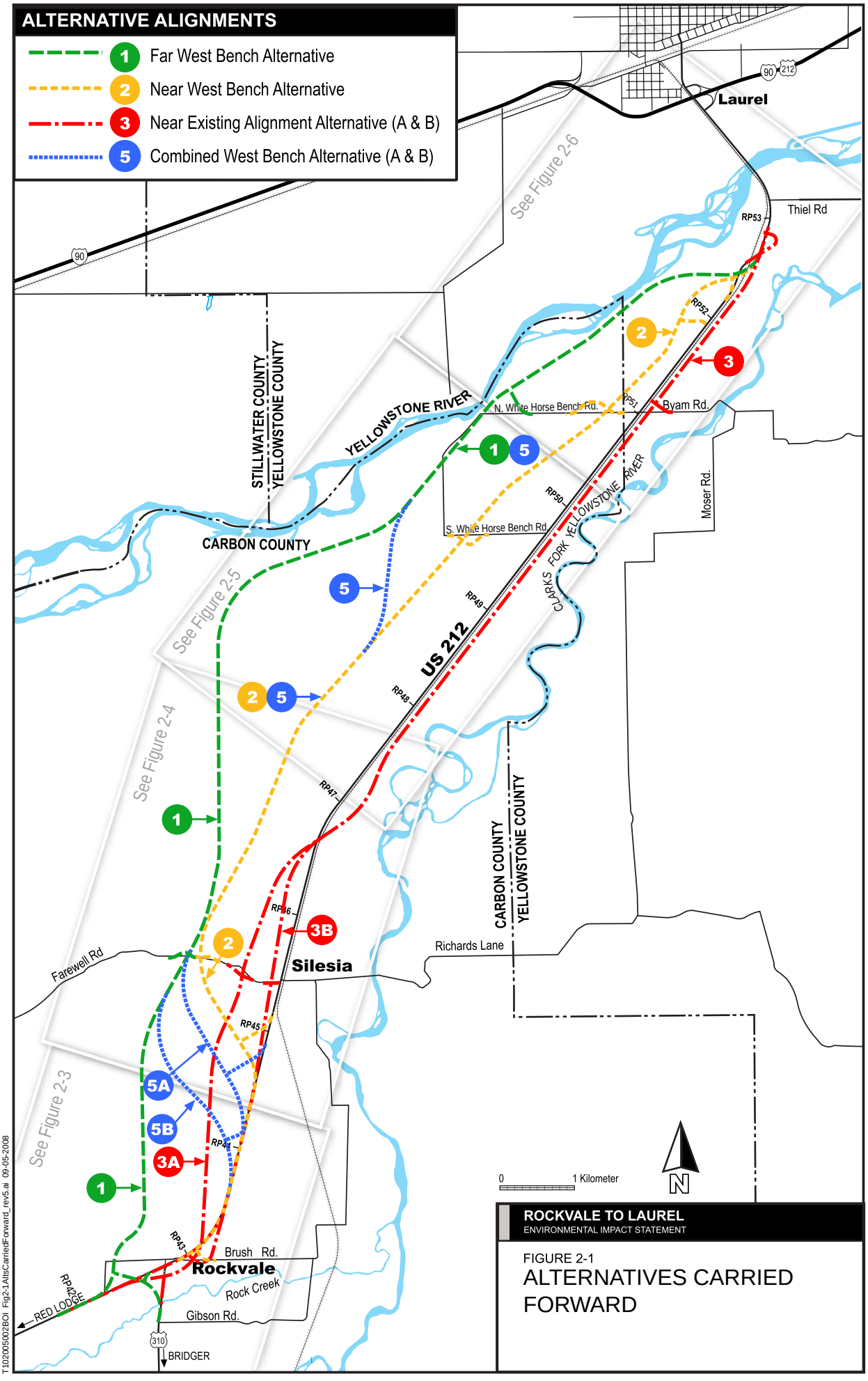
Purpose Statement	Method for Meeting Objective
Accommodate the variety of transportation needs along US 212, including local circulation and access for residents with existing access needs.	Apply access management (that is, concentrate and minimize points of access) for the regional traffic corridor and reduce left-turn conflicts for local access roads.
Support mobility of goods and people connecting I-90 with the rural communities of Silesia, Rockvale, Red Lodge, and Bridger, and with destinations in Wyoming.	Continue to connect key destinations for both local and regional traffic flow.

MDT and FHWA identified three general corridors for locating proposed new alignments—the West Bench, the East Bench, and the Existing Alignment. MDT and FHWA developed four preliminary build alternative alignments to potentially satisfy the Purpose and Need of the proposed project.

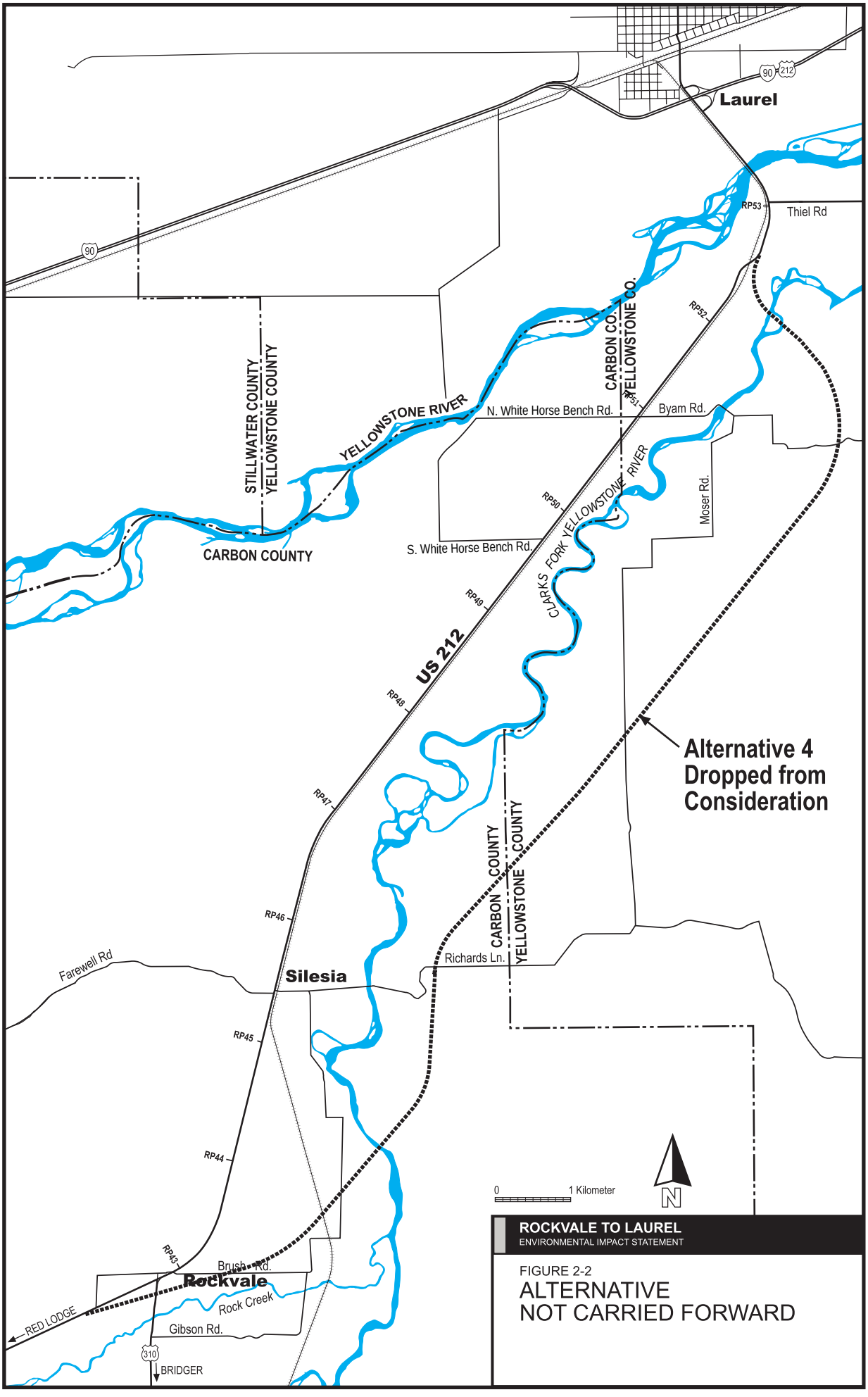
The build alternative alignments MDT and FHWA identified were presented to the public and agencies to obtain comments, suggestions, and concerns about their desirability or feasibility and to identify planning issues associated with each corridor. Based on public comment, a build alternative with combined elements of two previous build alternatives was developed (Alternative 5A). Subsequent comments from affected landowners resulted in the development of a sixth build alternative (Alternative 5B [preferred]), also combining elements of two previous build alternatives. Through this process, the following nine alternatives were identified:

- No Build Alternative
- Transportation System Management and Transportation Demand Management (TSM/TDM) Alternative
- Existing Alignment
- Alternative 1–Far West Bench
- Alternative 2–Near West Bench
- Alternative 3–Near Existing Alignment (two variations)
  - Alternative 3A–Deviates north at RP 43.1 then parallels presently traveled way (PTW)
  - Alternative 3B– Deviates north at RP 44.4 then parallels PTW (closest to existing alignment)
- Alternative 4–East Bench
- Alternative 5–Combined West Bench (two variations)
  - Alternative 5A–Departs US 212 at RP 44.1
  - Alternative 5B (Preferred)–Departs US 212 at RP 43.7

A No Build Alternative, the TSM/TDM Alternative, and build alternatives 1 through 4 (Figures 2-1 through 2-6) were presented for comment to the public, including state and federal agencies. Combinations of the West Bench alternatives, and Alternatives 5A and 5B (preferred) were presented to the affected neighborhood groups.

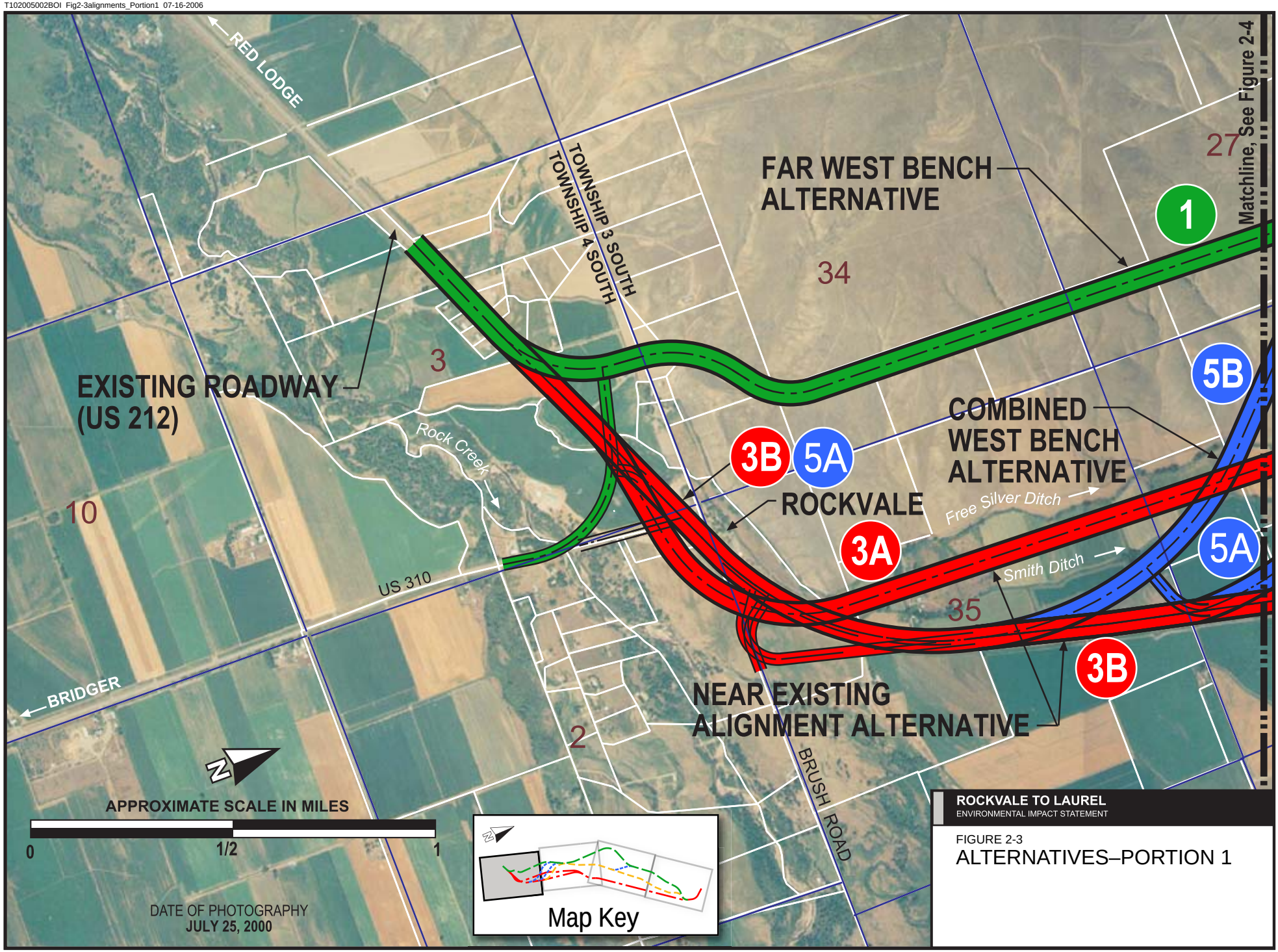

ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Laurel
90
212
See Figure 2-6
See Figure 2-5
See Figure 2-4
See Figure 2-3
Thiel Rd
RP53
RP52
RP51
RP50
RP49
RP48
RP47
RP46
RP45
RP44
RP43
RP42
STILLWATER COUNTY
YELLOWSTONE COUNTY
YELLOWSTONE RIVER
N. White Horse Bench Rd.
Byam Rd.
S. White Horse Bench Rd.
CARBON COUNTY
CLARKS FORK YELLOWSTONE RIVER
Moser Rd.
US 212
Richards Lane
Farewell Rd
Silesia
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
RED LODGE
BRIDGER
310
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 2-1
ALTERNATIVES CARRIED FORWARD
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Laurel
90
212
RP53
Thiel Rd
RP52
CARBON CO.
YELLOWSTONE CO.
RP51
Byam Rd.
N. White Horse Bench Rd.
YELLOWSTONE RIVER
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
S. White Horse Bench Rd.
RP50
CLARKS FORK YELLOWSTONE RIVER
Moser Rd.
RP49
US 212
RP48
RP47
Alternative 4
Dropped from
Consideration
CARBON COUNTY
YELLOWSTONE COUNTY
RP46
Richards Ln.
Farewell Rd
Silesia
RP45
RP44
RP43
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
310
BRIDGER
RED LODGE
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 2-2
ALTERNATIVE
NOT CARRIED FORWARD
T032005002BOI

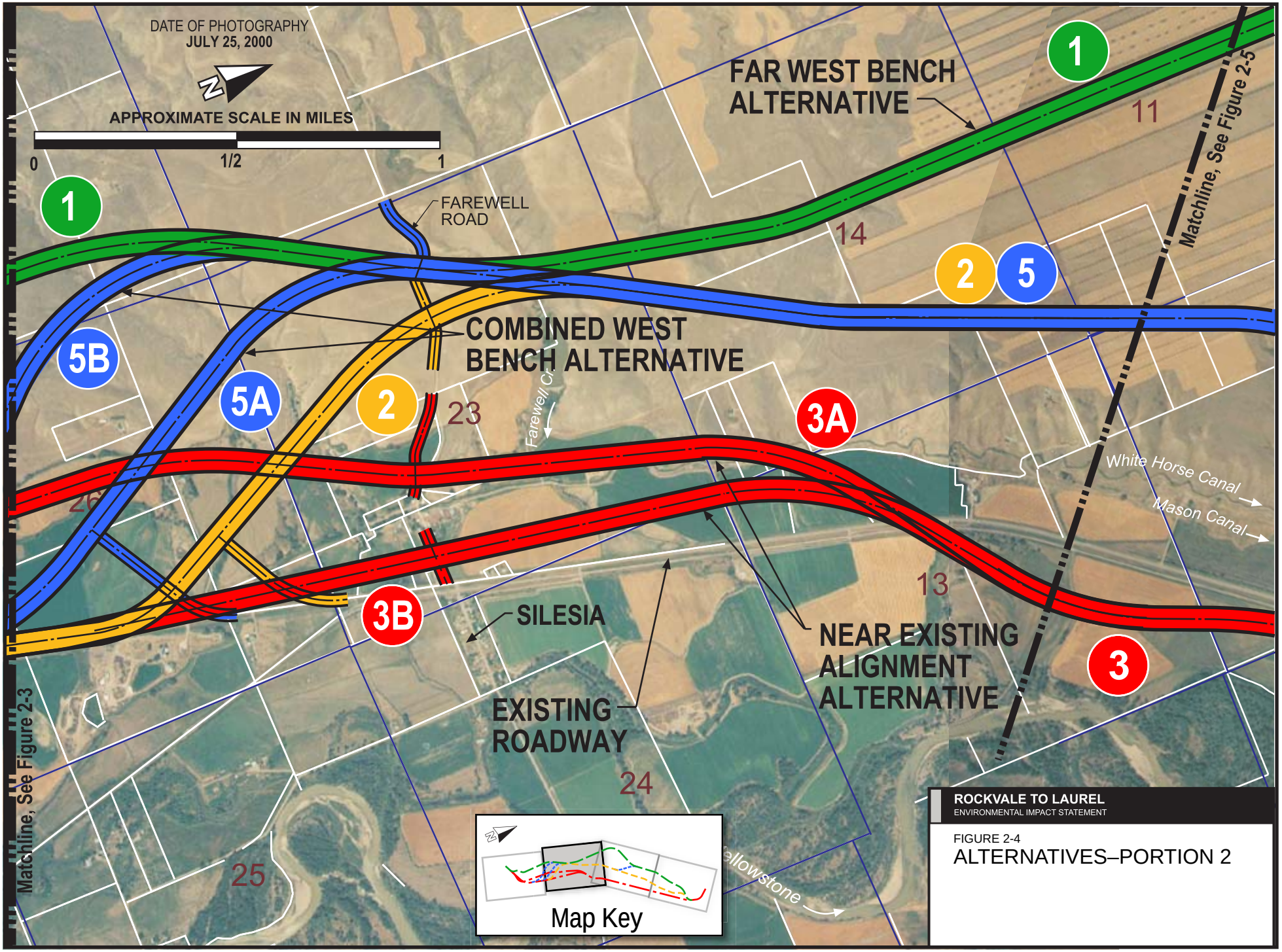
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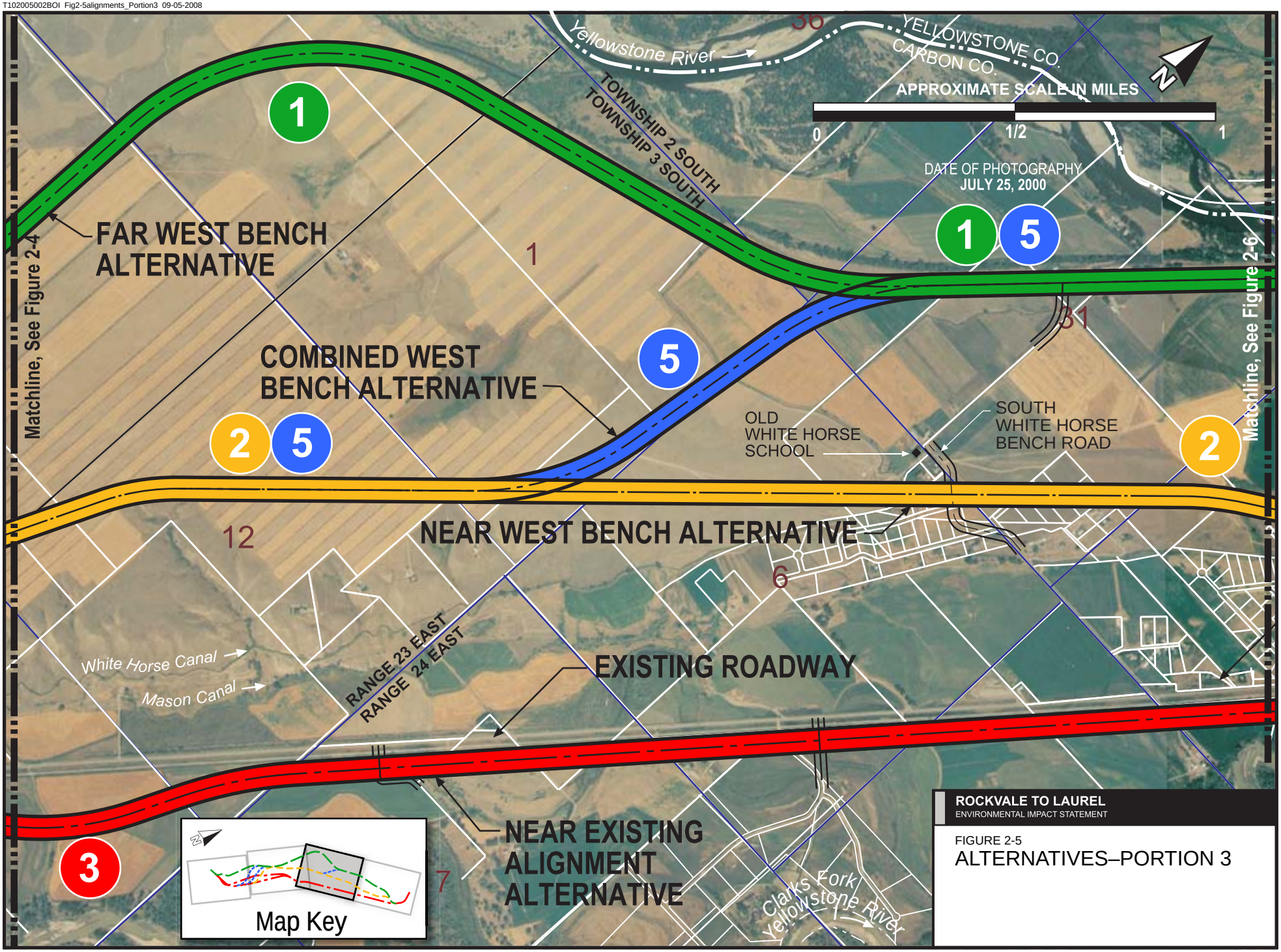


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 2-4
ALTERNATIVES–PORTION 2

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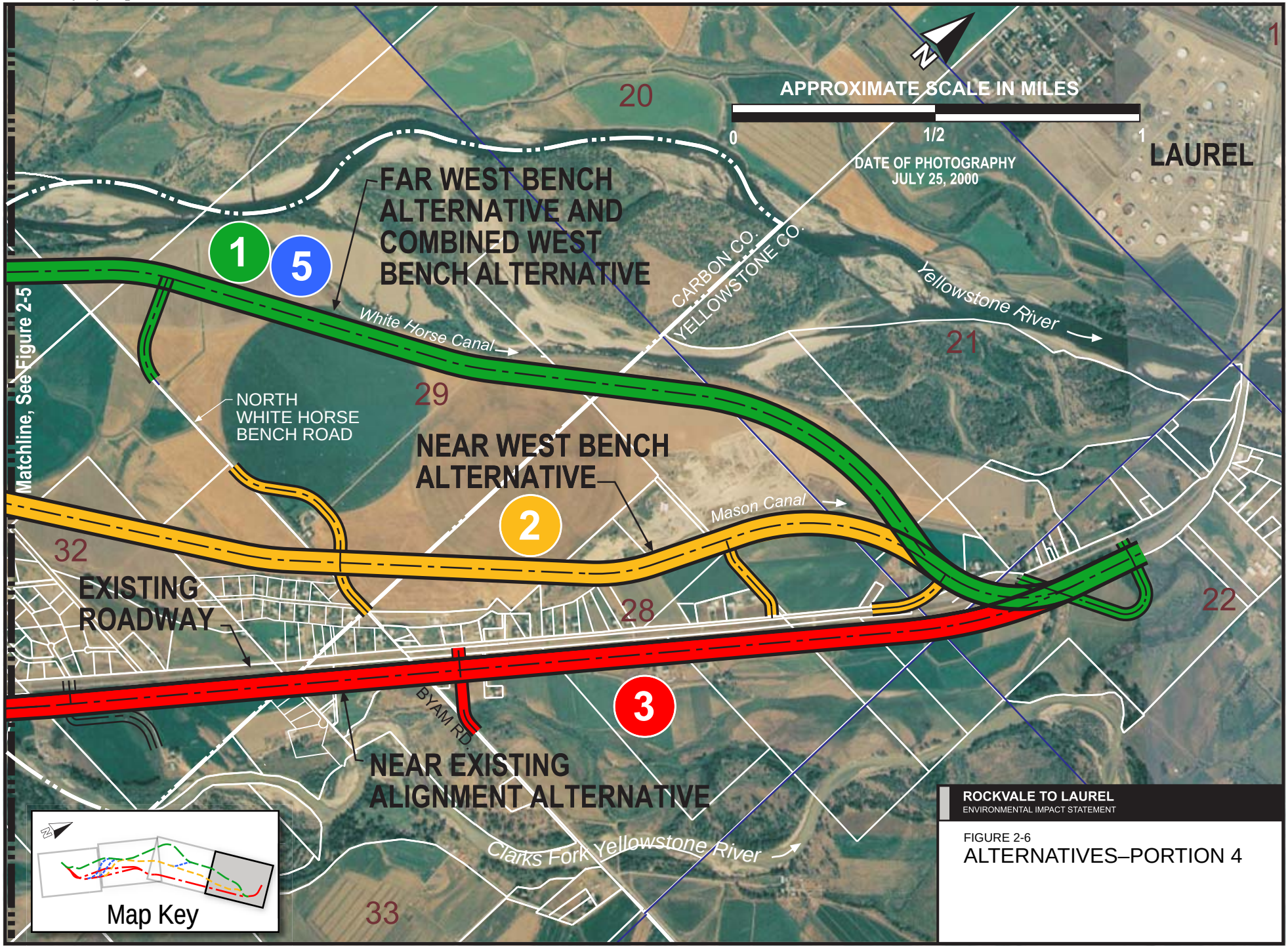


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 2-5
ALTERNATIVES–PORTION 3

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With implementation of the No Build Alternative, the existing roadway alignment and two-lane configuration of US 212's PTW would be maintained, but not improved. The No Build Alternative was used as a basis for comparing impacts related to the build alternatives.

Immediately following the December 12, 2000, public scoping meeting, the TSM/TDM Alternative, the Existing Alignment Alternative ("US 212"; Figure 2-2), and Alternative 4—East Bench (Figure 2-2) were discarded from further consideration. These three alternatives did not meet the Purpose and Need of the project. In addition, there was strong concern over the environmental effects of Alternative 4, which was the only alternative that would cross the Clarks Fork Yellowstone River. Right-of-way concerns, property impacts, and relocations were concerns for the Existing Alignment Alternative. (For additional information, review *Section 2.5, Alternatives Considered but Eliminated from Detailed Analysis*).

Each of the remaining six build alternatives were further developed to meet MDT standards as appropriate; explore the best lane configurations, widths, and medians in the typical section; and apply access-management techniques (including consolidation of access points). The following text describes these evaluations and decisions.

2.2.1 MDT Standards

MDT has developed standards for proposed projects so that taxpayer investment in the transportation system is used to develop safe and efficient highways. Although standards are subject to exceptions or revisions, their use at this stage was necessary to quantify environmental impacts. The following features for Rural Principal Arterials on the NHS (MDT, 2004) were applied to the alternatives. (Note that these features are subject to periodic changes.)

- **Level of Service.** Federal guidelines recommend that the acceptable operating LOS to be achieved in the design year (future year) is LOS B as defined by the *Highway Capacity Manual 2000* (TRB, 2000).
- **Roadway Pavement Width.** For normal travel lanes with a width of 3.6 m (12 ft), inside shoulders (where required) are 1.2-m (4-ft) wide for separated roadways and outside shoulders are 2.4-m (8-ft) wide.
- **Estimated Speed.** A conceptual vertical and horizontal alignment based on a 110 km/h (70 mph) estimated speed through level terrain and a 100 km/h (60 mph) estimated speed through rolling terrain. (Note that these estimated speeds relate to other design parameters such as sight distance; lane and shoulder widths; superelevation rates; grades; and degree of curvature. They do not establish and/or otherwise imply the actual posted speed limits for an alternative.)
- **Grades.** The vertical alignments involving hills and valleys are proposed with a 3 percent maximum grade in level terrain, a 4 percent maximum grade in rolling terrain, and a 0.4 percent minimum grade in curb and gutter areas.
- **Curves.** Horizontal alignments with 505-m (1,657-ft) minimum radius curves in level terrain and 395-m (1,296-ft) minimum radius curves in rolling terrain are intended.
- **Sight Distances.** A minimum stopping sight distance of 180 m (590 ft) for an estimated speed of 110 km/h (70 mph) and 160 m (525 ft) for an estimated speed of 100 km/h (60 mph).

- **Right-of-Way.** A right-of-way or easement recommendation of 40 m (130 ft) on either side of the proposed centerline or to the construction limits plus 3 m (10 ft), whichever is greater.
- **Superelevation.** A maximum conceptual superelevation rate of 8 percent is proposed for those "minimum radius curves" listed previously.
- **Rumble Strips.** Appropriately placed "rumble strips" are proposed for the shoulders to improve driver safety by inducing minor but noticeable vibration with noise while a vehicle's tires roll over them. Based on MDT standards for NHS routes (MDT, 2004), the rumble strips are 0.3-m (1-ft) wide, offset from the travel lanes by 15 centimeters (cm) (6 inches [in]), and have periodic spaces to allow bicyclists to cross the strips.

2.2.2 Typical Sections

A typical section is used to show the relative location and dimensions of the features of a roadway and its components (including lanes, shoulders, drainage ditches, and medians) and how the slopes outside the roadway will be constructed. In developing the build alternatives, traffic operations on US 212 were evaluated for various typical-section configurations based on MDT standards (MDT, 2004). Two-lane, two-lane with passing lanes, and four-lane sections were analyzed to determine which typical section would meet the capacity needs through 2025. The analysis was performed using methodologies of the *Highway Capacity Manual 2000* (TRB, 2000) and using version 4.1d of the Highway Capacity Software HCS2000. For comparison, a two-lane-with-passing-lanes section was analyzed for the existing alignment and conditions. Table 2-2 shows the results of that analysis and a two-lane-with-passing-lanes typical section on Alternative 5B (preferred). Alternative 5B (preferred) is representative of all proposed build alternatives, all of which would be designed equally to meet MDT design standards (MDT, 2004) and similar levels of access. Table 2-2 also includes the LOS results for the existing two-lane roadway discussed in detail in *Chapter 1, Purpose and Need.*

TABLE 2-2
Comparison of LOS Analysis for Two-Lane, Two-Lane-with-Passing-Lanes, and Four-Lane Typical Sections of US 212

Alignment	Year	Two-Lane Typical Section LOS	Two-Lane-with-Passing-Lanes Typical Section LOS	Four-Lane Typical Section LOS
Existing (northern portion)	2006	D	C	NA
Existing (northern portion)	2025	E	D	NA
Existing (southern portion)	2006	D	C	NA
Existing (southern portion)	2025	E	C	NA
Alternative 5B (preferred), which represents all build alternatives	2006	C	B	A
Alternative 5B (preferred), which represents all build alternatives	2025	D	C	A

NA = not applicable

In accordance with MDT policy for rural two-lane highways, the LOS for new facilities should meet LOS B conditions to the extent practicable. The following factors were considered related to the LOS analysis:

- **Two-Lane and Two-Lane-with-Passing-Lanes Typical Section.** The capacity of the existing two-lane highway is considerably limited by heavy traffic where oncoming traffic reduces the opportunity to use the limited passing zones to pass slower traffic. Adding an additional through lane in each direction overcomes these problems and produces a considerable increase in capacity, LOS, and safety beyond a mere doubling of the two-lane capacity. The analysis demonstrates that a two-lane-with-passing-lanes typical section cannot meet LOS B conditions. More importantly, this typical section does not address safety considerations or conflicts between local and regional traffic flow. Therefore, the two-lane and two-lane-with-passing-lanes typical sections were not developed into build alternatives.
- **Four-Lane Typical Section.** The essential element of all of the build alternatives is the provision of two through lanes in each direction, providing a four-lane facility on a new alignment.
- **Medians.** The typical section for a multilane highway is also determined by the size and type of median. Non-traversable medians might be accommodated in less width than traversable medians.
- **Right-of-Way.** The width of the right-of-way was a concern for many local residents who desired both to improve the safety of the highway through reconstruction and to minimize the amount of right-of-way needed for construction. MDT responded to this request by establishing the minimum right-of-way width and appropriate typical sections for the needs of specific conditions.

A variety of potential typical sections were investigated to determine the most appropriate sections for new alignments, for existing US 212, and for a key connection with US 310. Table 2-3 summarizes the typical sections considered, Figure 2-7 shows the 80-m footprint (260-ft footprint) for an 11-meter median typical section (100-ft section), and Figure 2-8 illustrates each section.

Over the life of a roadway, pavement overlays are added that can cause the width of cut-and-fill slopes to be wider. MDT's policy is initially to construct the roadway wide enough to accommodate the planned number of overlays. Each section would be built 0.8 m (2.6 ft) wider than shown in order to accommodate future pavement overlays without effectively decreasing the shoulder width. The analysis of impacts for all build alternatives is based on this wider section. The final determination for additional width will be made in final design.

TABLE 2-3
Typical Sections under Consideration

Name[a]	Width of Typical Section under Consideration	Key Features of the Typical Section
11-meter Median Typical Section US 212[b] (100-ft Section)	30.2 m (100 ft)	• Four 3.6-m(12-ft) travel lanes • Two 2.4-m (8-ft) shoulders • 11-m (36-ft) depressed median including two 1.2-m (4-ft) shoulders
5-meter Median Typical Section US 212 (80-ft Section)	24.2 m (80 ft)	• Four 3.6-m (12-ft) travel lanes • Two 2.4-m (8-ft) shoulders • 5-m (16.4-ft) flush median to include turning movements
No Median Typical Section US 212 (64-ft Section)	19.2 m (64 ft)	• Four 3.6-m (12-ft) travel lanes • Two 2.4-m (8-ft) shoulders • No median or turning lanes
Typical Section Existing US 310 (40-ft Section)	12 m (40 ft)	• Two 3.6-m (12-ft) travel lanes • Two 2.4-m (8-ft) shoulders • No median
Typical Section Existing US 212 (32-ft Section)	9.64 m (32 ft)	• Two 3.6-m (12-ft) travel lanes • Two 1.22-m (4-ft) shoulders • No median

[a]Name of section corresponds with the name on Figure 2-8. Name in parenthesis is the name presented to the public.

[b]Denotes the preferred typical section for the majority of the new alignment. However, for safety purposes, some geographical conditions or access requirements might require a different typical section.

2.2.2.1 11-meter Median Typical Section

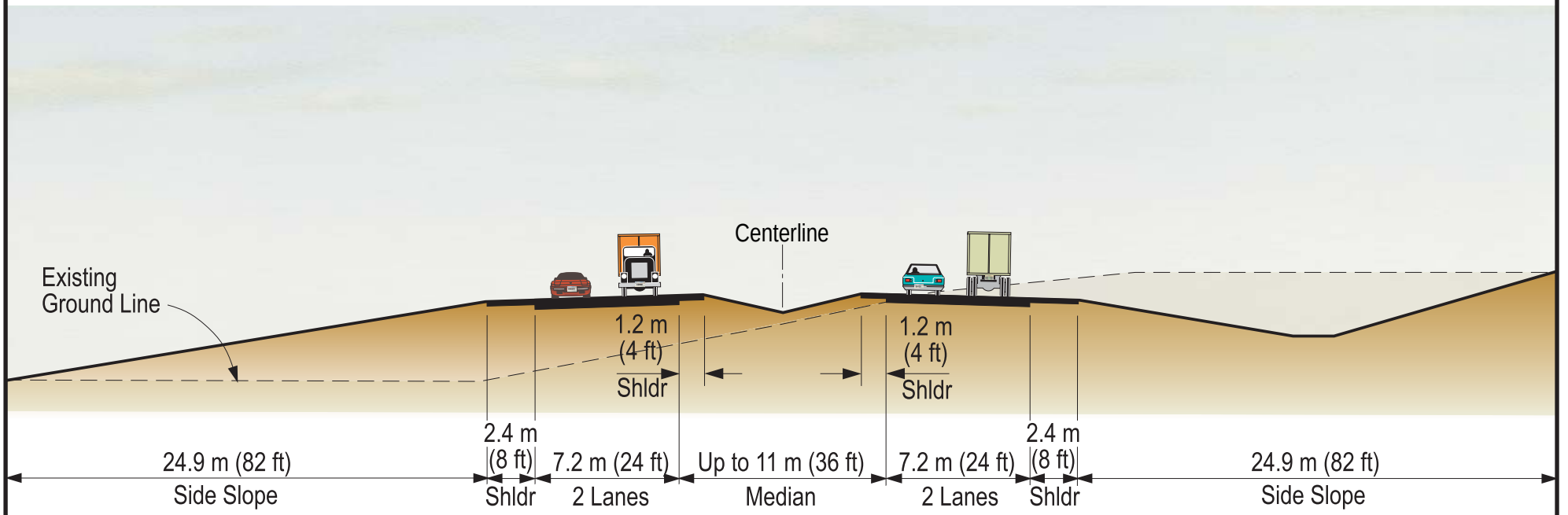
The 11-meter Median Typical Section for US 212 (Figure 2-8) was presented to the public as the "100-ft Section." The median would be depressed, except in intersection and access areas. Left-turn bays would be provided at major intersections. Medians could be raised where snow depths would make intersection limits difficult to observe or otherwise clearly delineate. During final design, the intersection at the PTW and the build alternative would be reviewed to check that it would accommodate access and crossings of large farm equipment or trucks. The median might need to be expanded to 30 m (98 ft) to accommodate vehicle storage within the median (see *Appendix A*, Figures A-5a, A-7, A-11, A-13, A-15, A-17, and A-18). The 11-meter Median Typical Section would be preferred on the majority of the build alternatives in rural, open areas because it provides for a safer highway, improved access management, and capacity for both local and regional traffic needs. According to National Cooperative Highway Research Program (NCHRP) Report 375, *Median Intersection Design* (TRB, 1995), research shows that accident rates at rural unsignalized intersections decrease as the median width increases. Factors considered in the selection of median width include storage of vehicles making left turns to improve safety and capacity and improved intersection sight distance resulting from the ability to offset opposing left-turn lanes.

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80-Meter Footprint (260-Foot Footprint)

An area wide enough to allow for many roadway features that ***could*** be part of the proposed roadway under ***typical*** terrain conditions.

Based on 11-Meter Median Typical Section (100-Foot Section)

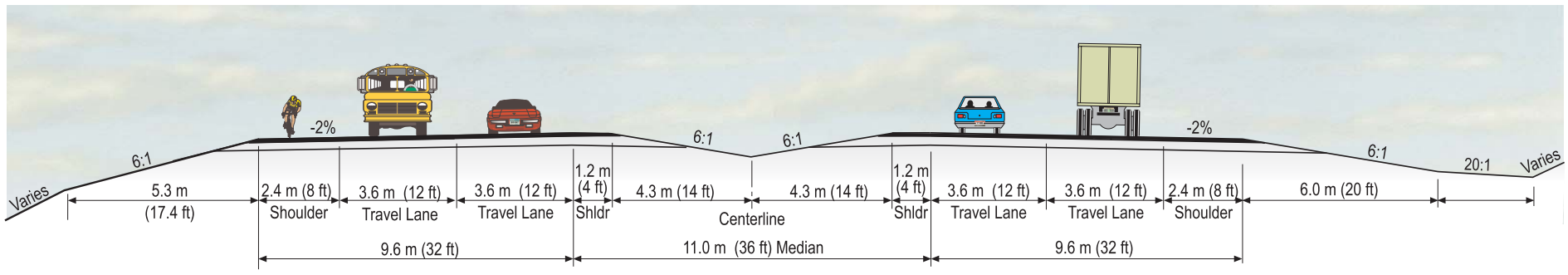


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

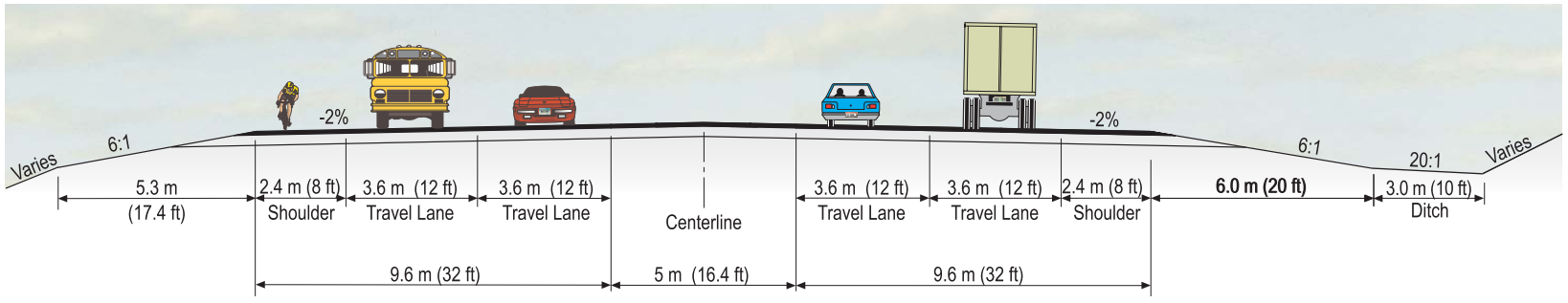
FIGURE 2-7
80-METER FOOTPRINT (260-FOOT FOOTPRINT) FOR AN 11-METER MEDIAN TYPICAL SECTION (100-FOOT SECTION)

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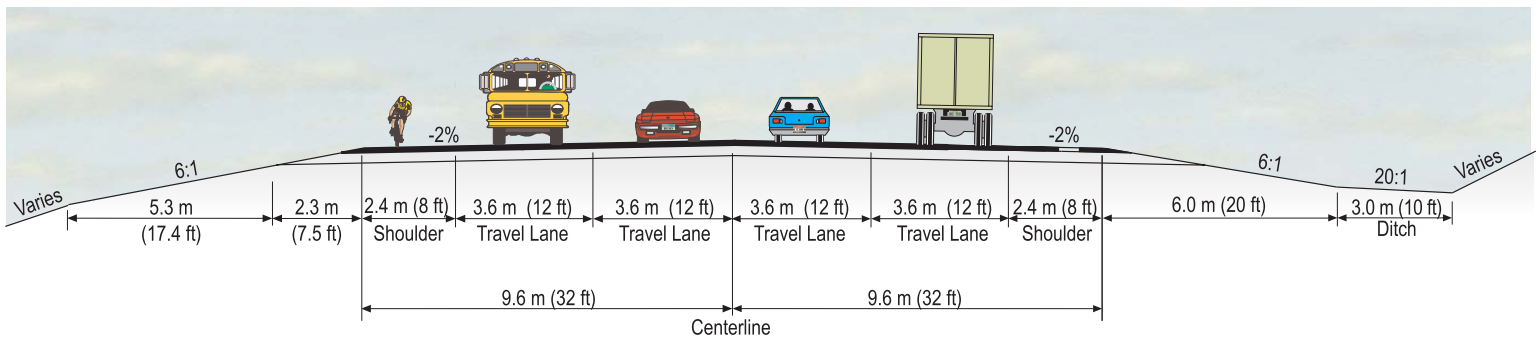
T102005002BOI fig2-8_typ sections_rev2.ai 6-13-2006



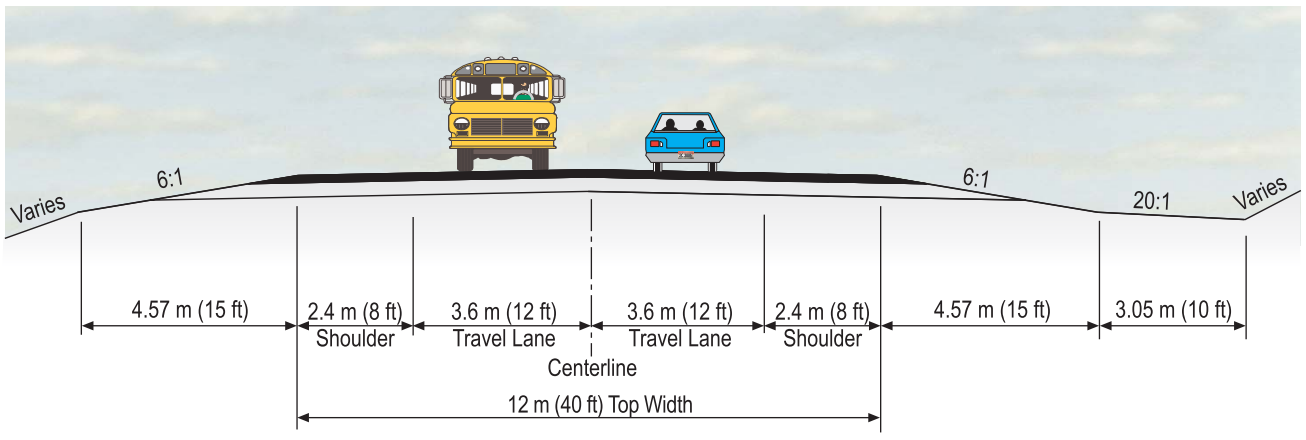
11-METER MEDIAN TYPICAL SECTION US 212



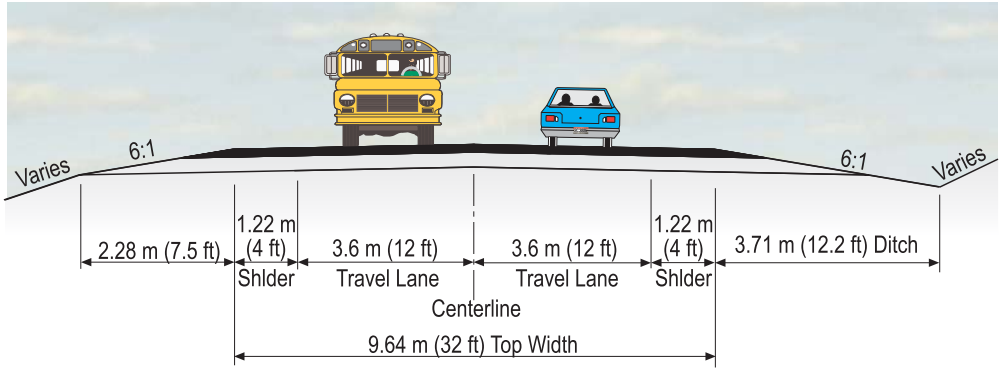
5-METER MEDIAN TYPICAL SECTION US 212



NO MEDIAN TYPICAL SECTION US 212



TYPICAL SECTION EXISTING US 310



TYPICAL SECTION EXISTING US 212

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 2-8
TYPICAL SECTIONS

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2.2.2.2 5-meter Median Typical Section

The 5-meter Median Typical Section for US 212 (Figure 2-8) was presented to the public as the "80-ft Section." The median would be paved flush or raised for turning-movement control, as needed. This section would characteristically be used at the proposed project's southerly beginning, northerly end, and areas of deep cut(s) or high fill(s), if necessary. The 5-meter Median Typical Section would also be modified to add turning lanes and curb and gutter sections, as needed. The 5-meter Median Typical Section was considered for use on the majority of the build alternatives and not carried forward because it did not meet the safety and capacity objectives described in *Section 2.2.2.1, 11-meter Median Typical Section*. NCHRP Report 375, *Median Intersection Design* (TRB, 1995) and TRB's *Access Management Manual* (2003) recommend a minimum median width of 8 m (26 ft) at rural unsignalized intersections to accommodate vehicle storage for left turns.

2.2.2.3 No Median Typical Section

The No Median Typical Section for US 212 (Figure 2-8) was presented to the public as the "64-ft Section." Because this typical section has no median or turn lane, vehicles that are stopped, waiting to turn left from US 212, present a hazard to other vehicles traveling at highway speeds. Therefore, with the No Median Typical Section, turning lanes would need to be developed for each intersection along US 212. As a result of these safety and turning-movement concerns, this typical section was not carried forward.

2.2.2.4 Typical Section for Existing US 310 Alignment

The Typical Section for Existing US 310 (Figure 2-8) was investigated. It is the same as the existing roadway. This section meets current design standards and would adequately support future traffic on US 310. Therefore, this typical section would be preferred for the relocation of US 310 and US 212 at Rockvale (for example, as part of Alternative 1).

2.2.2.5 Typical Section for Existing US 212 Alignment

The Typical Section for Existing US 212 (Figure 2-8) was investigated for the US 212 PTW within the proposed project area. With a new US 212 (one of the build alternatives), traffic volumes on the PTW would substantially decrease, and this typical section would adequately support future traffic. Therefore, this typical section would be preferred for extending the PTW at the new US 212 intersections for the build alternatives.

2.2.2.6 Accommodation of Bicycles

Throughout the public involvement process, the issue of providing facilities to accommodate bicycles was raised. Cyclists preferred a separate bicycle path through the proposed project area. However, concerns about a bicycle path included increased easement widths and the right-of-way required to accommodate a separate bicycle path. Both the public and the agencies requested that new right-of-way be kept to a minimum to avoid impacts to residences, farmlands, and natural habitats. The proposed shoulder width would yield 1.85 m (6 ft) of pathway outside the rumble strips that could be used by bicycles. Therefore, the

available width would meet the generally accepted width needed for bicycles on the proposed highway.

2.2.2.7 Safety Characteristics

Each of the typical sections would have different safety characteristics. Converting a two-lane facility to an undivided, four-lane facility (such as the 5-meter Median Typical Section or the No Median Typical Section) could yield various results, according to research performed by FHWA (1999). Depending on traffic volumes, conversion to a four-lane facility could range from reducing the accident rate by 20 percent to slightly increasing the accident rate. The same research also found that converting two-lane rural highways to median-divided, four-lane facilities reduced accident rates by 40 to 60 percent compared to the undivided two-lane highways. This would apply to the 11-meter Median Typical Section, which influenced the decision to select the 11-meter Median Typical Section as the design basis for the build alternatives, in addition to the safety discussions in *Section 2.2.2.1, 11-meter Median Typical Section,* and *Section 2.2.2.2, 5-meter Median Typical Section*.

The presence or absence of a median has a substantial impact on roadway operations, safety, and the provision of left-turn access to abutting properties. Medians can be grouped into the following types:

- **Continuous Two-Way Left-Turn Lane (TWLTL).** This is a continuous lane located between opposing traffic streams that provides a refuge area for vehicles to complete left turns from both directions. The average accident rate on roadways with a continuous TWLTL is less than that for undivided roadways. Continuous TWLTLs are effective on roadways in urban and suburban areas with a projected AADT of less than 24,000 vpd, or on collector streets in developed urban and suburban areas where accident patterns cannot be corrected by a raised median.
- **Traversable Medians.** This is a flush or paved area within an undivided highway that does not discourage or prevent vehicles from entering or crossing over it. Traversable medians allow uncontrolled refuge for left-turning vehicles entering or exiting the highway.
- **Non-Traversable Medians.** This is a physical barrier in the roadway that separates traffic in opposing directions. Examples of such medians are guard rails, concrete barriers, and landscaped islands with non-traversable curbs. It has been found that roadways with non-traversable medians have lower average accident rates than those with continuous TWLTLs. A non-traversable median is more desirable than a continuous TWLTL on rural multilane roadways or in high-accident-rate areas where left turns should be limited to improve safety.

In accordance with AASHTO's *Roadside Design Guide* (2002), the inclusion of a median barrier would be considered during the design phase of the project, because the proposed median width is less than 15.2 m (50 ft). The provision of non-traversable medians has been found to be the most effective treatment for reducing vehicle accidents. In addition, it provides pedestrian refuge and positive guidance to drivers. The application of specific median types within the build alternatives would depend on the locations and goals related to applying the access management techniques described in *Section 2.2.3, Access Management*.

2.2.2.8 Impact Area Used for Evaluating Environmental Consequences

To evaluate environmental consequences, an 80-m (260-ft)-wide impact area (referred to as a footprint) (Figure 2-7) was used for the build alternatives to capture the majority of the construction limits needed. The width is based on the 11-meter Median Typical Section (100-ft Section) described in *Section 2.2.2.1, 11-meter Median Typical Section*. A wider footprint was used to include areas of large cuts or fills and their increased impacts.

2.2.3 Access Management

Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It also involves roadway design features such as median treatments, auxiliary lanes, and the appropriate spacing of intersections. Access is managed to improve safety, preserve function and mobility, and handle existing and future access in a consistent manner. Access management balances the access needs of individuals with those of the transportation system. The goal is to provide efficient traffic operations while accommodating the access needs of the community.

2.2.3.1 State of Montana Policy

Statutory language in Montana Code Annotated (MCA) 60-5-101, "Policy," indicates that the state policy is to facilitate the flow of traffic and promote public safety by controlling access to "other federal-aid and state highways as shall be designated by the commission in accordance with the requirements set forth in this chapter." Language in MCA 60-5-103, "Designation as controlled-access highway," indicates that "No portion of any interstate highway, throughway or throughway intersection, or other federal-aid or state highway shall be designated as a controlled-access highway unless the commission shall adopt a resolution so designating it."

2.2.3.2 General Access Management

Access management would be an integral part of the design and operation of the proposed project. Reasonable access would be maintained to existing parcels adjacent to the highway. During the design phase of the proposed project, access management guidelines and an access management plan would be developed after consulting with property owners. At the end of the design phase, but before right-of-way acquisition, a resolution designating the highway as a controlled-access highway and facility would be submitted to the Montana Transportation Commission for approval. Accesses would then be managed in accordance with the Commission's access control resolution and the access management guidelines and plan developed during the design phase. New direct access might be denied based on criteria established in the guidelines.

The preferred 11-meter Median Typical Section, which is proposed for the majority of the project's length, would limit access possibilities. (An abundance of access point breaks in the median would compromise the safety that the median is intended to provide.) As a condition of permitting, requests for future access might require mitigation of impacts to the operation of the roadway.

Redevelopment of properties would be subject to the appropriate jurisdictional review in addition to conforming to the corridor's management plan. Such redevelopment might require consolidation of existing access points as part of the approval process.

Development patterns in the project area are established. Growth will continue with or without access management. However, the project could change where that growth would occur. Where appropriate, local growth policies would be integrated into the access management plan. Implementation of access management within the project corridor might result in relocating, combining, or eliminating some existing access points if alternate access points could be provided. However, access management would not be used to prohibit the development of private property.

2.3 Alternatives Considered

The No Build Alternative and the build alternatives considered to meet the project's Purpose and Need are described in this section. Each of the build alternatives includes reconstructing US 212 from Rockvale (RP 42.1) to just southerly of Laurel (RP 52.9) on a new route (Figure 2-1). The build alternatives have been developed to improve safety and efficiency of the highway while taking into consideration the constructed and natural environments. Specific conceptual elements for each alternative are identified in this section. Table 2-4 provides descriptive information summarizing each of the alternatives.

2.3.1 No Build Alternative

The No Build Alternative is the current alignment and two-lane configuration of the PTW. Figures 2-1 through 2-6 show this alternative ("Existing Roadway" or "US 212"). The No Build Alternative has been in effect since the nomination of the proposed project. Physical, operational, and safety improvements on the PTW would either not occur or be very limited. However, the PTW would still be maintained.

The PTW does not meet the current geometric standards of MDT for this type of highway (MDT, 2004). The projected growth in traffic volumes would result in increased levels of delay and driver frustration, with an unacceptable LOS E (because drivers would often be unable to pass or maintain safe and acceptable operating speeds).

The No Build Alternative continues to provide for essentially unlimited access. However, as traffic volumes increase, a driver's ability to turn left across opposing traffic into the numerous access points would become more difficult as well as less safe. With increased traffic volumes, the addition of access points, and a potential increase in BNSF Railway train frequencies, it is projected that the accident rates would also increase under this alternative. Therefore, the No Build Alternative does not meet the Purpose and Need of the proposed project.

The No Build Alternative was used as a basis for comparing impacts related to the build alternatives.

TABLE 2-4
Summary Information about Engineering and Other Aspects of the Alternatives Considered[a]

Comparison Area	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Length of Roadway	16.4 km (10.2 mi)	19.2 km (11.9 mi)	17.7 km (11.0 mi)	17.6 km (10.9 mi)	16.9 km (10.5 mi)	18.2 km (11.3 mi)	18.4 km (11.4 mi)
Relationship to the PTW							
Where it departs from the PTW	No change	RP 42.6	RP 44.5	RP 43.1	RP 44.4	RP 44.1	RP 43.7
Where it rejoins the PTW	No change	RP 52.7	RP 52.4	RP 52.7	RP 46.6	RP 52.7	RP 52.7
Traffic							
Level of Service (LOS)	E	A	A	A	A	A	A
Local traffic	No change	Would carry the least local traffic	Would have moderate local traffic interaction	Would carry the most local traffic	Would carry the most local traffic	Would have moderate local traffic interaction	Would have moderate local traffic interaction
Local Circulation and Access							
General	No change	<---------- No general advantage between build alternatives. ---------->					
Access requirements	No change	Generally, no new access to properties from the PTW required	Generally, no new access to properties from the PTW required	The PTW would become a frontage road providing access to properties	The PTW would become a frontage road providing access to properties	Generally, no new access to properties from the PTW required	Generally, no new access to properties from the PTW required
Access to Rockvale	No change	Poor	Good	Fair	Good	Good	Good
Access points (approximate)	103	25	34	38	39	36	35
Safety[b]							
Exposure to conflict points (% of existing)	No change	40%	53%	66%	65%	55%	53%
Exposure to existing US 212 conditions	No change	19%	14%	9%	8%	17%	18%
Railroad crossings[c]	No change	No Change	No Change	Decreased Safety	Decreased Safety	No Change	No Change
Typical Section	No change to existing roadway that is 19.2-m (64-ft) wide	For most of the highway corridor, the 11-meter Median Typical Section (100-ft Section) is recommended. In built-up areas such as Rockvale and Laurel, the 5-meter Median Typical Section (80-ft Section) is recommended.					
Geometry[d]							
Sharp curves (7-8% superelevation range)	2 curves	5 curves	4 curves	3 curves	1 curve	2 curves	2 curves
Vertical curves at 100 km/h (60 mph) design speed	0 curves	1 curve	1 curve	0 curves	0 curves	1 curve	1 curve
Grades over 3% (100 km/h [60 mph] design speed)	2 grades	8 grades	3 grades	0 grades	0 grades	6 grades	7 grades

TABLE 2-4
Summary Information about Engineering and Other Aspects of the Alternatives Considered[a]

Comparison Area	No Build Alternative	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
				Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Long steep grades (16 km/h [10 mph] speed reduction)	0 grades	3 grades	0 grades	0 grades	0 grades	1 grade	3 grades
Grade separations	No change	2	2	4	4	2	2
Geotechnical Considerations[e]							
Earthwork required	No change	1st (Most)	3rd (~84% of Alt. 1)	5th (45% of Alt. 1)	5th (45% of Alt. 1)	4th (~75% of Alt. 1)	2nd (~95% of Alt. 1)
Length of concerns	NA	33.2 km (20.6 mi)	11.6 km (7.2 mi)	7.5 km (4.7 mi)	7.5 km (4.7 mi)	18.1 km (11.2 mi)	18.1 km (11.2 mi)
Intersections							
With roads	No change	5	6	4	3	6	6
With railroad crossing	No change	0	0	4	4	0	0
Crossing Requirements							
Overpass over railroad tracks (bridge)	No change	2	2	2	2	2	2
Overpass over PTW (bridge)	No change	0	0	2	2	0	0
Bridge over water body	No change	1 (Rock Creek)	0	0	0	0	0
Culvert over water body	No change	4	7	7	4	6	6
Railroad and Utility Conflicts	None	1 railroad crossing	1 railroad crossing, gas line	1 railroad crossing, electrical substation displaced	1 railroad crossing, electrical substation displaced	1 railroad crossing, gas line	1 railroad crossing, gas line
Public Comment[f]							
Comments FOR / AGAINST(percentage)	Few comments	73% / 8%	28% / 58%	23% / 56%	23% / 56%	See Note f	
Construction Cost Estimate (in 2012 dollars)	0	$49.6 million	$45.6 million	$49.9 million (includes $1 million to relocate an electrical substation)	$46.0 million (includes $1 million to relocate an electrical substation)	$47.5 million	$49.6 million

[a]These values are based on preliminary (approximately 30%) design and may change as the design process continues.

[b]Less exposure to approaches (conflict points) and railroad crossings is considered more desirable, as more exposure indicates a higher potential for accidents.

[c]Pertains to both the existing US 212 and the alternative.

[d]Sharp horizontal curves, lower design speed vertical curves, steep grades, and long steep grades that reduce truck speed significantly are less desirable.

[e]Greater length equates to more geotechnical concerns on the specific alternative.

[f]Comments not gathered from general public. Affected landowners on the south end of the project area prefer Alternative 5B over Alternative 5A by a ratio of 5 to 1.

NA = not applicable

2.3.2 Build Alternatives

Improvements could be made to the PTW. However, the PTW is located between an existing railroad right-of-way on one side and residential and agricultural properties on the other. It physically cannot be expanded to a four-lane highway on its existing alignment without severe right-of-way and railroad impacts. Expansion to accommodate a four-lane highway toward the railroad would require the railroad to be relocated in order to maintain minimum right-of-way width for the railroad, and would be cost-prohibitive. Expansion in the opposite direction, toward the residential and agricultural properties, would require additional right-of-way that would affect 47 residential properties and 1 business property, including 14 residential relocations. To meet the stated access-management goals, a frontage road would have to be provided for properties with direct access to the PTW. The additional right-of-way needed for a frontage road would further impact the 47 residential properties and 1 business property previously mentioned. It would increase the residential relocations by 11, resulting in 25 total residential relocations. Therefore, the PTW cannot feasibly achieve the desired LOS B and safety considerations to accommodate local and regional traffic objectives.

The proposed build alternatives (Figures 2-3 through 2-6) would reconstruct US 212 from Rockvale (RP 42.1) to just southerly of Laurel (RP 52.9) on a new alignment, including substantial improvements to the existing junction of US 212 and US 310 at Rockvale. Each of the proposed build alternatives would deviate from the PTW's alignment for some length. In these locations, the existing roadway would remain in place, providing local access and functioning as a local collector road. MDT would continue maintaining the PTW.

Proposed typical sections are discussed within the individual alternative descriptions. To provide the highest degree of safety (*Section 2.2.2.7, Safety Characteristics*), acceptable LOS (*Section 2.2.2, Typical Sections*), and compatibility with access management principles (*Section 2.2.3, Access Management*), the preferred typical section for most of the proposed project would be a divided highway with a depressed median and four lanes, each 3.6-m (12-ft)-wide (11-meter Median). There would also be a preference for 2.4-m (8-ft)-wide outside shoulders, and an 11-m (36-ft)-wide median (Figure 2-8). The typical right-of-way would be 80-m (260-ft)-wide. The discussion of build alternatives in this Final EIS is based on the preferred typical section (11-meter Median).

Each build alternative, developed as a four-lane divided highway, would operate at LOS A in the design year 2025. In fact, the service life of the project is anticipated to exceed the 25-year design life based on the traffic projections.

The build alternatives would facilitate access to intersecting existing public and essential farmland access roads. As part of access management, private farmland access might be provided via frontage roads, which would then be controlled as access to the relocated US 212.

Figures 2-1, 2-3, 2-4, 2-5, and 2-6 show the alignments for the six build alternatives analyzed in this Final EIS. The alternatives are:

- Alternative 1—Far West Bench
- Alternative 2—Near West Bench

- Alternative 3–Near Existing Alignment (two variations)
  - Alternative 3A—Deviates north at RP 43.1 then parallels PTW
  - Alternative 3B—Deviates north at RP 44.4 then parallels PTW (closest to existing alignment)
- Alternative 5—Combined West Bench (two variations)
  - Alternative 5A—Departs US 212 at RP 44.1
  - Alternative 5B (Preferred) —Departs US 212 at RP 43.7

Alternative 4—East Bench (Figure 2-2) was dropped from detailed analysis (see *Section 2.5.2, Alternative 4—East Bench*).

In the sections that follow, the route of each alternative is described along with information about:

- Geotechnical Considerations
- Potential Structure Requirements
- Access
- Intersections

2.3.2.1 Alternative 1—Far West Bench

The Alternative 1 alignment would:

- Depart the PTW nearly 1.2 km (0.75 mi) west-southwesterly from Rockvale.
- Curve onto a northerly bearing and pass through irrigated cropland westerly of Rockvale, ascending the hills northerly from there.
- Continue northerly over rolling rangelands.
- Intersect the Farewell Road westerly of Silesia.
- Cross Farewell Creek upstream from a small reservoir.
- Proceed northerly through rangelands and wheat fields to the bluffs along the Yellowstone Valley's southerly side.
- Turn northeasterly to follow those bluffs through more wheat fields and irrigated croplands onto the White Horse Bench.
- Intersect White Horse Bench Road north of the old White Horse School.
- Continue northeasterly through irrigated croplands on the Yellowstone Valley's southerly bluffs to within approximately 0.5 km (0.3 mi) northerly of the Krug (Gravel) Pit.
- Turn easterly, crossing both the PTW near RP 52.4 and the railroad tracks.
- Turn northerly through more croplands, joining the PTW at approximately RP 52.7.

Geotechnical Considerations. The proposed route of Alternative 1 would require the most earthwork of the build alternatives. There would be cut depths down to 13 m (43 ft) and

fill heights up to 18 m (59 ft). Soil conditions and appropriate measures to address erosion, water seeps, and foundation issues will be determined during final design.

Several gullies have eroded into the edge of the terrace along the Yellowstone River near the proposed alignment of Alternative 1. Some of these gullies appear to contain springs and saturated soils. It has been hypothesized that these springs feed wetlands below the bluff in the Yellowstone River floodplain. Embankment fills would be required where the alignment crosses these gullies. The design and construction of adequate embankments in these steep gullies would be a challenge and would require care not to upset the hydrologic regime or impede spring flow.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests three bridges and four large culverts would be required for Alternative 1. The Rock Creek Bridge would be designed according to MDT design standards (MDT, 2004) to allow for fish passage and to keep the floodplain water level from rising greater than 0.15 m (0.5 ft). Constructing Alternative 1 would involve a permanent closure of the existing railroad underpass, which would be replaced by a railroad overpass. Table 2-5 presents a breakdown of the potential structure requirements.

TABLE 2-5
Potential Structure Requirements for Alternative 1—Far West Bench*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
42.5 (US 310)	Rock Creek	Natural drainage	43-m (140-ft) bridge
42.4	Free Silver Ditch	Irrigation crossing	Large culvert
45.7	Farewell Creek	Natural drainage	Large culvert
50.2	White Horse Canal	Irrigation crossing	Large culvert
52.3	Mason Canal	Irrigation crossing	Large culvert
52.5	Railroad Tracks	Overpass	Two 112-m (367-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Access. Drivers currently access the properties affected by Alternatives 1, 2, 5A, and 5B (preferred) from public roads. Those public roads would have new intersection crossings with the proposed alignments of US 212, and new access to individual properties from US 212 would generally not be required. Access to most local properties could be made from the PTW, which would remain in place. Each build alternative would require approximately five field access points. These new access points would be in addition to crossing intersections at existing public roads. Many of the necessary access points would allow a landowner to get to a part of a severed agricultural field. Good access management concepts dictate some access points from opposing directions could be right-turn-only access reached through U-turn maneuvers at designated median openings/intersections.

Intersections. The five proposed intersections on Alternative 1 would be stop-sign controlled.

- **US 212/310 Junction.** The existing junction of US 212 and US 310 at Rockvale would be moved westerly (*Appendix A*, Figure A-1), requiring the realignment of both routes. Free-right turns, deceleration lanes, and left-turn lanes are proposed. An 11-m (36-ft)-wide median at the intersection location is proposed.
- **US 212/Farewell Road Intersection.** An intersection would be required where Alternative 1 intersects Farewell Road (see *Appendix A*, Figure A-2). A median width of 11 m (36 ft) and left-turn lanes for both directions are proposed. Farewell Road would be moved at this location to obtain a perpendicular and through intersection with adequate vehicle storage.
- **US 212/White Horse Bench Road Intersection.** An intersection would be required where Alternative 1 intersects the north-south portion of White Horse Bench Road (see *Appendix A*, Figure A-3). A median width of 11 m (36 ft) and a left-turn lane for the south direction only is proposed. This would be a through intersection. However, the west intersection leg would be private access. White Horse Bench Road would be moved at this location to provide a perpendicular intersection with adequate vehicle storage space.
- **US 212/North White Horse Bench Road Intersection.** An intersection would be required where Alternatives 1, 5A, and 5B (preferred) intersect the North White Horse Bench Road (see *Appendix A*, Figure A-4). This would be a tee intersection. North White Horse Bench Road would be moved at this location to provide a perpendicular intersection with adequate storage.
- **US 212/PTW Intersection.** An intersection would be required south of the existing railroad underpass near RP 52.0 on the PTW. This intersection would connect the PTW with the new Alternative 1. Several options were considered for this intersection, including:
  - **Option 1 (Preferred).** An at-grade intersection on the south side of Alternatives 1 and 5 (see *Appendix A*, Figure A-5a).
  - **Options 2 and 4.** Two grade-separated, diamond-type interchanges (see *Appendix A*, Figures A-5b and A5-d).
  - **Option 3.** A grade-separated, trumpet-type interchange (see *Appendix A*, Figure A-5c). Grade-separated interchanges were considered because of the high fills proposed for US 212 at this location as well as the existing and estimated future traffic volumes.

Option 1 had significantly less impact to farmland than Options 2 through 4 and was identified as the preferred intersection/interchange alternative. Options 2 through 4 were less desirable because of the additional impacts and because of a low cost-to-benefit ratio.

2.3.2.2 Alternative 2—Near West Bench

The Alternative 2 alignment would:

- Follow the PTW from Rockvale northerly to approximately RP 44.5.
- Leave the PTW, turning northwesterly through pastureland.

- Intersect Farewell Road approximately 1.1 km (0.7 mi) westerly of Silesia.
- Cross Farewell Creek upstream from a small reservoir.
- Proceed northeasterly through rangelands and wheat fields.
- Intersect the South White Horse Bench Road westerly of the PTW.
- Continue northeasterly through irrigated croplands.
- Intersect the North White Horse Bench Road westerly of the PTW.
- Remain heading northeasterly into Yellowstone County
- Cross the Mason Canal southerly of the Krug (Gravel) Pit.
- Turn northerly to generally parallel the Mason Canal's southeasterly (right) bank through irrigated croplands.
- Turn east-northeasterly onto the Alternative 1 alignment, crossing the PTW near RP 52.4.
- Remain on the same proposed alignment as Alternative 1.

Geotechnical Considerations. Alternative 2 ranks third of the build alternatives in the amount of earthwork that would be required (approximately 84 percent of the amount required for Alternative 1). There would be cut depths down to 9 m (30 ft) and fill heights up to 21 m (69 ft). Soil conditions and appropriate measures to address erosion, water seeps, and foundation issues will be determined during final design.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests two bridges and seven large culverts would be required for Alternative 2. Constructing this alternative would involve a permanent closure of the existing railroad underpass, which would be replaced by a railroad overpass. Table 2-6 presents a breakdown of the potential structure requirements.

TABLE 2-6
Potential Structure Requirements for Alternative 2—Near West Bench*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
44.8	Smith Ditch	Irrigation crossing	Large culvert
45.0	Free Silver Ditch	Irrigation crossing	Large culvert
45.1	Free Silver Ditch	Irrigation crossing	Large culvert
45.1	Free Silver Ditch	Irrigation crossing	Large culvert
45.7	Farewell Creek	Natural drainage	Large culvert
49.2	White Horse Canal	Irrigation crossing	Large culvert
51.5	Mason Canal	Irrigation crossing	Large culvert
52.5	Railroad Tracks	Overpass	Two 112-m (367-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Access. Access issues would be the same as those discussed for Alternative 1.

Intersections. The six proposed intersections on Alternative 2 would be stop-sign controlled.

- **US 212/310 Junction.** The existing junction of US 212 and US 310 at Rockvale would be reconstructed to better accommodate the existing and expected traffic, as well as turning trucks (see *Appendix A*, Figure A-6). The addition of raised medians would provide safety within Rockvale. A 5-m (16-ft)-wide median would provide room for offset turning lanes within the median. Figure A-6 demonstrates one possible alternative for this junction; however, specific access to existing businesses would be determined as a part of the design phase of the project.
- **US 212/PTW Intersection.** An intersection with the PTW would be required south of Silesia close to the point at which Alternative 2 leaves the PTW (see *Appendix A*, Figure A-7). The PTW would be moved at this location to obtain a perpendicular intersection in a straight section of the new US 212. A free-right-turn lane from the new US 212 to the PTW is proposed. A 30-m (100-ft)-wide median through the intersection area would provide for safe truck storage within the median and for U-turn movements.
- **US 212/Farewell Road Intersection.** An intersection would be required where Alternative 2 intersects Farewell Road (see *Appendix A*, Figure A-8). A median width of 11 m (36 ft) and left-turn lanes for both directions are proposed. Farewell Road would be moved at this location to obtain a perpendicular and through intersection with adequate vehicle storage.
- **US 212/South White Horse Bench Road Intersection.** An intersection would be required where Alternative 2 intersects South White Horse Bench Road (see *Appendix A*, Figure A-9). A median width of 11 m (36 ft) and left-turn lanes for both directions is proposed. South White Horse Bench Road would be moved at this location to obtain a perpendicular and through intersection with adequate vehicle storage.
- **US 212/North White Horse Bench Road Intersection.** An intersection would be required where Alternative 2 intersects North White Horse Bench Road (see *Appendix A*, Figure A-10). A median width of 11 m (36 ft) and left-turn lanes for both directions are proposed. North White Horse Bench Road would be moved at this location to obtain a perpendicular and through intersection with adequate vehicle storage while avoiding taking homes.
- **US 212/PTW Intersection.** An intersection with the PTW would be required south of the proposed railroad overpass at approximately RP 52.0 on the PTW (see *Appendix A*, Figure A-11). It is likely that this intersection would be used by traffic accessing the PTW, which would remain in place. Some reconstruction of the PTW would be required, and the connection would use part of an existing private access road that is currently a haul road to the Krug (Gravel) Pit. Left-turn lanes would be provided for both directions.

An interchange is not proposed for Alternative 2.

2.3.2.3 Alternative 3—Near Existing Alignment

Alternative 3 has two potential alignments, Alternatives 3A and 3B, that are discussed in the following sections.

Alternative 3A—Near Existing Alignment. The Alternative 3A alignment would:

- Leave the PTW approximately 0.4 km (0.25 mi) southwesterly from its present junction with US 310.
- Proceed east-northeasterly through irrigated croplands, intersecting US 310 southerly of Rockvale near RP 42.7.
- Turn northerly to cross the PTW close to RP 43.1.
- Cross the Smith Ditch.
- Continue northerly through irrigated croplands and pasturelands between the Smith Ditch and the Free Silver Ditch.
- Bend slightly easterly and intersect Farewell Road west of Silesia.
- Return to a more northerly bearing, roughly paralleling the PTW just over 0.5 km (0.3 mi) easterly.
- Bend northeasterly to cross the White Horse Canal.
- Traverse the PTW (near RP 46.6), the railroad tracks, and the Mason Canal.
- Turn northerly, paralleling the southeasterly right-of-way of the railroad.
- Match the proposed alignments of both Alternatives 1 and 2 soon after crossing the railroad tracks.
- Join the PTW at approximately RP 52.7.

Geotechnical Considerations. Alternative 3A (and Alternative 3B) would require the least amount of earthwork (approximately 45 percent of the amount required for Alternative 1). The part of Alternative 3A that would be parallel with and between the Free Silver and Smith ditches would be subject to seepages from those irrigation systems. Soil conditions and appropriate measures to address erosion, water seeps, and foundation issues will be determined during final design. Where the proposed alignment would adjoin the southeasterly right-of-way of the railroad tracks, it is likely that culverts would be necessary to maintain the southeasterly flow of irrigation wastewater across low-lying areas and to avoid saturating the embankment. The existing railroad underpass might require improvement to safely tie in local traffic to Alternative 3A without an at-grade railroad crossing. Additional impacts from controlling groundwater for such proposed improvements would also be introduced.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests four bridges and seven large culverts would be required for Alternative 3A. Table 2-7 presents a breakdown of the potential structure requirements.

TABLE 2-7
Potential Structure Requirements for Alternative 3A—Near Existing Alignment*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
42.5	Smith Ditch	Irrigation crossing	Large culvert
43.2	Smith Ditch	Irrigation crossing	Large culvert
43.2	Free Silver Ditch	Irrigation encroachment	Large culvert
44.7	Free Silver Ditch	Irrigation encroachment	Large culvert
45.0	Free Silver Ditch	Irrigation encroachment	Large culvert
45.7	Farewell Creek	Natural drainage	Large culvert
46.3	White Horse Canal	Irrigation crossing	Large culvert
46.6	US 212 / Railroad Tracks	Overpass	Two 180-m (590-ft) bridges
52.7	US 212	Overpass	Two 87-m (286-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Access. The north 9.5 km (5.9 mi) of Alternatives 3A and 3B would be located northeasterly and southeasterly of, and parallel to, the railroad tracks. This would effectively limit access from the west to public roads that would continue to cross the railroad tracks. The PTW would become a frontage road serving other access points from the west.

An examination of the number and location of existing access points east of the railroad tracks suggests that it would be reasonable to provide access to the new US 212 alignment at most existing access locations. Only two existing locations have spacing of less than 0.4 km (0.25 mi), and these could be eliminated in final planning. The number of access points from the east would be approximately four per mile. This would be acceptable given that the access points generally serve single homesteads. It would be expected, however, that future development of increased numbers of homes and businesses would prompt the development of local roadways that would ultimately reduce the number of access points.

Both Alternatives 3A and 3B would need existing access consolidated from the beginning of their alignment to southwesterly of RP 46.5 on the PTW. Approximately eight access locations are present on each side of the PTW in the southwesterly 3.2 km (2.0 mi) on the proposed project's portion of US 212. Therefore, it would be necessary to realign and/or eliminate several access connections and to determine if a frontage road would be desirable.

Intersections. The four proposed intersections with roads and the four proposed intersections with railroad crossings on Alternative 3A would be stop-sign controlled.

- **US 212/310 Junction.** A junction of US 212 and US 310 at Rockvale would be constructed south of the existing intersection (see *Appendix A*, Figure A-12). This intersection would have free-right-turn ramps and left-turn lanes. A median width of 5 m (16 ft) is proposed. The PTW would act as a frontage road in Rockvale, with connections to the new US 212 at both ends.

- **US 212/PTW South Intersection.** An intersection with the PTW would be required immediately south and east of Rockvale (see *Appendix A*, Figure A-13). A median width of 5 m (16 ft) is proposed at the intersection location. This intersection would involve moving the PTW to the east to provide a perpendicular intersection with adequate vehicle storage. This intersection would also act as an east Rockvale connection.
- **US 212/Farewell Road Intersection.** An intersection would be required where Alternative 3A intersects Farewell Road (see *Appendix A*, Figure A-14). A median width of 11 m (36 ft) and left-turn lanes for both directions are proposed. Farewell Road would be moved at this location to obtain a perpendicular and through intersection with adequate vehicle storage.
- **Railroad Crossings.** Four railroad crossings would connect the new US 212 with the PTW between Silesia and Laurel (see *Appendix A*, Figures A-19 through A-22). These crossings would be spaced approximately 1.6 km (1 mi) apart. They would be located at RP 47.9, RP 48.9, RP 50.2 (across from Henry's Road), and RP 51.2 (at the North White Horse Bench Road/Byam Road crossing). These crossings would replace the existing railroad crossings. A median width of 11 m (36 ft) for intersections is proposed. Left-turn lanes would be provided for northbound traffic at all four crossings and for southbound traffic at the RP 48.9 crossing and the Byam Road crossing. Byam Road would be realigned at this crossing to obtain a perpendicular intersection with adequate vehicle storage and to avoid taking homes.
- **US 212/PTW North Intersection.** An intersection with the PTW would be required north of the existing railroad underpass at Wilkins Road (see *Appendix A*, Figure A-15). It is likely that this intersection would be used by traffic accessing the PTW, which would remain in place. The intersection would involve moving the PTW and constructing an overpass on Alternative 3 (either 3A or 3B) to obtain a perpendicular intersection with adequate vehicle storage. A median width of 5 m (16 ft), left-turn lanes for both directions, and a right-turn deceleration lane for southbound traffic at the Wilkins Road turnoff are proposed. A right-turn ramp and left-turn lanes would provide entrance and exit onto the new US 212 for local traffic.

An interchange is not proposed for this alternative.

Alternative 3B—Near Existing Alignment. The Alternative 3B alignment would:

- Remain on the PTW to approximately RP 44.4.
- Diverge from the PTW and run northerly through pasturelands.
- Cross the Farewell Road immediately west of Silesia.
- Continue through pasturelands and irrigated croplands until it joins Alternative 3A, which would occur southwesterly of where Alternative 3A crosses the PTW at approximately RP 46.6.
- Use Alternative 3A's alignment for the remainder of Alternative 3B's route.

Geotechnical Considerations. Geotechnical considerations would be the same as those described for Alternative 3A, except that Alternative 3B would parallel the White Horse Canal, not the Free Silver and Smith ditches.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests four bridges and four large culverts would be required for Alternative 3B. Table 2-8 presents a breakdown of the potential structure requirements.

TABLE 2-8
Potential Structure Requirements for Alternative 3B—Near Existing Alignment*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
44.8	Smith Ditch	Irrigation crossing	Large culvert
44.9	Smith Ditch	Irrigation crossing	Large culvert
45.0	White Horse Canal	Irrigation crossing	Large culvert
45.8	Farewell Creek	Natural drainage	Large culvert
46.6	US 212 / Railroad Tracks	Overpass	Two 180-m (590-ft) bridges
52.7	US 212	Overpass	Two 87-m (286-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Access. Access issues would be the same as those discussed for Alternative 3A.

Intersections. The three proposed intersections with roads and the four proposed intersections with railroad crossings on Alternative 3B would be stop-sign controlled.

- **US 212/310 Junction.** The existing junction of US 212 and US 310 at Rockvale would be reconstructed to better accommodate the existing and expected traffic, as well as turning trucks (see *Appendix A*, Figure A-6, and the "US 212/310 Junction" discussion in *Section 2.3.2.2, Alternative 2—Near West Bench*).
- **US 212/Farewell Road Intersection.** An intersection with the PTW would be required at Silesia (see *Appendix A*, Figure A-16). The PTW would connect with Alternative 3B via Farewell Road. A median width of 11 m (36 ft) and left-turn lanes for both directions are proposed.
- **Railroad Crossings.** Four railroad crossings would connect the new US 212 with the PTW between Silesia and Laurel (see *Appendix A*, Figures A-19 through A-22, and the Alternative 3A "Railroad Crossings" discussion in *Section 2.3.2.3, Alternative 3—Near Existing Alignment*).
- **US 212/PTW North Intersection.** An intersection with the PTW would be required north of the existing railroad underpass at Wilkins Road (see *Appendix A*, Figure A-15, and the Alternative 3A "US 212/PTW North Intersection" discussion in *Section 2.3.2.3, Alternative 3—Near Existing Alignment*).

2.3.2.4 Alternative 5—Combined West Bench

Alternative 5 has two potential alignments, Alternatives 5A and 5B (preferred), that are discussed in the following sections.

Alternative 5A—Combined West Bench. The Alternative 5A alignment would:

- Use the same alignment as Alternative 3B on the PTW to approximately RP 44.1.
- Turn northwesterly, crossing irrigated croplands and pasturelands.
- Join Alternative 1 southerly of where Alternative 1 intersects Farewell Road.
- Continue north-northeasterly on Alternative 2's proposed route.
- Turn northerly in the S.E. 1/4 of Section 1 in Township 3 South, Range 23 East.
- Rejoin Alternative 1 in the S.W. 1/4 of Section 31 in Township 2 South, Range 24 East, Montana Principal Meridian, which would be approximately 0.45 km (0.28 mi) northwesterly from the old White Horse School site
- Continue on Alternative 1's alignment to the proposed project's northeasterly end near RP 52.7 on the PTW.

Geotechnical Considerations. Alternative 5A ranks fourth of the build alternatives in the amount of earthwork that would be required (approximately 75 percent of the amount required for Alternative 1). There would be cut depths down to 11 m (36 ft) and fill heights up to 22 m (72 ft). Soil conditions and appropriate measures to address erosion, water seeps, and foundation issues will be determined during final design.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests two bridges and six large culverts would be required for Alternative 5A. Constructing this alternative would involve a permanent closure of the existing railroad underpass, which would be replaced by a railroad overpass. Table 2-9 presents a breakdown of the potential structure requirements.

TABLE 2-9
Potential Structure Requirements for Alternative 5A—Combined West Bench*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
44.6	Smith Ditch	Irrigation	Large culvert
44.7	Free Silver Ditch	Irrigation	Large culvert
45.7	Farewell Creek	Natural drainage	Large culvert
48.8	White Horse Canal	Irrigation	Large culvert
50.2	White Horse Canal	Irrigation	Large culvert
52.3	Mason Canal	Irrigation	Large culvert
52.5	Railroad Tracks	Overpass	Two 112-m (367-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Access. Access issues would be the same as those discussed for Alternative 1.

Intersections. The six proposed intersections on Alternative 5A would be stop-sign controlled.

- **US 212/310 Junction.** The existing junction of US 212 and US 310 at Rockvale would be reconstructed to better accommodate the existing and expected traffic, as well as turning trucks (see *Appendix A*, Figure A-6, and the "US 212/310 Junction" discussion in *Section 2.3.2.2, Alternative 2—Near West Bench*).
- **US 212/PTW South Intersection.** An intersection with the PTW would be required south of Silesia, close to where Alternative 5A leaves the PTW (see *Appendix A*, Figure A-17). The PTW would be reconstructed to obtain a perpendicular intersection on a straight section of the new US 212. A free-right turn from the new US 212 to the PTW connection is proposed. A 30-m (98-ft) median through the intersection area would provide for safe truck storage within the median as well as for U-turn movements.
- **US 212/Farewell Road Intersection.** An intersection would be required where Alternative 5A intersects Farewell Road (see *Appendix A*, Figure A-2, and the "US 212/ Farewell Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).
- **US 212/White Horse Bench Road Intersection.** An intersection would be required where Alternative 5A intersects the north-south portion of White Horse Bench Road (see *Appendix A*, Figure A-3, and the "US 212/White Horse Bench Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).
- **US 212/North White Horse Bench Road Intersection.** An intersection would be required where Alternative 5A intersects the North White Horse Bench Road (see *Appendix A*, Figure A-4, and the "US 212/North White Horse Bench Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).
- **US 212/PTW Intersection.** A new intersection would be required south of the existing railroad underpass, near RP 52.0 on the PTW. This intersection would connect the PTW with the new Alternative 5A (see the "US 212/PTW Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).

Alternative 5B—Combined West Bench (Preferred). The Alternative 5B (preferred) alignment would:

- Use the same alignment as Alternative 3B on the PTW to approximately RP 43.7.
- Leave the PTW and turn northwesterly through irrigated farmland.
- Turn northeasterly and briefly join Alternative 1 before it intersects Farewell Road west of Silesia.
- From its intersection with Farewell Road, follow Alternative 5A.

Geotechnical Considerations. Alternative 5B (preferred) ranks second of the build alternatives in the amount of earthwork that would be required (approximately 95 percent of the amount required for Alternative 1). There would be cut depths down to 11 m (36 ft) and fill heights

up to 22 m (72 ft). Soil conditions and appropriate measures to address erosion, water seeps, and foundation issues will be determined during final design.

Potential Structure Requirements. Within the corridor, conceptual design completed to facilitate impact assessment suggests two bridges and six large culverts would be required for Alternative 5B (preferred). Constructing this alternative would involve a permanent closure of the existing railroad underpass, which would be replaced by a railroad overpass. Table 2-10 presents a breakdown of the potential structure requirements.

Access. Access issues would be the same as those discussed for Alternative 5A.

TABLE 2-10
Potential Structure Requirements for Alternative 5B—Combined West Bench (Preferred)*

Location (RP on PTW)	Location (Description)	Crossing Type	Approximate Structure Length Required
44.2	Smith Ditch	Irrigation	Large culvert
44.3	Free Silver Ditch	Irrigation	Large culvert
45.7	Farewell Creek	Natural drainage	Large culvert
48.8	White Horse Canal	Irrigation	Large culvert
50.2	White Horse Canal	Irrigation	Large culvert
52.3	Mason Canal	Irrigation	Large culvert
52.5	Railroad Tracks	Overpass	Two 112-m (367-ft) bridges

*Information based on conceptual design and modifications may be necessary as the design process continues.

Intersections. The six proposed intersections on Alternative 5B (preferred) would be stop-sign controlled.

- **US 212/310 Junction.** The existing junction of US 212 and US 310 at Rockvale would be reconstructed to better accommodate the existing and expected traffic, as well as turning trucks (see *Appendix A*, Figure A-6, and the "US 212/310 Junction" discussion in *Section 2.3.2.2, Alternative 2—Near West Bench*).
- **US 212/PTW South Intersection.** An intersection with the PTW would be required south of Silesia, close to where Alternative 5B (preferred) leaves the PTW (see *Appendix A*, Figure A-18). The PTW would be reconstructed to obtain a perpendicular intersection on a straight section of the new US 212. A free-right turn from the new US 212 to the PTW connection is proposed. A 30-m (98-ft) median through the intersection area would provide for safe truck storage within the median as well as for U-turn movements.
- **US 212/Farewell Road Intersection.** An intersection would be required where Alternative 5B (preferred) intersects Farewell Road (see *Appendix A*, Figure A-2, and the "US 212/ Farewell Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).
- **US 212/White Horse Bench Road Intersection.** An intersection would be required where Alternative 5B (preferred) intersects the north-south portion of White Horse Bench

Road (see *Appendix A*, Figure A-3, and the "US 212/White Horse Bench Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).

- **US 212/North White Horse Bench Road Intersection.** An intersection would be required where Alternative 5B (preferred) intersects the North White Horse Bench Road (see *Appendix A*, Figure A-4, and the "US 212/North White Horse Bench Road Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).
- **US 212/PTW Intersection.** A new intersection would be required south of the existing railroad underpass, near RP 52.0 on the PTW. This intersection would connect the PTW with the new Alternative 5B (preferred) (see the "US 212/PTW Intersection" discussion in *Section 2.3.2.1, Alternative 1—Far West Bench*).

2.4 Comparison of Build Alternatives

The environmental impacts of the No Build Alternative and each build alternative were reviewed in selecting a Preferred Alternative. Each potentially impacted resource category was examined to determine if the category would form a basis to select one alternative over another or whether there were clear differences among alternatives. It should be noted that potential impacts were estimated based on the conceptual (approximately 30 percent) design that is available at this early stage of the design process. As the design process continues and as additional avoidance, minimization, and mitigation strategies are evaluated, potential impacts may change slightly.

2.4.1 Selection of a Preferred Alternative

The determination of a Preferred Alternative was based on:

- Regulatory guidance to minimize impacts to a particular resource category (for example, jurisdictional wetlands)
- The actual impact of the alternative

Evaluation of the effects of the build alternatives on various resource areas indicates that Alternatives 1, 5A, and 5B (preferred) would have the least overall impact on the environment as compared with the remaining alternatives. Although a quantitative analysis of Alternatives 1, 5A, and 5B (preferred) indicated relative advantages and disadvantages in the various resource categories, a qualitative analysis indicated that none of the three alternatives had a clear environmental impact advantage over the others. Affected landowners on the south end of the project area prefer Alternative 5B over Alternative 5A by a ratio of 5 to 1.

In the consideration of build alternatives, differences such as the amount of earthwork and number of structures required to construct the alternative were discussed. Larger amounts of earthwork and greater numbers of structures do not necessarily mean increased impact to the environment. This is evidenced, for example, by the fact that Alternatives 5A and 5B (preferred) would have lower wetlands impacts than Alternatives 3A and 3B, which would require less earthwork and structures to build. Table 2-11 summarizes the evaluation of resource areas used to select the Preferred Alternative.

TABLE 2-11

Comparison of the Build Alternatives for Selection of the Preferred Alternative[a]

Comparison Area	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
			Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
1. LAND USE	The following land use information was analyzed and found to be equal across alternatives and not significant.					
Consistency with Local Plans						
Carbon County	Partial	No	Yes	Yes	Partial	Yes
Yellowstone County	Yes	No	Yes	Yes	Yes	Yes
City of Laurel	Yes	Yes	Yes	Yes	Yes	Yes
2. FARMLANDS—Conversion from NRCS-classified suitable farmland to non-agricultural uses	87.60 ha (216.47 ac)	108.17 ha (267.28 ac)	75.80 ha (187.30 ac)	92.43 ha (228.40 ac)	103.67 ha (256.18 ac)	100.05 ha (247.23 ac)
3. SOCIAL CONDITIONS	Impacts to the various categories of social conditions would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
4. TRANSPORTATION RIGHT-OF-WAY AND RELOCATIONS						
Relocations (General)	Relocations would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Polices Act of 1970 (Public Law 91-646 as amended, 42 U.S. Code [USC] 4601, et seq.), and the Uniform Relocations Act Amendments of 1987 (Public Law 100-17).					
Number of Houses Impacted	2	11	12	11	2	5[b]
Number of Farmsteads Impacted	1	1	2	3	1	1
Number of Businesses Impacted	0	0	2	1	0	0
5. ECONOMIC CONDITIONS	Impacts to the various categories of economic conditions would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
Number of local businesses with a potential decline in patronage	4	1	4	1	1	1
Temporary Construction Effects	All build alternatives would have a temporary construction benefit.					
6. ENVIRONMENTAL JUSTICE	None of the build alternatives would have environmental justice issues or effects.					

TABLE 2-11

Comparison of the Build Alternatives for Selection of the Preferred Alternative[a]

Comparison Area	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
			Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
7. PEDESTRIAN AND BICYCLE FACILITIES CONSIDERATIONS	Impacts related to pedestrian and bicycle facilities would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
8. AIR QUALITY	Impacts related to air quality would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
9. NOISE—Impacts as of 2030	5 noise-sensitive receptors (5 residences)	20 noise-sensitive receptors (34 residences)	9 noise-sensitive receptors (12 residences)	6 noise-sensitive receptors (7 residences)	7 noise-sensitive receptors (9 residences)	5 noise-sensitive receptors (9 residences)
10. Water Flow and Quality	Public water supplies would not be displaced under any of the build alternatives.					
11. WETLANDS						
Impacted Area (Total)	0.5 ha (1.5 ac)	0.9 ha (2.0 ac)	1.1 ha (2.5 ac)	0.9 ha (2.0 ac)	0.6 ha (1.5 ac)	0.6 ha (1.5 ac)
Impacted Area (Jurisdictional)	0.5 ha (1.5 ac)	0.8 ha (2.0 ac)	1.0 ha (2.5 ac)	0.8 ha (2.0 ac)	0.6 ha (1.5 ac)	0.6 ha (1.5 ac)
12. WATER BODIES AND AQUATIC RESOURCES	Stream and irrigation system crossings would not impact flows and did not affect selection of the Preferred Alternative.					
13. VEGETATION	Direct habitat loss noted for wetlands and for altered remnant native uplands	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1
14. WILDLIFE RESOURCES	Impacts to the various categories of wildlife would be basically the same across the build alternatives, and the impacts would not be severe enough to affect selection of the Preferred Alternative.					
15. THREATENED AND ENDANGERED SPECIES AND STATE SPECIES OF CONCERN	There is no difference in impacts to threatened and endangered species or state species of concern among alternatives that could be used to select the Preferred Alternative.					
16. FLOODPLAINS	3.5 ha (8.6 ac)	1.3 ha (3.2 ac)	12.4 ha (30.6 ac)	4.3 ha (10.6 ac)	1.3 ha (3.2 ac)	1.3 ha (3.2 ac)
17. CULTURAL RESOURCES						
Historic Railroad	No effect	No effect	No effect	No effect	No effect	No effect
Historic Free Silver Ditch	No effect	No effect	No effect	No effect	No effect	No effect

TABLE 2-11

Comparison of the Build Alternatives for Selection of the Preferred Alternative[a]

Comparison Area	Alternative 1—Far West Bench	Alternative 2—Near West Bench	Alternative 3—Near Existing Alignment		Alternative 5—Combination West Bench	
			Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Historic House on Nutting Farmstead	No effect	No effect	No effect	No effect	No effect	No effect
18. HAZARDOUS MATERIALS	7 waste collection sites and 3 electric pole transformers	4 waste collection sites	Creosote-stained soil might need to be removed and disposed of	Creosote-stained soil might need to be removed and disposed of	7 waste collection sites and 2 electric pole transformers	7 waste collection sites and 2 electric pole transformers
19. PROPOSED VISUAL QUALITY – Overall Average[c]	3.29 (Moderate)	3.07 (Moderate)	2.67 (Moderate-Low)	2.69 (Moderate-Low)	3.14 (Moderate)	3.20 (Moderate)
20. ENERGY CONSERVATION	Impacts related to energy would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
21. Geology and Soils	Impacts related to geology and soils would be basically the same across the build alternatives and did not affect selection of the Preferred Alternative.					
PUBLIC COMMENT[d]						
Comments FOR / AGAINST (percentage)	73% / 8%	28% / 58%	23% / 56%	23% / 56%	See Note d.	
CONSTRUCTION COST ESTIMATE (in 2012 dollars)	$49.6 million	$45.6 million	$49.9 million	$46.0 million	$47.5 million	$49.6 million

[a]Information based on conceptual design.

[b]One is abandoned and one is occupied rent-free.

[c]Visual Quality Rating (FHWA [1988] Methodology): 7 = High; 5 = Moderate; 1 = Low

[d]Comments not gathered from general public. Affected landowners on the south end of the project area prefer Alternative 5B over Alternative 5A by a ratio of 5 to 1.

Notes:

NRCS = U.S. Department of Agriculture Natural Resources Conservation Service

Section 4(f) = Section 4(f) of the U.S. Department of Transportation Act under 23 Code of Federal Regulations (CFR) 774

2.4.2 Preliminary Cost Comparison

Table 2-11 also presents a preliminary cost comparison of the build alternatives in 2012 dollars escalated at 3 percent per year.

2.4.2.1 Alternative 1—Far West Bench

The estimated construction cost for Alternative 1 would be $49.6 million in 2012 dollars. Interchange Option 1, an at-grade intersection, was used to evaluate the cost for this alternative.

2.4.2.2 Alternative 2—Near West Bench

The estimated construction cost for Alternative 2 would be $45.6 million in 2012 dollars.

2.4.2.3 Alternative 3A—Near Existing Alignment

The estimated construction cost for Alternative 3A would be $49.9 million in 2012 dollars. This cost includes an estimated $1 million to relocate an electrical substation.

2.4.2.4 Alternative 3B—Near Existing Alignment

The estimated construction cost for Alternative 3B would be $46.0 million in 2012 dollars. This cost includes an estimated $1 million to relocate an electrical substation.

2.4.2.5 Alternative 5A—Combined West Bench

The estimated construction cost for Alternative 5A would be $47.5 million in 2012 dollars. Interchange Option 1, an at-grade intersection, was used to evaluate the cost for this alternative.

2.4.2.6 Alternative 5B—Combined West Bench (Preferred)

The estimated construction cost for Alternative 5B (preferred) would be $49.6 million in 2012 dollars. Interchange Option 1, an at-grade intersection, was used to evaluate the cost for this alternative.

2.5 Alternatives Considered but Eliminated from Detailed Analysis

In the development of build alternatives, several design aspects were analyzed to determine their appropriateness related to the proposed project's objectives. These build alternatives included the following:

- **Typical Sections with Two Lanes and Three Lanes (Two-Lane with Passing Lanes).** These typical sections were analyzed for Alternative 5B (preferred), representing all build

alternatives, and for the No Build Alternative. The two-lane and two-lane-with-passing-lanes sections were not developed into build alternatives and dismissed because they neither satisfy the safety needs for local and regional traffic nor accommodate the projected capacity needs for local and regional travelers over the next 20 years, which are both objectives of the proposed project's Purpose and Need. Details of the capacity analysis are discussed in *Section 2.2.2, Typical Sections,* and the results are presented in Table 2-2, which shows the failure to meet LOS B conditions for capacity. The absence of a median would present safety concerns, as discussed in *Section 2.2.2.3, No Median Typical Section,* and would not meet the access management objectives by limiting access possibilities, as discussed in *Section 2.2.3.2, General Access Management*.

- **Typical Sections Without Medians.** The PTW requires a median to satisfy safety needs. Therefore, typical sections without medians were dismissed.
- **Transportation System Management and Transportation Demand Management (TSM/TDM) Alternative.** This alternative for reducing demand through methods of transport (mobility) and/or physical changes (system) neither satisfies the safety needs for local and regional traffic nor accommodates projected capacity needs. The TSM/TDM Alternative was removed from further consideration.
- **Alternative 4—East Bench.** This alternative lacked agency and public support. Riverine and wetland environments from two river crossings would have been affected by this alternative without providing better transportation service than the other build alternatives. Therefore, Alternative 4 was not carried forward for complete analysis.
- **Existing Alignment.** A four-lane section was considered on the existing alignment. However, the existing alignment does not meet the current geometric standards of MDT for this type of highway (MDT, 2004). It is located between an existing railroad right-of-way on one side and residential and agricultural properties on the other. It physically cannot be expanded to a four-lane highway on its existing alignment without severe right-of-way and railroad impacts. Expansion to accommodate a four-lane highway toward the railroad would require the railroad to be relocated in order to maintain minimum right-of-way width for the railroad, and would be cost-prohibitive. Expansion in the opposite direction, toward the residential and agricultural properties, would require additional right-of-way that would affect 47 residential properties and 1 business property, including 25 residential relocations. Therefore, the existing alignment does not meet the Purpose and Need of the proposed project, and was not carried forward.

The TSM/TDM Alternative and Alternative 4—East Bench are discussed in the following sections.

2.5.1 Transportation System Management and Transportation Demand Management (TSM/TDM) Alternative

A Transportation System Management (TSM) strategy applies low-cost actions to increase the capacity of existing facilities for moving traffic more effectively and more efficiently.

Transportation Demand Management (TDM) programs are designed to maximize the people-moving capability of the transportation system. TDM programs might increase the number of persons in a vehicle, decrease the total number of vehicles on the road during peak travel periods, or influence the time or need to travel.

For the proposed project, public transportation services would consist of a relatively low-cost bus or shuttle system to consolidate travel trips to and from the project area. The transit system route for buses and/or shuttles would be planned on US 212 between Red Lodge and Laurel, as justified by the riders. With the TSM/TDM Alternative, a wide variety of mobility options would be provided to the public to manage travel demand. Mobility options could include bicycling, van pooling, car pooling, park-and-ride, transit, and walking. These options could be used to reduce the number of vehicles using the road system, especially during peak travel times. Operational system improvements could include high-occupancy vehicle lanes, improved signal timing at specific locations, or one-way street pairs.

Reducing traffic demand through mobility or system improvements was evaluated at the conceptual level as a potential means for improving the highway's efficiency. Limited opportunities exist to implement mobility options because of the rural nature of the PTW and low public demand for such services. For example, FHWA Technical Memorandum T 6640.8A (1987) indicates that this alternative is "usually relevant only for major projects proposed in urbanized areas over 200,000 population." Additionally, a high percentage of traffic on the PTW originates in other cities and states, and it is difficult to reduce such traffic using either TSM or TDM alternatives. There is limited demand for high-occupancy vehicle lanes. In addition, there are no signals on the PTW that could be timed or street grids that could be converted to one-way street pairs. For the reasons listed, the effectiveness of the TSM/TDM Alternative would be very limited. Also, safety improvements would not be feasible under this alternative. Therefore, the TSM/TDM Alternative does not meet the Purpose and Need to improve safety for local and regional traffic needs, nor does it accommodate projected capacity needs. However, elements of the build alternatives, such as wide shoulders, would improve mobility options for walking or bicycling.

2.5.2 Alternative 4—East Bench

The Alternative 4 alignment (Figure 2-2) would:

- Extend east-northeasterly from Alternative 3A's projected junction with US 310 southerly of Rockvale.
- Turn northeasterly after intersecting Brush Road.
- Cross both the railroad tracks and the Clarks Fork Yellowstone River before turning northerly.
- Return onto a northeasterly bearing after intersecting Richards Lane approximately 2.3 km (1.4 mi) east-northeasterly of Silesia.
- Curve northwesterly across Byam Road.
- Cross the Clarks Fork Yellowstone River again.

- Turn northeasterly to connect onto the PTW near RP 52.3.

Natural resource and regulatory agencies expressed concern about impacts to the riverine and wetland environments from two river crossings. For this alternative to be acceptable, bridge crossing abutments would be allowed only limited encroachment on the riparian areas paralleling the river. This would be a difficult, challenging, and costly bridge crossing. Alternative 4 was removed from further consideration because it lacked agency and public support, there were potentially significant environmental impacts, and it was unable to provide better transportation service than the other build alternatives.

2.6 Basis for Recommending the Preferred Alternative

The build alternatives would:

- Improve traffic operations (for example, decrease congestion and increase safety)
- Have similar effects on both the natural and constructed environments
- Satisfy the Purpose and Need of the proposed project
- Improve the projected capacity of US 212 through reconstruction of the highway

The No Build Alternative and the build alternatives (Alternatives 1, 2, 3A, 3B, 5A, and 5B [preferred]) have been evaluated using the environmental analysis process.

The No Build Alternative would not satisfy the Purpose and Need of the proposed project (for example, it would not improve the safety and projected capacity of US 212). Since a multilane facility would provide opportunities for passing slower moving traffic, overall travel times for the build alternatives would be less than travel times using the No Build Alternative.

MDT and FHWA determined that either Alternative 1 or Alternative 2, when compared to Alternative 3, was more beneficial for the following comparative reasons:

- Fewer impacts to homes
- Less wetland impacts
- Improved access management considerations for mobility
- Improved safety because of fewer access points and reduced railroad conflicts

MDT and FHWA further tried to differentiate between Alternatives 1 and 2, but the alignments appeared similar in quantitative analysis. Therefore, public and landowner input was sought. That input resulted in the creation of Alternative 5, which combines some elements of Alternatives 1 and 2. When it was realized that Alternative 5 went through a planned subdivision near Rockvale, MDT and FHWA renamed Alternative 5 as Alternative 5A and created Alternative 5B (preferred). Alternative 5B (preferred) is located primarily along the original Alternative 5 alignment with the exception of a shift to incorporate landowner input and avoid the subdivision.

The public has been an active partner in developing the build alternatives throughout the planning and evaluation stages of the proposed project. MDT has listened closely to public preferences as a matter of MDT's policy to involve the public in the decision-making process. During preparation of the Draft EIS (MDT and FHWA, 2007), a series of three public meetings and one neighborhood meeting was held and comments from each were considered in the development of alternatives and the selection of the Preferred Alternative. At the third public meeting, a majority of the public expressed a preference for Alternative 2 from Rockvale going north and up to the bench to the point where it was closest to Alternative 1, then continuing along Alternative 1. This combination of alternatives addressed their concerns that businesses would be impacted if Rockvale was bypassed, and safety would not be adequately addressed if the northern portion of the route remained on the PTW. The public suggested a connection between Alternatives 2 and 1 be moved farther south to reduce some of the impacts to properties and other resources in the immediate area of the connection. This led to the development of Alternative 5 (now called 5A). Since the only part of the Alternative 5A route not presented previously to the public in detail was a short section between Alternatives 2 and 1 a little north of Rockvale, a small group meeting of affected landowners was held. This group suggested shifting the connection between Alternatives 2 and 1 slightly farther south, creating Alternative 5B (preferred). Alternative 5B (preferred) affects two additional houses near its intersection with the PTW, however they are in disrepair (one is abandoned and the second is occupied rent-free). The landowners preferred this compromise for the improvement of Alternative 5A, with respect to its proximity to homes and farming operations.

As a multilane highway, Alternative 5B (preferred) would provide operations at LOS A at least through the year 2025. The undeveloped nature of the corridor would allow the planned control of access during the design process to minimize what might be considered adverse impacts by those with properties abutting the highway and those needing access to the highway. The location of properly spaced intersections allowing U-turns or cross-turning movements would effectively provide the access control desired, resulting in acceptable operating safety along the corridor. As with the other build alternatives, a non-traversable median would be provided for safe uses of these locations.

For the above reasons, and based on public comments on the Draft EIS, FHWA and MDT have selected Alternative 5B—Combined West Bench as the Preferred Alternative in this Final EIS.

2.7 Permits and Other Governmental Actions

Implementation of a build alternative might include, but not be limited to, one or more of the following federal actions:

- Issuance of a Section 404 of the Clean Water Act (CWA) Permit by the COE for proposed fill impacts to jurisdictional wetlands and Waters of the U.S. For further information, see the CWA Section 404(b)(1) analysis of the proposed project in *Appendix E*.

- Approval for floodplain encroachments from FEMA, which are administered by each county.
- Coordination with the U.S. Fish and Wildlife Service (FWS) concerning threatened and endangered species.

Implementation of a build alternative might include, but not be limited to, one or more of the following state actions:

- Compliance with the water quality provisions of MCA 75-5-308 for Section 318 Authorizations and the stream protection provisions of MCA 87-5-501 through 509.
- A Stream Protection Act Notification (SPA 124) authorization from Montana Fish, Wildlife and Parks (MFWP).
- A Section 401 of the CWA certification from the Montana Department of Environmental Quality (MDEQ).
- A Section 402/Montana Pollutant Discharge Elimination System (MPDES) authorization from MDEQ.
- A water use permit from the Montana Department of Natural Resources and Conservation.
- Coordination with the MFWP concerning state species of concern.

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CHAPTER 3 AFFECTED ENVIRONMENT

This affected environment chapter describes the existing social, economic, and environmental conditions in the Rockvale to Laurel project area. The existing conditions are a baseline for assessing impacts associated with the proposed highway reconstruction project for US 212.

This chapter is organized into the following sections:

- Land Use
- Farmlands
- Social Conditions
- Transportation Right-of-Way and Relocations
- Economic Conditions
- Environmental Justice
- Pedestrian and Bicycle Considerations
- Air Quality
- Noise
- Water Flow and Quality
- Wetlands
- Water Bodies and Aquatic Resources
- Vegetation
- Wildlife Resources
- Threatened and Endangered Species and State Species of Concern
- Floodplains
- Cultural Resources
- Hazardous Materials
- Visual Resources
- Energy Consumption
- Geology and Soils

3.1 Land Use

The US 212 project area is located within both Carbon County and Yellowstone County between the City of Laurel and the community of Rockvale. The unincorporated town of Silesia, about 5.1 km (3.2 mi) from the southern terminus of the project area, is situated on both sides of the existing US 212 alignment.

The project corridor is populated with small farms and residences, some of which abut US 212. As shown on Figure 3-1, land uses surrounding the highway include agricultural, business, and the railroad right-of-way. Concentrated growth and development is limited to nearby Laurel in Yellowstone County. New growth in Carbon County (within the project area) tends to be scattered rural residential development.

This section includes information about:

- Carbon County Land Use
- Yellowstone County Land Use
- Project Area Land Use
- Applicable Land Use Policies

3.1.1 Carbon County Land Use

Carbon County covers 531,698 hectares (ha) (1,313,850 acres [ac]). Public lands, which account for 45 percent of the land ownership, are not available for development (Carbon County, 2003). Land use within the county varies greatly, depending on its elevation. Land situated lower in the Clarks Fork Yellowstone River valley tends to be more suited for agricultural production because of its fertile soil and good drainage. Land situated at higher elevations tends to support the production of wheat or hay or to be used as pastureland.

The number of new housing units in the county increased by more than 17 percent from 1990 to 2000. During that time, the county processed 270 subdivision applications. Mobile homes comprise 17 percent of total housing. Approximately 7 percent of the housing is in unsound or poor condition (Carbon County, 2003).

Much of the growth in new housing units can be attributed to vacation or seasonal homes, which accounted for approximately 19 percent of the housing in Carbon County. For example, between 1980 and 1990, the number of seasonal and vacation homes increased from 205 to 893 (Carbon County, 2003). This growth in seasonal and vacation homes can be attributed to such things as the proximity of Carbon County to Red Lodge (for winter skiing), the Beartooth Highway, the Chief Joseph Highway, and Yellowstone National Park, and the presence of the Clarks Fork Yellowstone River (excellent trout fishing).

The BNSF Railway operates within Carbon County. The BNSF Railway parallels US 212 to the east (that is, throughout the majority of the project area) beginning near Silesia. According to the *Carbon County Montana Growth Policy*, 10 to 12 trains cross the county in a 24-hour period, traveling between Laurel, Montana, and Denver, Colorado (Carbon County, 2003).

3.1.2 Yellowstone County Land Use

Yellowstone County covers approximately 690,494 ha (1,706,240 ac). The majority of the land is used for agricultural purposes (76 percent). The remaining land uses include the Crow Tribal Trust and Individual Allotments (8.5 percent), residential (2 percent), commercial and industrial (0.8 percent), and park land (0.1 percent). The balance of the land (12.5 percent) is for other uses, including roads, waterways, and public lands not included in the categories listed above (Yellowstone County, 2003).

The City of Laurel owns Riverside Park. This park is outside the city limits and adjacent to US 212 north of the project area.

ALTERNATIVE ALIGNMENTS

- 1 — Far West Bench Alternative
- 2 — Near West Bench Alternative
- 3 — Near Existing Alignment Alternative (A & B)
- 5 — Combined West Bench Alternative (A & B)

- Business
- Farmstead
- Residence
- County Boundary
- Subdivision
- Incorporated Town
- Open Land/Natural
- Crop Land
- Range Land

RP53 RP52 RP51 RP50 RP49 RP48 RP47 RP46 RP45 RP44 RP43 RP42

US 212

Round Butte

0 1 Kilometer

N

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 3-1
EXISTING LAND USE

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3.1.3 Project Area Land Use

The project area covers approximately 3,875 ha (9,575 ac) of land. For purposes of this analysis, the project area is defined as the properties through which one or more of the alternatives would cross. Approximately 90 percent of the project area is located within Carbon County, with the remaining 10 percent in Yellowstone County (Figure 3-1).

The portion of the project area in Carbon County is composed of 57 percent cropland, 37 percent rangeland, and the remainder either open/natural land or residential subdivisions. The Yellowstone County portion of the project area is classified as 94 percent cropland and 6 percent open/natural land (Table 3-1). The majority of the residences within the project area are located adjacent to US 212. As a result of the project area's proximity to the City of Laurel, residences are more concentrated in Yellowstone County than in Carbon County (Figure 3-1). However, there are more residences in Carbon County than in Yellowstone County (Table 3-2). Approximately 10 businesses are located within Carbon County and 6 businesses are located within Yellowstone County. Tribal lands are not present in or adjacent to the project area.

TABLE 3-1
Project Area General Land Uses by County

	Carbon County	Yellowstone County
Rangeland	57%	94%
Cropland	37%	0%
Open/Natural Land	4%	6%
Residential (Subdivisions)	2%	0%*

*Less than 0.5 percent

TABLE 3-2
Project Area Residences and Businesses by County (Number)

	Carbon County	Yellowstone County
Residential Units		
Farmsteads	25	4
Subdivisions	39	14
Rural	24	6
Town	21	0
Businesses	10	6

3.1.4 Applicable Land Use Policies

Carbon County, Yellowstone County, and the City of Laurel have developed growth policies intended to provide direction for future growth and land use planning within their jurisdictions (Carbon County in 2003, Yellowstone County in 2003, and the City of Laurel in 2004). The portion of the project area in Yellowstone County is within the future growth area of the City of Laurel, so the city's growth policy would be the main document used for determining future land use. State of Montana planning documents do not describe applicable land use policies, goals, or objectives relative to this project. The following sections summarize the relevant land use issues and policies for Carbon County; Yellowstone County and the City of Billings; and the City of Laurel.

3.1.4.1 Carbon County Montana Growth Policy

Although the *Carbon County Montana Growth Policy* (adopted August 14, 2003) does not identify specific land use designations for the project area, it does provide general policies and objectives for guiding future development.

- Objective 1.4: Discourage the conversion of prime agricultural lands to other uses.

  1.4.A. Request that the Montana Department of Transportation (MDOT [sic]) provide information on how alternatives under consideration for both 212 and Highway 78 reconstruction will affect existing residences and prime agricultural land. Develop a County position on a preferred location for the 212 re-route that will minimize disruption of citizens and the loss of prime agricultural land.

- Objective 1.5: Encourage development in areas that are not in agricultural production.

- Objective 1.6: Ensure direct County input into any proposal with the potential to cause large-scale impacts to land use, natural resources, or quality of life in the County.

  1.6.B. Request that Montana Department of Transportation provide regular briefings on the status of the 212 re-route and upgrade project. Request that the MDOT hold a public meeting on this project in the Fort Rockvale area so that Carbon County residents can be updated and offer input and concerns. Provide County input to the project so that access points are coordinated with County infrastructure.

- Objective 1.7: Encourage the preservation of open space and wildlife habitat in the County.

3.1.4.2 Yellowstone County and the City of Billings 2003 Growth Policy

The *Yellowstone County and the City of Billings 2003 Growth Policy* (Yellowstone County, 2003) identifies goals and policies relative to the project area. The relevant Yellowstone County land use goals include:

- Land Use Element
  - Issue: Rural townsites are not prepared to handle increased growth.

    Goal: Growth management tools available to rural townsites.

    Objectives:

    - Empower communities to direct growth.
    - Use County resources and services more efficiently.
  - Issue: Urban sprawl threatens the rural character of land surrounding Billings, increases the cost of providing public services, and threatens the vitality of the city core and downtown area.

    Goal: Contiguous development focused in and around existing population centers separated by open space.

    Objectives:

    - Ensure the continued functionality of natural systems.
    - Use City and County resources in a cost effective manner.
- Economic Development
  - Issue: Entryways to our communities should be attractive and not present physical barriers discouraging economic development.

    Goal: Attractive and accessible communities.

    Objectives:

    - Reduce travel time through town.
    - Increase the visual appeal.
- Natural Resources
  - Issue: The quality of the Yellowstone River and the associated riparian habitat is threatened.

    Goal: A healthy river ecosystem system that supports multiple uses.

    Objectives:

    - Ensure continued recreational access.
    - Protect wildlife and wildlife habitat.

- Transportation
  - Issue: Lack of adequate traffic control.

    Goal: Reduced rate of vehicle collisions.

    Objectives:

    - Reduce potential harm to people and property.
    - Maintain safe and efficient traffic flow.
  - Issue: The design of roads, streets, and pedestrian facilities can be more attractive and functional.

    Goal: Visually appealing rights-of-way that serve the needs of all users.

    Objectives:

    - Employ smart, cost effective designs.
    - Use designs that recognize the needs of all users.
    - Incorporate attractive visual elements into rights-of-way design.

3.1.4.3 City of Laurel 2004 Growth Policy

The *City of Laurel 2004 Growth Policy* (City of Laurel, 2004) describes land use issues and provides policy and strategies to direct future actions. The City of Laurel provides comprehensive planning for approximately 1 mile south and all areas north of the Yellowstone River. Three of the four policies for land use issues have some relevance to the proposed project. The fourth, non-relevant, policy for land use issues addresses industrial development near the local airport. The three relevant policies are:

- Concentrate development in areas with access to community water and sewer and promote infill development on vacant land within the city limits.
- Enable the development of affordable housing throughout the jurisdictional area.
- Identify community aesthetic enhancement opportunities. (This item is paraphrased from a list of enhancement strategies.)

3.2 Farmlands

Agriculture and ranching are the dominant land uses in the project area. The primary crops raised are sugar beets, malt barley, corn, wheat, and alfalfa. In the northern portion of the project area, some farmland has been converted to residential development, and this trend will likely continue with or without the implementation of the proposed project.

The farmland classification system, according to the U.S. Department of Agriculture (USDA), identifies map units as prime farmland or Farmland of Statewide Importance. Additional farmlands may be mapped as prime units by state or local importance defined by state law or local ordinance. Further clarification to farmland classification occurs within the *National Soil Survey Handbook* (NSSH) (USDA Natural Resources

Conservation Service [NRCS], 2005) with the additional subset of prime if irrigated soil units mapped as indicated.

- **Prime Farmland.** The definition of Prime Farmland used by the NRCS includes "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not developed urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from irrigation, a favorable temperature and growing season, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period, and they either do not flood frequently or are protected from flooding" (7 Code of Federal Regulations [CFR] 657.5).
- **Farmland of Statewide Importance.** The definition of Farmland of Statewide Importance used by the NRCS includes farmlands "that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods" (7 CFR 657.5).
- **Prime Farmland if Irrigated.** The NSSH is published by NRCS to deliver scientifically based information on soil classification and use. The NSSH further clarifies Prime Farmland if Irrigated, "Some map units include areas that have a developed irrigation water supply that is dependable and of adequate quality and areas that do not have such a supply. In these units, only the irrigated areas meet the prime farmland criteria" (NSSH 622.04[a]4; NRCS, 2005).

Figure 3-2 illustrates the location of the farmland in the project area based on the farmland classification system developed by the NRCS. As shown on Figure 3-2, much of the Prime Farmland if Irrigated lies near or in the floodplains of the Clarks Fork Yellowstone River and of the Yellowstone River. Much of the Farmland of Statewide Importance appears to be located on the higher terraces and foothills surrounding the valley floor.

The *Yellowstone County and the City of Billings 2003 Growth Policy* (Yellowstone County, 2003) states: "Safeguards are needed so that agriculture can continue to be an important component of the County's economy. The most significant land use issue relating to agriculture is the intrusion of residential uses into areas of agricultural production." The *Carbon County Montana Growth Policy* (Carbon County, 2003) indicates a clear desire to protect farming while encouraging controlled growth and development opportunities.

3.3 Social Conditions

This section describes the general community characteristics; public services; parks and recreation opportunities; and transportation patterns and safety found in Carbon and Yellowstone counties near Laurel, Montana.

3.3.1 Community Characteristics

Demographic information was obtained from the U.S. Census Bureau. The population of Carbon County was 9,552, while that of Yellowstone County was 129,352 where the City of Billings population made up more than 70 percent of Yellowstone County's population (U.S. Census Bureau, 2000).

According to U.S. Census Bureau data, only minor variations exist in the distribution of people by gender, age, and race/ethnicity among the counties and the City of Laurel.

Except for the cities of Laurel and Billings, the population for the region is widely dispersed and unincorporated. Both cities, which are located in Yellowstone County, account for the large difference in population between the two counties. Except for the two cities, the rural landscape is similarly populated in both counties.

3.3.2 Public Services

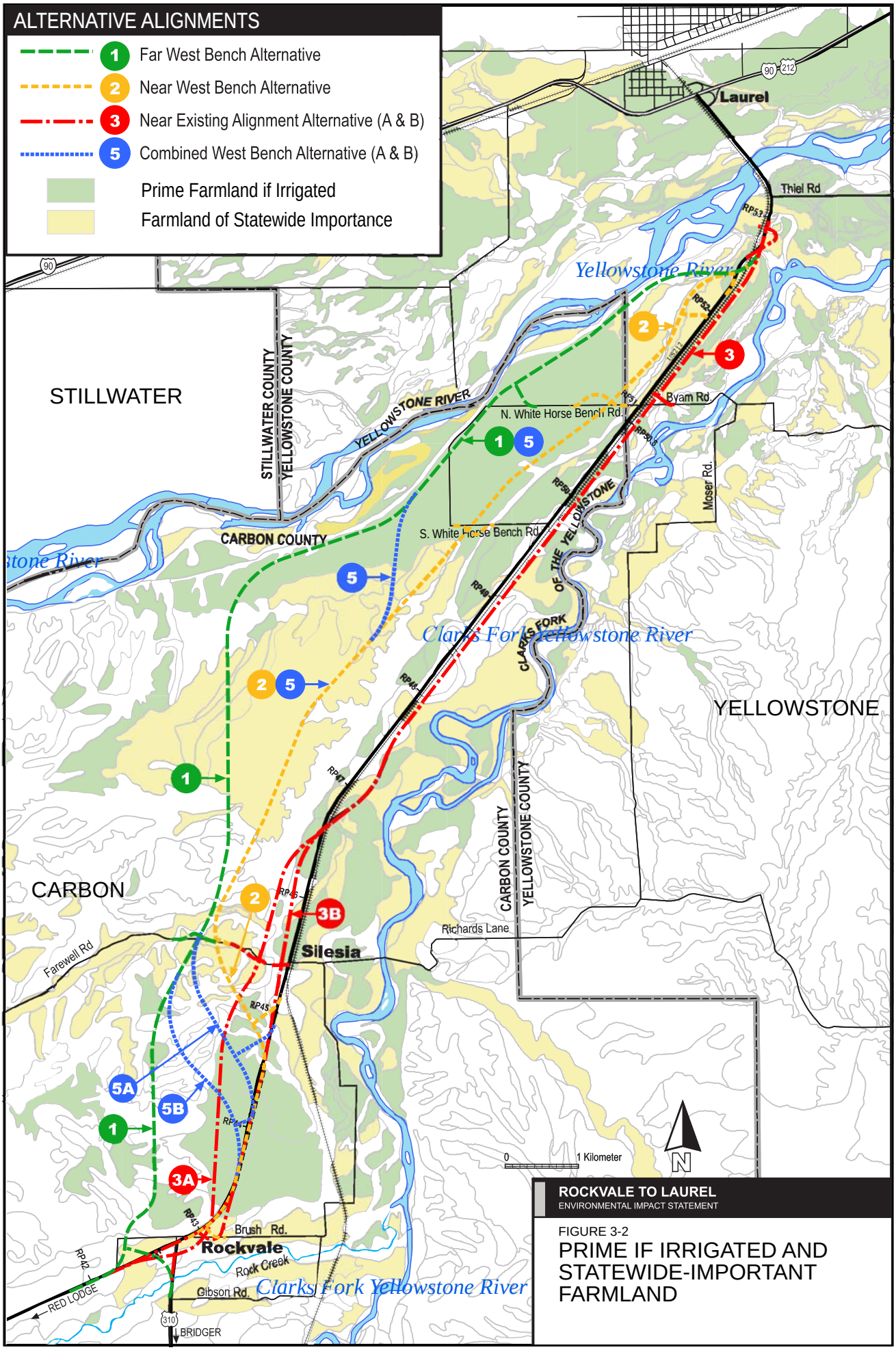
The police department in the City of Laurel is a 12-person force that patrols within the city limits (Gabrian, personal communication [pers. comm.], 2006). The Carbon County Sheriff's Department and the Yellowstone County Sheriff's Department respond to emergencies within their respective counties. The Montana Highway Patrol responds to emergencies along US 212 and US 310 within the project area.

Fire protection in Laurel is provided by a 35-member volunteer fire department. That fire department serves Districts 5, 7, and 8, which cover the project area and the City of Laurel. Rockvale is in District 8.

The ambulance service for both counties is a volunteer service that provides basic life support response. Yellowstone County's ambulance service, which is stationed in Laurel, provides service on US 212 north of Rockvale. Carbon County's basic life support service, which is stationed in Joliet, provides service south of there, including Rockvale (Rieger, pers. comm., 2006). Advanced life support response is a specialized ambulance emergency response program. Yellowstone County's advanced life support, which is contracted with American Medical Response, travels from Billings. Carbon County's advanced life support is provided from both Joliet and Red Lodge (Fought, pers. comm., 2001).

Yellowstone Valley Electric Co-Op provides electricity and Montana Dakota Utility provides natural gas to properties in the project area. Northwestern Energy has some utility lines that cross the project area. There is an electrical substation adjacent to the route for Alternatives 3A and 3B.

The US 212 corridor contains six public water supplies: the City of Laurel, The River's Edge, El Rancho Inn, Rockvale Travel Plaza, Quick Stop Drive In, and Fort Rockvale Restaurant and Lounge. The City of Laurel's water supply is from the Yellowstone River and the other public water supplies are from wells. Most rural water supplies come from wells. (See discussion in *Section 3.10.5, Source Water Protection*.)


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Prime Farmland if Irrigated
Farmland of Statewide Importance
STILLWATER
CARBON COUNTY
YELLOWSTONE
CARBON
STILLWATER COUNTY
YELLOWSTONE COUNTY
YELLOWSTONE RIVER
Yellowstone River
Clarks Fork Yellowstone River
Laurel
Thiel Rd
Byam Rd.
N. White Horse Bench Rd.
S. White Horse Bench Rd.
Moser Rd.
Richards Lane
Silesia
Farewell Rd
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
RED LODGE
BRIDGER
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 3-2
PRIME IF IRRIGATED AND STATEWIDE-IMPORTANT FARMLAND
T10205002BOI fig3-1cropland 7-16-2006

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3.3.3 Parks and Recreation Opportunities

Although recreational facilities do not exist within the project area, Riverside Park lies along US 212 south of the City of Laurel and immediately north of the project area. The City of Laurel owns Riverside Park, which is outside the city limits. The city plans to annex the park within the next couple of years (Cumin, pers. comm., 2006). Riverside Park provides the following facilities: a rod-and-gun club; a trap-shooting club; tent camping; recreational vehicle camping with water and sewer hookups; and a large building rented for weddings, reunions, picnics, and other large activities (McGann, pers. comm., 2001). The park contains gravel paths and parking areas and has not been upgraded for wheelchair access to the public. It is uncertain when upgrades to the park will be made (Cumin, pers. comm., 2006).

The project area does not include other public facilities owned or managed by city, county, state, or federal governments. School children in Rockvale and Silesia are bused to Joliet.

There are three parks near the project area that are considered Section 6(f) properties under the Land and Water Conservation Fund (L&WCF) Act (Public Law 88-578, as amended) (Section 6[f]). They are Laurel Riverside Park, Laurel Thompson Park, and Yellowstone County Two Moons Park. Coordination with the L&WCF Grant Administer (MFWP) verified that there would be no impact to Section 6(f) properties (Timmerman, 2008).

3.3.4 Transportation Patterns and Safety

US 212 is the primary north-south transportation route in Carbon County, and the portion north of Rockvale is on the NHS. US 212 serves residential, recreational, commercial, and agricultural land uses throughout the county. In addition, it is a primary transportation route for interstate traffic between southern Montana and northern Wyoming.

The mix of local and regional traffic results in conflicts, including slow versus faster travel desires, sightseeing versus destination-oriented driving, and frequent stops versus through connectivity with other portions of the NHS. The existing two-lane US 212 is undersized for carrying anticipated traffic volumes in the next 20 years and beyond, further compounding traffic patterns into the future.

As discussed in *Section 1.3, Need*, safety is a major concern and part of the need for this project. Accident rates involving truck traffic are higher than the state average for similar roadways in Montana. Accidents of all kinds are most frequently located at points of access (such as driveways and local roadways connecting to US 212) and stationary objects. The distance for storing vehicles stopped between US 212 and railroad crossings (vehicle storage distance) is inadequate, also leading to more accidents.

3.4 Transportation Right-of-Way and Relocations

The US 212 right-of-way through Rockvale is 27.4-m (90-ft) wide, with 12.2 m (40 ft) on the north side and 15.2 m (50 ft) on the south side of US 212. North of Rockvale, the US 212

right-of-way is adjacent to either active or abandoned railroad rights-of-way (on the eastern edge) and to farmland or rural residential land (on the western edge).

From Rockvale to Silesia (approximately 4.4 km [2.7 mi]), the railroad has been abandoned and its right-of-way has been sold. Some of this previous railroad right-of-way is held privately and some is owned by MDT. The exact width of the highway right-of-way in this section has not been researched. The width is a minimum of 30.5 m (100 ft), with 15.2 to 18.3 m (50 to 60 ft) on the west side of US 212 and 15.2 to 54.9 m (50 to 180 ft) on the east side.

Between Silesia and the railroad underpass at the north end of the proposed project (approximately 12.1 km [7.5 mi]), the US 212 right-of-way is adjacent to the active BNSF Railway right-of-way. The highway right-of-way owned by MDT is generally 24.4-m (80-ft) wide. This is augmented by a 6.1-m (20-ft) easement on the railroad right-of-way, which provides a functional width of 30.5 m (100 ft) for US 212.

3.5 Economic Conditions

The economic conditions section provides a regional economic summary and information about the local economy.

3.5.1 Regional Economic Summary

Key indicators of the regional economy were evaluated for both Carbon and Yellowstone counties, such as number and types of industry jobs, unemployment rates, per capita income, and property taxes collected.

3.5.1.1 Employment

Table 3-3 presents the number of employed adults for Carbon and Yellowstone counties from 1990 to 1999.

TABLE 3-3
Employment Trends for Carbon and Yellowstone Counties, 1990-1999

	Carbon County			Yellowstone County		
Industry	**1990**	**1999**	**Change**	**1990**	**1999**	**Change**
Farm employment	778	893	15%	1,288	1,431	11%
Non-farm employment	2,788	4,089	47%	69,218	87,415	26%
Private	2,242	3,487	56%	60,454	78,163	29%
Agriculture/forestry/fisheries	106	153	44%	568	848	49%
Mining	34	57	68%	879	653	-26%
Construction	193	324	68%	2,842	5,526	94%
Manufacturing	127	151	19%	3,545	3,730	5%
Transportation and public utilities	108	137	27%	4,576	5,430	19%
Wholesale trade	50	101	102%	5,818	6,750	16%
Retail trade	615	886	44%	14,045	18,232	23%
Finance, insurance, and real estate	173	347	101%	5,935	6,231	5%

TABLE 3-3
Employment Trends for Carbon and Yellowstone Counties, 1990-1999

Industry	Carbon County			Yellowstone County		
	1990	1999	Change	1990	1999	Change
Services	836	1,331	59%	22,246	30,763	38%
Government	546	602	10%	8,764	9,252	6%
Federal, civilian	73	73	0%	1,811	1,724	-5%
Military	62	54	-13%	897	735	-18%
State and local	411	475	16%	6,056	6,793	12%
State	24	25	4%	1,588	1,713	8%
Local	387	450	16%	4,468	5,080	14%

Source: Montana Department of Commerce, Census and Economic Information Center (Census 2000).

Yellowstone County has a much larger work force than Carbon County, due to the population of Billings. The services industry, retail trade, local government, and agriculture/ forestry/fisheries are large business sectors for both counties. The fastest growing business sectors between 1990 and 1999 were wholesale trade, finance/insurance/real estate, construction, and mining (in Carbon County) and construction, agriculture/forestry/fisheries, and the service industry (in Yellowstone County).

3.5.1.2 Unemployment

Table 3-4 presents the unemployment rates for Carbon County, Yellowstone County, and Montana for 1995 and 2005. In 1995, the unemployment rate in Montana was similar to Carbon County's, while Yellowstone County's was lower by more than 1 percent. In 2005, the state unemployment rate had dropped by almost 2 percent (to 4.0 percent), which is similar to the reduction in the unemployment rates of both Carbon and Yellowstone counties. Both counties' unemployment rates were slightly lower than the state average. These numbers do not reflect the downturn in the U.S. economy during 2002.

TABLE 3-4
Average Annual Unemployment Rates by County

	1995 Rate	2005 Rate	Percentage Point Change 1995-2005
Carbon County	6.0%	3.5%	-2.5%
Yellowstone County	4.8%	3.2%	-1.6%
Average	5.4%	3.4%	-2.0%
Montana	5.9%	4.0%	-1.9%

Sources: Montana Department of Commerce, Census and Economic Information Center, and Montana Department of Labor and Industry, Research and Analysis Bureau, Local Area Unemployment Statistics.

3.5.1.3 Per Capita Income

Per capita income for Carbon County, Yellowstone County, and Montana for 1990 and 1999 is shown in Table 3-5. The 1999 average per capita income in Carbon County was approximately the same as the state average. The 1999 average per capita income in

Yellowstone County was $2,152 higher than the state average—a $2,099 difference in per capita income between Carbon and Yellowstone counties. In 1999, the average U.S. per capita income was $21,587, and the Montana average was $17,151. Montana was approximately $4,400 below the national average. Between 1990 and 1999, Yellowstone County's average annual rate of increase in per capita income (1 percent) kept pace with the rates for the state and the nation. Carbon County's per capita income increased at an average annual rate of 1.7 percent. In summary, Carbon County's per capita income was below the state average, but was growing at a faster rate than Yellowstone County's per capita income.

TABLE 3-5
Per Capita Income, 1990-1999

	1990	1999	Difference from 1999 State Average	Percent Average Annual Increase (1990-1999)	Percent of State Average (1999)
Carbon County	$14,764	$17,204	$53	1.7%	100%
Yellowstone County	$17,538	$19,303	$2,152	1.0%	113%
Montana	$15,524	$17,151	$0	1.0%	NA
United States	$19,650	$21,587	$4,436	1.0%	126%

Note: NA = not applicable
Source: U.S. Census Bureau, 2000.

3.5.1.4 Taxes

Public finance mechanisms include taxes, royalties, and other fees paid to local, state, and federal governments. Taxes in Montana consist of property taxes, income taxes, natural resource taxes (coal, oil, and natural gas), and selective sales taxes (cigarette and alcoholic beverages). Montana does not have a general sales tax.

Table 3-6 shows the types and amounts of property taxes collected in Carbon and Yellowstone counties in the 2000 tax year. Total property taxes collected in Yellowstone County were approximately 10 times greater than those collected in Carbon County.

TABLE 3-6
Property Taxes Collected in Carbon and Yellowstone Counties (2000)

	Carbon	Yellowstone
Class 3 (agricultural lands)	$2,283,678	$3,759,050
Class 4 (land and Improvements)	$12,157,931	$134,357,674
Residential	$10,310,857	$90,366,752
Commercial	$1,732,976	$39,801,551
Industrial	$87,816	$3,319,712
Total	$26,573,258	$271,604,739

Source: Montana Department of Revenue, 2000.

3.5.2 Local Economy

The local economy section provides some economic data for the project area, the City of Laurel, and Red Lodge. The local economy was assessed through use of local maps; county records; phone surveys with local governments and businesses; and field visits to the project area.

US 212 receives a substantial amount of seasonal traffic from tourists traveling to the Beartooth Mountains and Yellowstone National Park for outdoor recreation. Many businesses along US 212 rely on tourism dollars from summer vacationers, fall sportsmen, and winter skiers. According to Tom McNew, owner of the Rockvale Travel Plaza (pers. comm., 2001), of the seasonal traffic, the summer business is the most robust. The local businesses within the project area include three restaurants, one convenience store, and a tractor sales and repair business.

The largest business sectors in the City of Laurel, which is located just north of the project area, are the retail trade and service industries. Red Lodge, a tourist town south of the project area, provides snow skiing to the surrounding area, including Billings.

The "Peaks to Prairie Triathlon" is an annual event that draws hundreds of athletes and their families to the local area. The three-phased race is a 6.4-km (4-mi) run, a 64.4-km (40-mi) cycle, and a 24.1-km (15-mi) canoe race that begins in Red Lodge and ends in Billings. The section of US 212 proposed for realignment is used for the cycling phase.

3.6 Environmental Justice

To evaluate the project's potential effects, analysts visited the study area to observe the current neighborhood environment, reviewed data from the U.S. Census Bureau for demographic information, reviewed existing planning documents, and reviewed the public outreach performed and the comments received from the public. Analysts collected information from a variety of federal, state, and local sources and used data from the U.S. Census Bureau Tracts to define study area demographic characteristics and projections. Potential effects on the social elements in the study area were identified by reviewing existing data and the project design. The study area included three census tracts that intersect the corridor. The census tracts are larger than the study area; therefore, the available data analyzed in this section applies to a broader area than the study area.

Two federal regulations specify how projects can impact low-income and minority groups. Under Executive Order (E.O.) 12898 (*Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*, February 1994), if adverse impacts to minority or low-income groups are disproportionately high, an effort must be made to avoid them or to minimize the impacts and provide mitigation. Under Title VI of the Civil Rights Act of 1964, no person may be discriminated against because of race, color, national origin, sex, or age under any program or activity receiving federal financial assistance.

3.6.1 Minority Population

U.S. Census Bureau data indicated that the study area has similar minority populations to the surrounding area at different scales, including Montana, Yellowstone County, and Carbon

County. The percentage of minority populations is shown in Table 3-7. Because the study area is similar to the larger population, the surrounding areas were averaged and the minority population is anticipated to represent 4.7 percent of the total population (lower than the state and Yellowstone County averages). No disproportionately high levels of minority populations were identified through analysis of census data or site visits to the study area.

TABLE 3-7
Minority Populations Within and Surrounding the Project Area*

Area	Total Population	Minority Population	% Minority
Montana	902,195	84,591	9.4%
Yellowstone County	129,352	9,107	7.0%
Carbon County	9,552	224	2.3%
Census Tract 30009000100	2,230	70	3.1%
Census Tract 30111001400	9,976	417	4.2%
Census Tract 30111001600	5,934	374	6.3%
Study Area	18,140	861	4.7%

*U.S. Census Bureau, 2000

3.6.2 Household Income

In 2000, the mean household incomes for Carbon and Yellowstone counties were $32,139 and $36,727, respectively. The mean household income for Montana was $33,024 (U.S. Census Bureau, 2000). The mean household income for Carbon County was slightly lower and that for Yellowstone County was slightly higher than the mean household income for the state. The higher mean household income in Yellowstone County is attributed to Billings, which has higher-paying industries.

3.6.3 Poverty Population

U.S. Census Bureau data indicated that the study area has similar low-income populations to the surrounding area at different scales, including Montana, Yellowstone County, and Carbon County. The percentage of low-income populations is shown in Table 3-8. Because the study area is similar to the larger population, the surrounding areas were averaged, and the low-income population is anticipated to represent 7.7 percent of the total population (lower than the state and county averages). No disproportionately high levels of low-income populations were identified through analysis of census data or site visits to the study area.

3.7 Pedestrian and Bicycle Considerations

A bicycle and pedestrian plan for the City of Laurel was completed and adopted by the City of Laurel on February 3, 2004 (Cumin, pers. comm., 2006). Cyclists can currently use the shoulder of the PTW while traveling to and from the City of Laurel via the highway bridge.

US 212 is used for the cycling portion of the annual Peaks to Prairie Triathlon. It is also used by touring cyclists using US 212 to access Yellowstone National Park, as well as for training cyclists.

TABLE 3-8
Low-Income Populations Within and Surrounding the Project Area*

Location	Total Population	Population at or Below Poverty Level	% Poverty
Montana	878,789	128,355	14.6%
Yellowstone County	126,323	14,032	11.1%
Carbon County	9,423	1,089	11.6%
Census Tract 30009000100	2,230	273	12.2%
Census Tract 30111001400	7,174	561	7.8%
Census Tract 30111001600	6,303	373	5.9%
Study Area	15,707	1,207	7.7%

*U.S. Census Bureau, 2000

Riverside Park has an undeveloped trail that travels from the park to the east and crosses private land. The unimproved bicycle/pedestrian trail is one future opportunity recognized by the City of Laurel as part of a trail system that might link to the project area.

The *Yellowstone County and the City of Billings 2003 Growth Policy* (Yellowstone County, 2003) states, in general terms, that a separate bicycle path system is generally "unnecessarily expensive" and existing highways, with inexpensive improvements, should be used to serve as the foundation for a bicycle path system. The development of a bicycle/pedestrian path along the new US 212 route would be a long-term benefit to the area as its population grows and it becomes more of a vacation area and a bedroom community to Laurel and Billings (McGann, pers. comm., 2001).

3.8 Air Quality

The U.S. Environmental Protection Agency (EPA) and state environmental agencies have ambient monitoring to measure air quality in various parts of the country. Areas that do not meet the National Ambient Air Quality Standards (NAAQS) are designated as non-attainment areas. Areas meeting NAAQS may be considered as attainment or unclassified areas. EPA requires each state to develop a State Implementation Plan (SIP). The SIP identifies actions to be taken to preserve existing air quality and to prevent further deterioration of air quality in specifically designated areas where the NAAQS have the potential to be exceeded. The only area in or near the project area that MDEQ and EPA have designated as a non-attainment area is in the City of Laurel. That area did not meet the NAAQS for sulfur dioxide because of emissions from the Cenex petroleum refinery south of Laurel (see Figure 4-1 in *Chapter 4, Environmental Consequences*).

After reviewing MDEQ documents, it was determined that a circular area with a 2.0-km (1.2-mi) radius centered at the Cenex refinery is the non-attainment area for sulfur dioxide. The corridor of the proposed project is adjacent to this non-attainment area. Sulfur dioxide is not considered a major transportation-related criteria pollutant. In addition to the criteria air pollutants for which there are NAAQS, another 21 air pollutants are regulated by EPA as Mobile Source Air Toxics (MSATs), and 6 of those pollutants (benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene) are now designated as priority MSATs. Depending on the type of proposed

project and the potential impacts, MSATs may require analysis in National Environmental Policy Act (NEPA) documents. NAAQS have not been established for the six priority MSATs; however, FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. FHWA has determined that projects where the ultimate traffic volume is less than 150,000 AADT constitute minor widening projects, and the Rockvale to Laurel project falls into this category. A qualitative discussion of MSAT emissions is presented in *Chapter 4, Environmental Consequences* of this document.

3.9 Noise

The following section provides information about:

- Noise Terminology
- Noise Impact Criteria
- Existing Noise Levels

3.9.1 Noise Terminology

Sound, which is quantified using a logarithmic unit called a decibel (dB), is typically modified (weighted) to account for human perception of sound. The A-weighted scale unit, shown as dBA, most closely approximates human hearing. With this scale, zero represents the faintest sound that a person with good hearing can hear.

FHWA and MDT use an equivalent steady-state noise level (L_{eq}) to evaluate noise impacts of transportation projects. The equivalent noise level is similar to an average noise level over a stated time period. FHWA and MDT use a 1-hour L_{eq} value, which is shown as $L_{eq}(h)$.

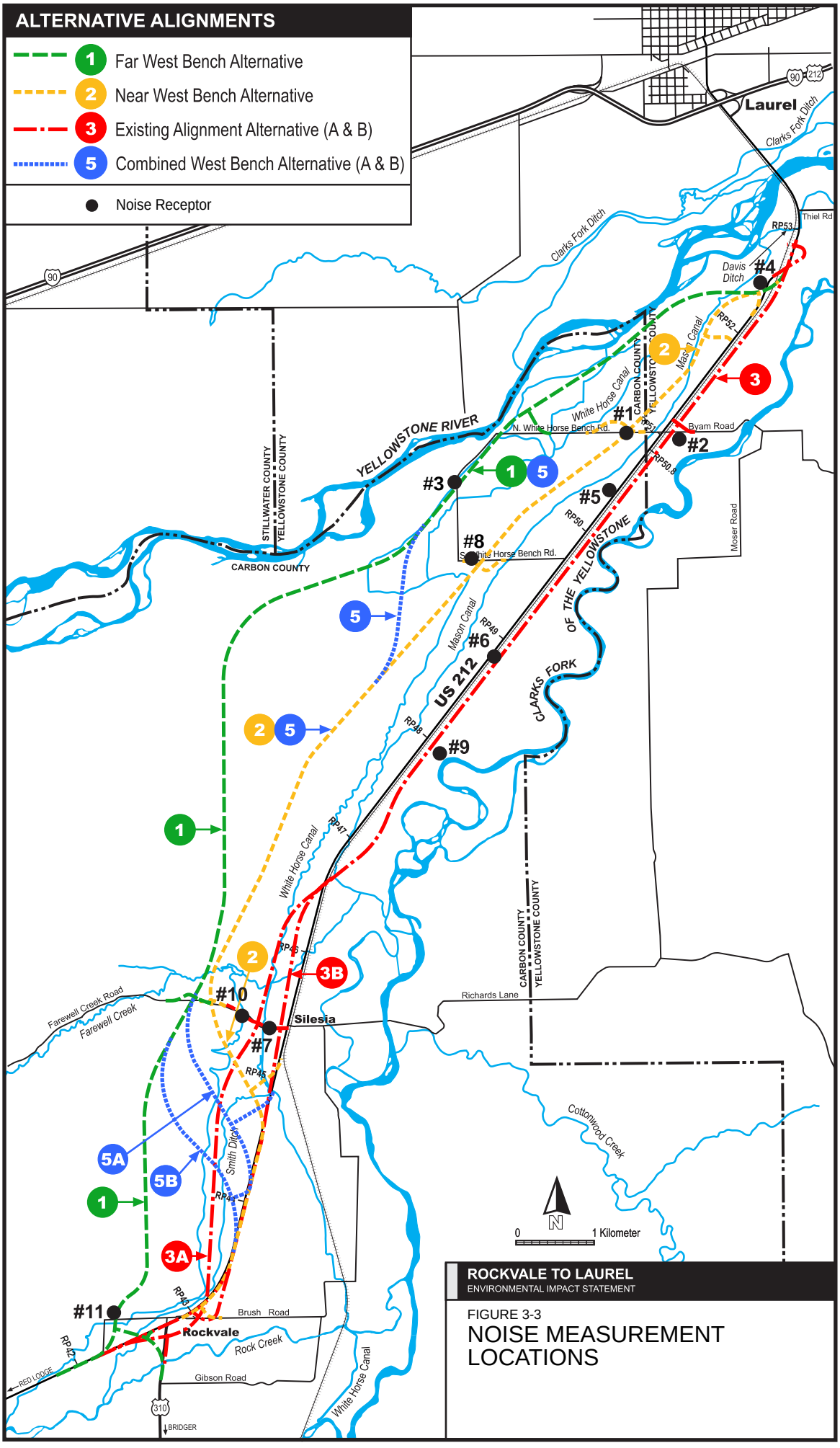
3.9.2 Noise Impact Criteria

Land uses along the study area are residential-, agricultural-, commercial-, and railroad-related. Residential land uses are categorized by FHWA as Category B. The noise impact criterion for residential land uses is 67 dBA $L_{eq}(h)$.

3.9.3 Existing Noise Levels

Eleven ambient noise level measurements were taken in October 2001 to quantify existing background noise levels. The 11 noise measurement locations were distributed throughout the study area along the build alternative routes, as well as along the existing US 212 route (Figure 3-3). For more detailed information about equipment used, weather, and monitoring methodology, the reader should refer to the complete noise report (Big Sky Acoustics, 2002), which is available from MDT.

Table 3-9 displays the ambient noise levels measured in October 2001. The measured $L_{eq}(h)$ data were used to verify that the traffic noise prediction computer model was reasonably accurate for receptors within 150 m (492 ft) of the existing US 212, and to quantify the existing ambient noise levels at representative locations at greater than 150 m from the roadway.


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Noise Receptor
Laurel
Clarks Fork Ditch
Thiel Rd
RP53
Davis Ditch
#4
RP52
Mason Canal
White Horse Canal
CARBON COUNTY
YELLOWSTONE COUNTY
#1
N. White Horse Bench Rd.
Byam Road
#2
RP50.8
YELLOWSTONE RIVER
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
#3
#5
RP50
#8
S. White Horse Bench Rd.
Moser Road
OF THE YELLOWSTONE
CLARKS FORK
US 212
RP49
#6
RP48
#9
RP47
White Horse Canal
RP46
3B
#10
Farewell Creek Road
Farewell Creek
Silesia
#7
RP45
Richards Lane
CARBON COUNTY
YELLOWSTONE COUNTY
Cottonwood Creek
Smith Ditch
5A
5B
RP44
3A
RP43
#11
Brush Road
Rockvale
Rock Creek
RP42
Gibson Road
RED LODGE
310
BRIDGER
White Horse Canal
N
0
1 Kilometer
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 3-3
NOISE MEASUREMENT LOCATIONS
T102005002BOI fig3-3Noise 06-01-2006

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TABLE 3-9
Measured Ambient $L_{eq}(h)$ Noise Levels (October 2001)

Measurement Location	Date	Time (hours)	Description	Approximate Distance and Direction from Existing US 212 Centerline	US 212 Visible	Measured $L_{eq}(h)$	Noise Sources During Measurement
1	10/17/01	1704 – 1804	North side of North White Horse Bench Road, near residences #950 and #1101	463 m (1,520 ft)–West	No	45 dBA	Dominant noise source was traffic on US 212. Other sources included dried corn stalks rustling in the wind, commercial jet overhead, cars on White Horse Bench Road, small aircraft overhead, dogs barking in distance, and children playing at #950.
2	10/18/01	0719 – 0819	East side of Byam Road, near residences #251 and #259	152 m (500 ft)–East	Yes	56 dBA	Dominant noise source was traffic on US 212. Other sources included cars on Byam Road, train in distance (not visible), commercial jet in distance, voices at #251, dog barking nearby, and birds chirping.
3	10/18/01	0834 – 0934	North White Horse Bench Road, near residences #3300 and #3355	1,676 m (5,500 ft)–West	No	53 dBA	Dominant noise sources were leaves/trees blowing in the wind and a tractor plowing the field at #3355, with some influence from traffic on US 212. Other sources included small aircraft nearby, commercial jet overhead, and birds chirping.
4	10/18/01	1040 – 1140	Existing US 212, residence #1906 south of railroad bridge	20 m (65 ft)–East	Partially	67 dBA	Dominant noise source was traffic on US 212. Other sources included leaves/trees blowing in wind, trains in distance, car horn, and small aircraft.
5	10/18/01	1317 – 1417	South side of Beartooth View Drive, near residence #3450	29 m (96 ft)–West	Yes	66 dBA	Dominant noise source was traffic on US 212. Other sources included cars on Beartooth View Drive.
6	10/18/01	1508 – 1608	South side of Evergreen Drive, entrance to subdivision	79 m (260 ft)–East	Yes	60 dBA	Dominant noise source was traffic on US 212. Other sources included leaves/trees blowing in wind and cars/trucks on Evergreen Drive.
7	10/18/01	1654 – 1754	Farewell Road, 23 m (75 ft) west of Near West Alternative	157 m (515 ft)–West	Yes	58 dBA	Dominant noise sources were traffic on US 212 and a visible train east of the highway. Other sources included leaves/trees blowing in wind, cars on dirt road, dogs barking in distance, birds chirping, commercial jet overhead, and small plane overhead.
8	10/19/01	0712 - 0812	North side of South White Horse Bench Road, near residence #2220	829 m (2,720 ft)–West	No	47 dBA	Dominant noise sources were a combination of distant and near sources that included traffic on US 212, train in distance, horses south of road, cars on White Horse Bench Road, birds chirping, and commercial jet overhead.

TABLE 3-9
Measured Ambient $L_{eq}(h)$ Noise Levels (October 2001)

Measurement Location	Date	Time (hours)	Description	Approximate Distance and Direction from Existing US 212 Centerline	US 212 Visible	Measured $L_{eq}(h)$	Noise Sources During Measurement
9	10/19/01	0828 – 0928	Private Road, east of US 212 at RP 48	229 m (750 ft)–East	Yes	53 dBA	Dominant noise source was traffic on US 212. Other sources included birds chirping and a commercial jet nearby.
10	10/19/01	1001 – 1101	Farewell Road, west of residences	524 m (1,720 ft)–West	Partially	48 dBA	Dominant noise source was traffic on US 212. Other sources included horses in distance, train in distance, and cars on Farewell Road.
11	10/19/01	1139 – 1239	End of Rockvale Road, near residence #205	354 m (1,160 ft)–West	Partially	42 dBA	Dominant noise source was traffic on US 212. Other sources included sprinkler at residences, commercial jet in distance, dog barking in distance, cars at residences, and train in distance.

3.10 Water Flow and Quality

The water flow and quality section provides information about:

- Surface Water Flow Rates
- Total Maximum Daily Loads
- 303(d) Listed Water Bodies
- Water Quality Standards
- Source Water Protection
- Domestic Wells
- Groundwater Quality

3.10.1 Surface Water Flow Rates

The gauge station on the Clarks Fork Yellowstone River nearest the project area is located in Edgar, Montana. This gauge station, which is about 6 km (4 mi) south of Rockvale, is approximately 24 km (15 mi) upstream (south) of the mouth of the river. The average annual flow of the Clarks Fork Yellowstone River at Edgar, Montana, for water years 1922 through 2007 was 29 cubic meters per second (cms) (1,024 cubic feet per second [cfs]) (U.S. Geological Survey [USGS], 2008).

The gauge station on the Yellowstone River nearest the project area is located in Billings, Montana. This gauge station is located approximately 26 km (16 mi) downstream (east) of where US 212 crosses the Yellowstone River (at the north end of the project area). The average annual flow of the Yellowstone River at Billings, Montana, for water years 1929 through 2007 was 194 cms (6,866 cfs) (USGS, 2008).

3.10.2 Total Maximum Daily Loads

If a stream or other water body is polluted and can no longer support its beneficial uses, Section 303(d) of the CWA (33 U.S. Code [USC] 1313) requires the state to list the reach as a priority for restoration. An assessment is performed that identifies the amount of pollution a water body can receive without violating state water quality standards. This assessment report is called a Total Maximum Daily Load (TMDL). In other words, the TMDL represents how much "pollutant load" a water body can assimilate. Within a TMDL assessment, threatened water bodies are those that do support beneficial uses, but are in a downward trend, and impaired water bodies are those that do not support beneficial uses. Surface water bodies in the project area have not been assigned TMDLs.

3.10.3 303(d) Listed Water Bodies

The *2006 Montana Integrated 305(b)/303(d) Water Quality Report* (formerly referred to as the 303[d] list) (MDEQ, 2006) describes water-quality-limited water bodies within the US 212 project area (Table 3-10).

TABLE 3-10
Water Bodies Along US 212 Corridor on the *2006 Montana Integrated 305(b)/303(d) Water Quality Report* (MDEQ, 2006)

Water Body	Estimated Length	Impaired Beneficial Uses	Use Support Level	Probable Cause	Probable Source
Clarks Fork Yellowstone River	66.5 km (41.3 mi)	Aquatic Life Support Cold Water Fishery Drinking Water Swimming Agriculture Industrial Water	Partially Supporting	Flow Alteration Nutrients Suspended Solids Metals Algal Growth/ Chlorophyll a Temperature	Agriculture Hydro-modification Streambank Modification Flow Regulation/ Modification Source of Chlorophyll a unknown

A portion of the Clarks Fork Yellowstone River, within the project area, is listed for partially supporting aquatic life, cold water fishery, swimming, drinking water, agriculture uses, and industrial water supply beneficial uses (MDEQ, 2006). The TMDL for the Clarks Fork Yellowstone River is proposed for the 2008-2012 planning cycle by MDEQ (MDEQ, 2006).

3.10.4 Water Quality Standards

According to the Administrative Rules of Montana (ARM) 17.30.611, the Yellowstone River and Rock Creek have B-1 water use classifications and the Clarks Fork Yellowstone River has a B-2 water use classification. Water bodies designated as B-1 and B-2 are suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

Water quality standards for B-1 and B-2 water bodies do not allow violations (outside a set range) of fecal coliform, dissolved oxygen, pH, turbidity, and temperature. In addition, concentrations of sediment, settleable solids, oils, or floating solids cannot be increased above naturally occurring levels. The B-1 and B-2 water quality standards differ from one another in terms of allowable limits for pH variation and turbidity increase, with the B-1 classification being more restrictive than the B-2 classification (ARM 17.30.623 and 624).

The USGS has compiled an extensive amount of water quality data for water bodies in Montana (http://nwis.waterdata.usgs.gov/mt/nwis/qwdata/). The following stations have relevant water quality data for water bodies associated with the US 212 reconstruction corridor: Yellowstone River near Livingston, Yellowstone River at Billings, Clarks Fork Yellowstone River at Edgar, White Horse Canal near Silesia, and Rock Creek near Red Lodge. The data from these sites were included in the development of the *2006 Montana Integrated 305(b)/303(d) Water Quality Report* (MDEQ, 2006). Table 3-10 provides information about the impaired beneficial uses of the Clarks Fork Yellowstone River.

3.10.5 Source Water Protection

The Source Water Protection Program (originally known as the Wellhead Protection Program) applies to public water supplies in Montana. The program is a result of

modifications required to meet the 1996 amendments to the Federal Safe Drinking Water Act (42 USC 300f et seq.). As part of the program requirements, public water supplies must prepare and submit source water protection plans to MDEQ for review and certification. The plans submitted should include identification of the source of water used by the public water supply, origins of regulated contaminants within the source water protection area, and assessment of the susceptibility of the public water supply to identified contaminants.

The US 212 corridor contains six public water supplies (Table 3-11) (Montana Natural Resource Information System [NRIS], 2006a). Included in the list is the City of Laurel's surface water intake, which is located on the Yellowstone River adjacent to the US 212 bridge crossing.

TABLE 3-11
Public Water Supplies Located within the US 212 Project Corridor

Name	PWSID[a]	Source Name	Source Type	Population
City of Laurel	00270	Yellowstone River	Surface Water	6,200
The River's Edge	01756	Well	Groundwater	100
El Rancho Inn	00742	Spring	Groundwater	65
Rockvale Travel Plaza	03660	Well	Groundwater	225
Quick Stop Drive In	02025	Well	Groundwater	250
Fort Rockvale Restaurant and Lounge	00741	Well	Groundwater	70

[a]Public Water Supply Identifier used by MDEQ.
Source: Montana NRIS, 2006a.

As of June 2006, the Fort Rockvale Restaurant and Lounge is the only public water supply in the corridor that has an approved Source Water Protection Plan. Fort Rockvale Restaurant and Lounge is located west of the US 212 Rockvale turnoff in Carbon County (Figure 3-4). For purposes of source water protection, a 305-m (1,000-ft)-radius inventory region has been delineated around the wellhead. The inventory documents water sources and possible contaminants that could flow to the well over a period of years and how to protect the well from contamination. Land use in the vicinity of the wellhead is primarily agricultural irrigated and dryland crop and unsewered commercial. An irrigation ditch (Smith Ditch), which is located a few feet away from the well, is a possible conveyance for pollutants entering the well. The existing right-of-way for US 212 is within 305 m (1,000 ft) of the wellhead.

3.10.6 Domestic Wells

Numerous domestic water wells are located within the US 212 corridor between Rockvale and Laurel. According to the Montana Bureau of Mines and Geology statistical maps, there are between 11 and 100 wells per square mile along the corridor (http://maps2.nris.state.mt.us/mapper/).

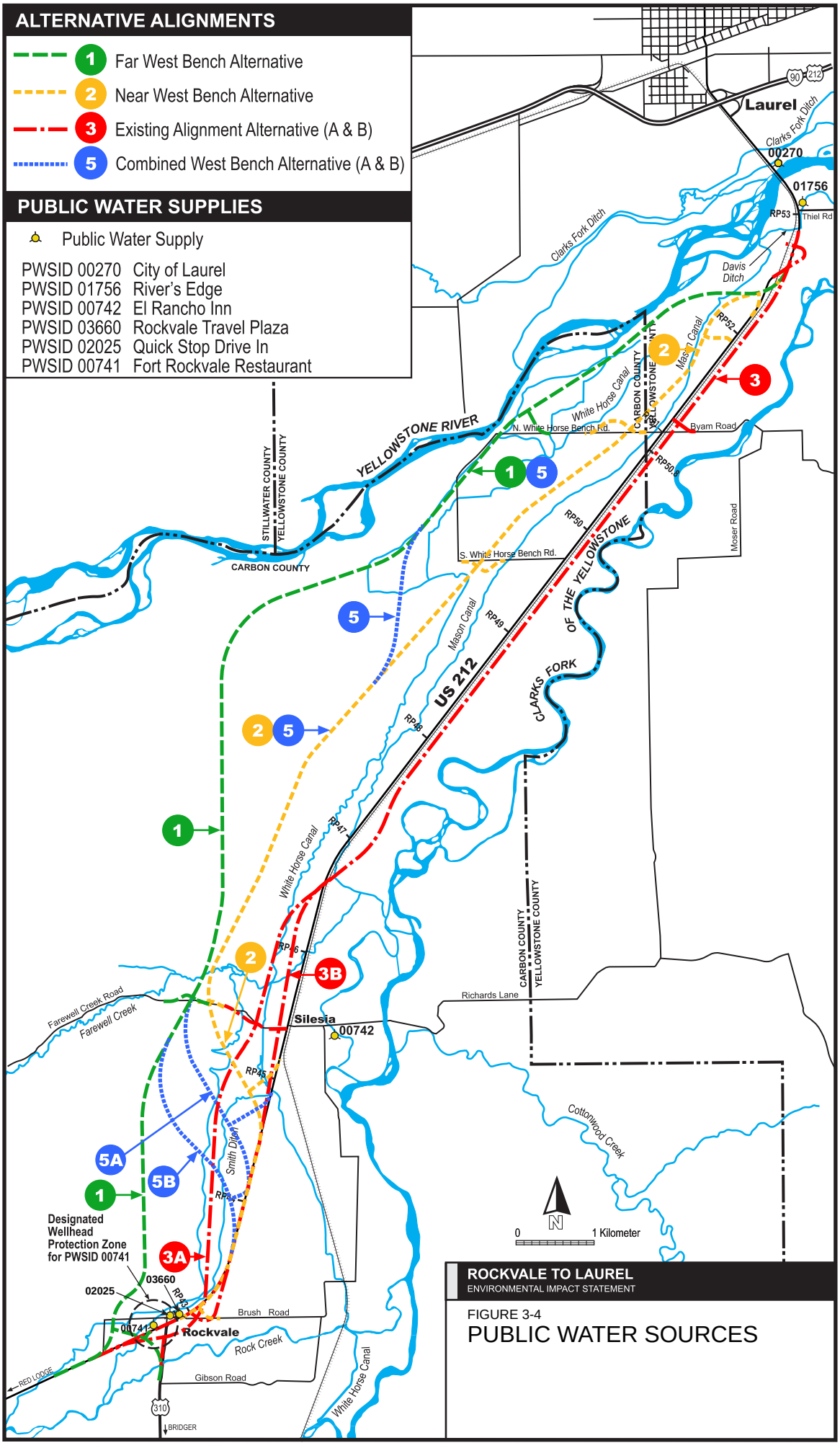
The majority of domestic wells in the US 212 corridor are shallow wells completed in alluvial sediments with an average depth of 11 m (35 ft). According to the Montana Bureau of Mines and Geology statistical maps, this shallow alluvial aquifer is designated as a Class I aquifer. The quality of Class I groundwater must be maintained so that the water is suitable for the following beneficial uses with little or no treatment: public and private water supplies; culinary and food processing purposes; irrigation; drinking water for livestock and wildlife; and commercial and industrial purposes. Furthermore, the water quality must be maintained so that the human health standards contained in the Montana Numeric Water Quality Standards, WQB-7, are not violated (MDEQ, 2006).

3.10.7 Groundwater

Perched, unconfined groundwater appears to be present in the alluvial terrace gravels that lie above the river floodplain. The perched aquifer is bounded below by low-permeability fine-grained shale (Colorado Shales). The water does not readily percolate into the underlying shale, thus is perched in the gravelly units. The depth to groundwater ranges from 15 m to less than 1.5 m (50 ft to less than 5 ft) below ground surface depending on the elevation of the ground surface above the water table. In areas where the contact between the terrace gravels and bedrock is exposed in slopes, the perched water discharges as springs in the face of the slopes. This is especially evident in the north-facing bluffs that mark the southern boundary of the Yellowstone River floodplain and in the south-facing hillsides that mark the northern boundary of the Clarks Fork Yellowstone River floodplain. The perched water also discharges where the PTW crosses under the railroad (that is, at the existing railroad underpass).

The primary recharge sources for the perched groundwater are probably precipitation, canal leakage, and excess irrigation water percolating downward through the gravels to the contact with the underlying fine-grained shale. Other potential, but undocumented, sources for the perched groundwater are seepages from upland streams west of the project area, such as Bolton and Rock creeks. However, discussions with John Wheaton, hydrogeologist with the Montana Bureau of Mines and Geology (pers. comm., 2008), suggest that these upland surface waters are unlikely recharge sources for the subject alluvial aquifer because of local hydraulic boundary conditions and the predominance of the low-permeable Colorado Shales to the west of the project area.

The perched, unconfined groundwater in the alluvial terrace gravels is not a regional aquifer. For the most part, it is locally controlled by irrigation seepage, canal leakage, and precipitation. Below the perched aquifer is the Colorado Shale, which does not appear to be a viable source of groundwater. The next deeper aquifer is the Pryor Conglomerate, which is approximately 457 m (1,500 ft) below ground surface.


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
PUBLIC WATER SUPPLIES
Public Water Supply
PWSID 00270 City of Laurel
PWSID 01756 River's Edge
PWSID 00742 El Rancho Inn
PWSID 03660 Rockvale Travel Plaza
PWSID 02025 Quick Stop Drive In
PWSID 00741 Fort Rockvale Restaurant
Laurel
00270
01756
Clarks Fork Ditch
Davis Ditch
Thiel Rd
RP53
RP52
RP50.8
RP50
RP49
RP48
RP47
RP46
RP45
RP44
RP43
Mason Canal
White Horse Canal
CARBON COUNTY
YELLOWSTONE COUNTY
STILLWATER COUNTY
YELLOWSTONE RIVER
N. White Horse Bench Rd.
S. White Horse Bench Rd.
Byam Road
Moser Road
US 212
CLARKS FORK OF THE YELLOWSTONE
Silesia
00742
Richards Lane
Farewell Creek Road
Farewell Creek
Cottonwood Creek
Smith Ditch
Designated Wellhead Protection Zone for PWSID 00741
03660
02025
00741
Rockvale
Brush Road
Rock Creek
Gibson Road
RED LODGE
BRIDGER
310
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 3-4
PUBLIC WATER SOURCES
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3.10.7.1 Groundwater Quality

The shallow, alluvial aquifer is characterized by unconsolidated clays, silts, sands, and gravels. The distribution of wells within the project area ranges between 1 and 10 wells per square mile that have waters described as Class I and Class II for conductivity. Groundwater in Class I could be used for public and private water supplies, while Class II is marginally suitable for public and private water supplies, but is acceptable for agricultural and stock supply (Montana NRIS, 2006b).

3.11 Wetlands

Activities in wetlands are governed by CWA Section 404, E.O. 11990 (*Protection of Wetlands*), and E.O. 11988 (*Floodplain Management*). The U.S. Army Corps of Engineers (COE) is the wetland regulatory agency in Montana. COE and EPA define wetlands as, "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (COE, 2006). Wetlands meeting this definition (wetland soils, wetland vegetation, and wetland hydrology) are typically considered jurisdictional wetlands by the COE. Rules concerning which wetlands are jurisdictional periodically change based on judicial review; therefore, coordination will continue with COE to ensure wetlands identified as jurisdictional in this document continue to be classified as jurisdictional. A COE permit is required for dredge and fill activities in jurisdictional wetlands.

This wetlands section provides information about the delineation of wetlands and wetland and riparian plant communities.

3.11.1 Delineation of Wetlands

Jurisdictional and non-jurisdictional wetlands within 30.5 m (100 ft) of proposed construction limits along the build alternatives were initially located, mapped, and evaluated using MDT's Montana Wetland Assessment Method (MWAM). MDT and MFWP developed MWAM, which is a combination of several systems (Berglund, 1999). An MWAM functional value rating was calculated for each wetland, which was used to assign an Overall Analysis Rating (Categories I through IV) to each wetland (Table E-2 in *Appendix E*). The *Operating Procedures for the Conservation of Wetland Resources Associated with Transportation Projects in the State of Montana* (MDT, 1995) was followed during wetland assessment activities.

For the initial analysis, no formal wetland delineations to determine jurisdictional status using the *Wetland Delineation Manual* (COE, 1987) were conducted for the No Build Alternative and the build alternatives. However, COE wetland determination forms were completed for each wetland within the areas potentially affected by the proposed project. The expected jurisdictional status of each wetland and riparian area was estimated and used in assessing the impacts of the build alternatives.

After MDT identified Alternative 5B as its Preferred Alternative, a formal wetland delineation using the *Wetland Delineation Manual* (COE, 1987) was conducted for Alternative 5B's potential impact area. As part of the permitting process, COE will verify this wetland delineation.

3.11.2 Wetland and Riparian Plant Communities

The existing route of US 212 from Rockvale to Laurel is located entirely on the floodplain of the Clarks Fork Yellowstone River. The quantity and quality of wetland and riparian communities located on the floodplain have been substantially altered by previous highway and railroad construction, agricultural conversion, drainage, and irrigation practices.

The *Biological Resources Report* (CH2M HILL, 2003) presents the results of the wetland analysis. These results are partially summarized in this Final EIS. Recent COE guidance identifies irrigation canals with a connection to navigable waters as tributaries to those waters, which are therefore under the jurisdiction of CWA Section 404. Based on this recent guidance, the initial wetland analysis has been modified to account for new jurisdictional wetland areas. Twenty-five wetland areas were identified, of which 22 were estimated to be jurisdictional (Table E-2 in *Appendix E*). The total area of wetlands in the project area is 23.9 ha (59.0 ac). Of the total area, jurisdictional wetlands are 23.8 ha (59.0 ac) and non-jurisdictional wetlands are 0.1 ha (0.5 ac). Wetland locations are shown on Figure 3-5 and detailed in *Appendix E*, Table E-2. Recent court actions may change the jurisdictional status of some of the wetlands identified with this project. As a result, MDT would continue discussions and coordination with COE throughout the development of the proposed project to ensure proper identification of jurisdictional wetlands.

Wetland and riparian communities that currently exist along the proposed US 212 alignments are supported by six apparent primary water sources that will affect their status with regard to COE jurisdiction under CWA Section 404. Water sources and the likely jurisdictional status of associated wetland types in the project area (to be verified by COE) include the following:

- **Oxbows of the Clarks Fork Yellowstone River.** Remnant emergent and scrub-shrub wetlands and riparian communities located in old oxbows of the Clarks Fork Yellowstone River that are supported by seasonal high surface and groundwater. These are likely jurisdictional wetlands.
- **Ditches.** Ditch wetland and riparian areas adjacent to US 212 and the railroad tracks are supported by surrounding irrigation, drainage, and seasonally high groundwater. The jurisdictional wetland status would vary depending on location, prior conversion status, and hydrologic connections to the Clarks Fork Yellowstone River or to canals that are tributary to the Clarks Fork Yellowstone River or Rock Creek.
- **Irrigation Water.** Irrigation-supported wetlands supported by direct runoff from adjacent irrigated croplands and pastures and locally high water tables supported by seasonal irrigation. These are likely jurisdictional wetlands if the irrigation water comes from canals that are tributary to the Clarks Fork Yellowstone River or Rock Creek.
- **Canals.** Wetland and riparian areas supported by leaking canals. Those wetlands are likely jurisdictional if the canals are tributary to the Clarks Fork Yellowstone River or Rock Creek.

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ALTERNATIVE ALIGNMENTS

- 1 Far West Bench Alternative
- 2 Near West Bench Alternative
- 3 Near Existing Alignment Alternative (A & B)
- 5 Combined West Bench Alternative (A & B)

WL16
WL14
WL13
WL23
WL15
WL4
WL1
SPRING
WL12
WM-H
WL11
WL10
WL9
WM-G
WL8
WM-F
WM-E
WM-D
WM-C
WL22
WL2
WM-B
WL17
WL18
WL19
WL20
WL21
WL5
WL6
WL7
WM-A
WL25
WL24
WL3
MAN-MADE LAKE
NATURAL

LEGEND:

Wetlands
(Sites WL1 through WL25)

Potential Wetland Mitigation
(Sites WM-A through WM-H)

N

0 200 400 600 800 METERS

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 3-5

WETLAND AND POTENTIAL WETLAND MITIGATION SITES ALONG US 212 FROM ROCKVALE TO LAUREL

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- **Natural Springs.** Wetland and riparian areas that are supported by natural springs. These are likely jurisdictional wetlands.
- **Rock Creek and Farewell Creek.** Wetland and riparian types that are supported by flows from Rock Creek and Farewell Creek.

3.12 Water Bodies and Aquatic Resources

3.12.1 Water Bodies

The project area contains both natural and constructed water bodies. The proposed US 212 realignments (build alternatives) between Rockvale and Laurel would traverse ditches, canals, and two creeks (Figure 3-6). From south to north, these water bodies are Rock Creek, Dutton Canal, Smith Ditch, Free Silver Ditch, Farewell Creek, White Horse Canal, Mason Canal, and Davis Ditch. Other water bodies that are not directly crossed by the US 212 project, but are adjacent to the project area, include the Yellowstone River and Clarks Fork Yellowstone River. The Smith Ditch, White Horse Canal, Mason Canal, and Davis Ditch are diverted from the Yellowstone River. Free Silver Ditch and Dutton Canal are diverted from the Clarks Fork Yellowstone River. Farewell Creek and Rock Creek are tributaries of the Clarks Fork Yellowstone River. The Clarks Fork Yellowstone River enters the Yellowstone River approximately 3.2 km (2.0 mi) downstream (east) of the US 212 Yellowstone River Bridge.

Current potential impacts to water bodies from highway operations include highway runoff containing residuals from operating automobiles and trucks and, during the winter, runoff containing de-icing salts.

3.12.2 Aquatic Resources

Perennial natural water bodies having aquatic resources in the area of the build alternatives include Rock Creek (affected reach and other reaches), the Clarks Fork Yellowstone River, and the Yellowstone River. The affected reach of Rock Creek (that is, from the US 310 bridge at Rockvale downstream to its confluence with the Yellowstone River) is addressed in this analysis. Since the other perennial natural water bodies are not immediately adjacent to the build alternatives and would not be affected by the proposed project, they were not investigated further.

Data on Rock Creek were collected through a site visit and from the Internet-based Montana NRIS (2001b). The current and proposed crossing of Rock Creek by US 310 is approximately 4.8 river km (3 river mi) upstream (west) of this drainage's confluence with the Clarks Fork Yellowstone River. Observations of Rock Creek at the US 310 bridge on September 25, 2001, indicated creek flow was about 0.11 cms (3.9 cfs), water velocity was 0.3 to 0.6 m (1 to 2 ft) per second, and the creek width varied from 9 to 12 m (29.5 to 39.4 ft).

Instream habitat immediately downstream of the US 310 bridge consisted of two pools separated by a short, quick drop in streambed elevation. Instream habitat immediately upstream of the bridge consisted of a pool/riffle complex. Streambed substrate above and

below the bridge consisted primarily of gravels and cobbles about 5 to 15 cm (2 to 5.9 in) in diameter. Substrate appeared to be relatively free of sediment and generally not embedded. A heavy growth of algae on portions of the stream bottom below the bridge indicated nutrient enrichment and adequate sunlight.

The stream banks appeared relatively stable with good vegetative cover, although some riprap was present—probably to guard against the erosive effects of high spring flows. Evidence of bank undercutting was present on the outside bend of the creek below the bridge. A local farmer said that fishing was poor here because of the low flows and warm water, but that it might pick up a bit after the irrigation diversions stop. Broken fishing lines hanging from a wire crossing the creek just below the bridge indicate past angler activity.

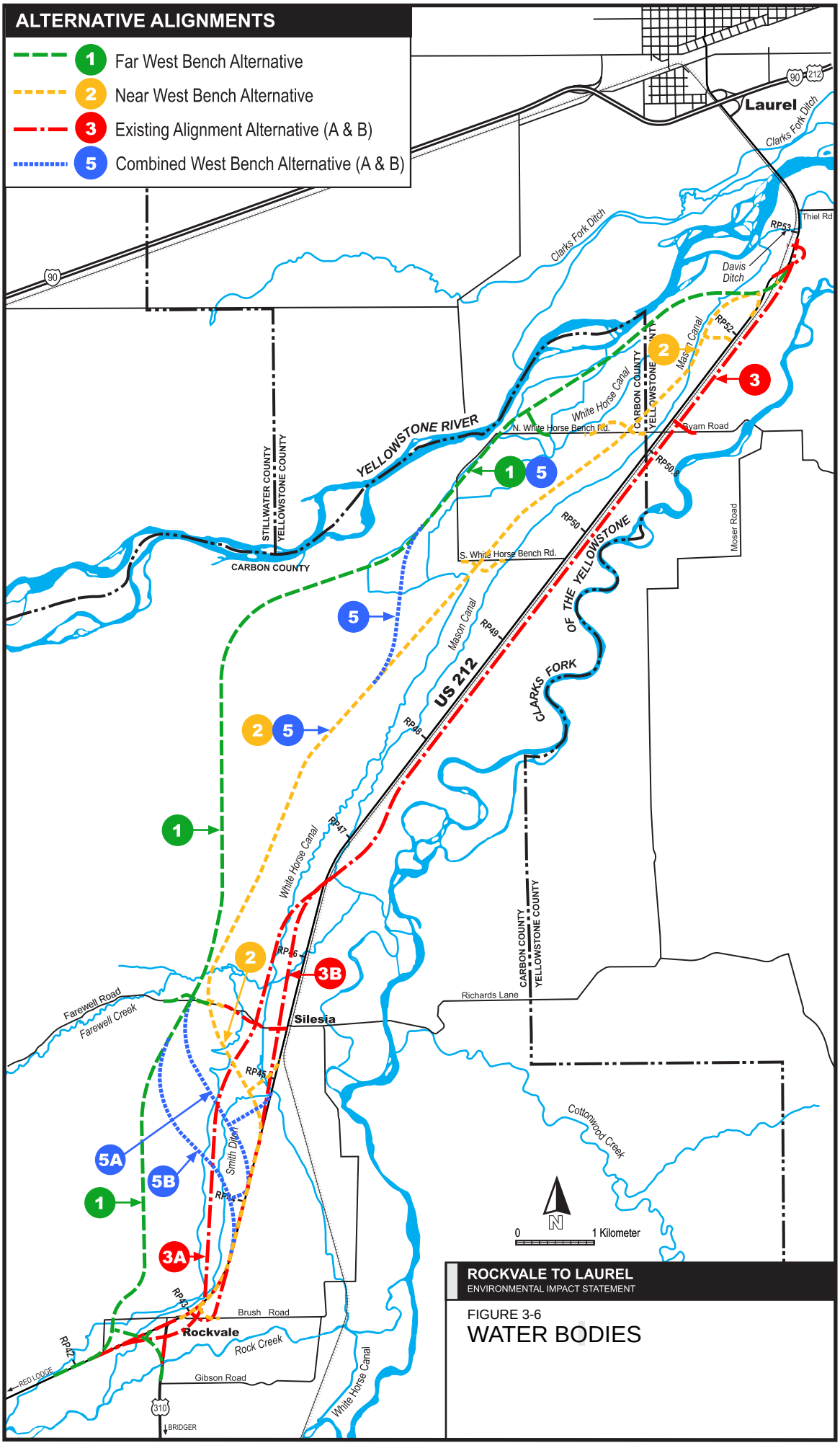
Potential fisheries habitat in Rock Creek at the US 310 crossing includes suitable-sized spawning gravels for brown trout (*Salmo trutta*). However, creek flows and water depths in much of the riffles during the site visit did not appear adequate for successful spawning and overwinter egg incubation by this fall-spawning species. The riffles would, however, provide habitat for numerous species of aquatic insects, such as stoneflies (*Plecoptera),* mayflies (*Ephemeroptera*), caddisflies (*Trichoptera*), and true flies (*Diptera*). These insects are important in the diets of juvenile and adult trout (*Salvelinus*), whitefish (*Prosopium*), and other fish species. The pools may provide the most valuable fisheries habitat near the bridge, especially for use as deeper-water cover and overwintering habitat for various life stages of brown trout and other fish species (described further in text that follows). Increased flows later in the fall following the irrigation season may improve the suitability of potential spawning/incubation habitat and overwintering habitat for brown trout near the bridge.

Rock Creek, at about 1.6 km (1 mi) downstream of the US 310 crossing is braided, with habitat consisting primarily of pool/riffle complexes. The potential exists for much better fisheries habitat at this location at higher flows, the same as was observed upstream at the US 310 crossing.

The downstream-most 29 km (18 mi) of Rock Creek (from its mouth upstream to its confluence with Red Lodge Creek), which includes the US 310 crossing, are classified by the State of Montana as having a “moderate” fishery value and “fair” aesthetics. The lower 66 km (41 mi) of Rock Creek have been identified by MFWP fisheries biologists as a “chronic” dewatering concern area, indicating that dewatering is a significant problem.

Eight species of fish have been reported from the lower 29 km (18 mi) of Rock Creek. They include four species of salmonids—brown trout, rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and mountain whitefish (*Prosopium williamsoni*); two species of suckers—white sucker (*Catostomus commersoni*) and mountain sucker (*Catostomus platyrhynchus*); goldeye (*Hiodon alasoides*); and longnose dace (*Rhinichthys cataractae*). Fish species abundance ranges from abundant (longnose dace, white sucker) to common (brown trout, mountain whitefish) to uncommon (mountain sucker) to rare (brook trout, rainbow trout, and goldeye).

Based on the amount of angler effort expended, the 85-km (52.8-mi) reach of Rock Creek (from its mouth upstream) was the 51st most popular fishing destination in Montana in 2003.


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Laurel
Clarks Fork Ditch
Thiel Rd
Davis Ditch
Mason Canal
White Horse Canal
N. White Horse Bench Rd.
Ryam Road
YELLOWSTONE RIVER
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
S. White Horse Bench Rd.
Moser Road
OF THE YELLOWSTONE
CLARKS FORK
US 212
RP53
RP52
RP50.8
RP50
RP49
RP48
RP47
RP46
RP45
RP44
RP43
RP42
Farewell Road
Farewell Creek
Silesia
Richards Lane
Cottonwood Creek
Smith Ditch
Brush Road
Rockvale
Rock Creek
Gibson Road
RED LODGE
BRIDGER
310
90
212
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 3-6
WATER BODIES
T102005002BOI Fig3-8waterbodies 07-16-2006

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Chronic dewatering of Rock Creek currently occurring near the US 310 bridge crossing would be expected to continue in the future and would have the same limiting effects on aquatic habitat as at present. Aquatic resources are not known to be affected by existing highway operations.

3.13 Vegetation

The vegetation section provides information about plant communities and noxious weeds and other introduced plant species.

3.13.1 Plant Communities

Most native plant communities in the project area have been affected by conversion of the land to dryland agriculture or irrigated pasture; the construction of irrigation ditches, home sites, or businesses; or the development of roadway and railroad rights-of-way. Agricultural uses include irrigated and dry pasture, alfalfa, winter wheat, and fallow land.

The potential natural upland plant community for the proposed project area is blue grama-needlegrass-wheatgrass, of which remnants remain as pasture (Küchler, 1964). Existing native species are mainly blue grama (*Bouteloua gracilis*), needle-and-thread (*Stipa comata*), sego lily (*Calochortus nuttallii*), silver sage (*Artemisia ludoviciana*), soapweed (*Yucca glauca*), wax currant (*Ribes cereum*), and prickly pear cactus (*Opuntia polyacantha*), with some areas of big sagebrush (*Artemisia tridentata*) and bluebunch wheatgrass (*Agropyron spicatum*). Non-native introduced species account for less than 50 percent of the species in upland grasslands. These mixed stands of native grasses and forbs with non-native species are referred to as Native/Non-Native Vegetated Uplands.

Riparian communities consisting of chokecherry (*Prunus virginiana*), cottonwood (*Populus trichocarpa*), wild rose (*Rosa* species [sp.]), box elder (*Acer negundo*), snowberry (*Symphoricarpos albus*), skunkbush sumac (*Rhus aromatica*), and plains cottonwood (*Populus deltoides* var. *occidentalis*) are found in draws and other topographic depressions. Other native species found on many sites adjacent to wetland areas include milkweed (*Asclepias speciosa*), wild rose, russet buffalo-berry (*Shepherdia canadensis*), snowberry, wild licorice (*Glycyrrhiza lepidota*), hemp dogbane (*Apocynum cannabinum*), foxtail barley (*Hordeum jubatum*), smooth scouringrush (*Equisetum laevigatum*), and sandbar willow (*Salix exigua*). Russian olive (*Elaeagnus angustifolia*) was noted in a few areas. As with uplands, some riparian areas are heavily grazed, which removes understory vegetation and prevents or restricts regeneration of riparian vegetation.

3.13.2 Noxious Weeds and Other Introduced Plant Species

The Montana County Noxious Weed Control Law (MCA 7-22-2101 et seq.) was established in 1948 to protect Montana lands from invasion by exotic plants that may render the land unfit for beneficial uses or that may harm natural plant communities. This law only pertains

to a list of legally defined noxious weeds and not to all weeds (that is, only noxious weeds must be controlled by law).

Weeds are capable of adversely affecting native plant communities and wildlife habitat and of impeding the success of mitigation measures and reclamation of sites disturbed during construction. Noxious weeds can spread rapidly and render land unfit or greatly limit beneficial uses of the land. E.O. 13112 (*Invasive Species*) was signed in 1999 to authorize federal actions to help prevent the establishment and spread of invasive species.

There are three categories of noxious weeds in Montana:

- **Category 1.** Category 1 noxious weeds in Montana are defined as weeds that are currently established and generally widespread in many counties. Management includes awareness and education, containment and suppression of existing infestations, and prevention of new infestations. Category 1 weeds that occur in Carbon County from the county line to Rockvale include Canada thistle (*Cirsium arvense*), spotted knapweed (*Centaurea maculosa*), and field bindweed (*Convolvulus arvensis*) (Weber, pers. comm., 2002). Category 1 weeds that occasionally occur in Yellowstone County within the proposed project's boundary are leafy spurge (*Euphorbia esula*), whitetop (*Cardaria draba*), and spotted knapweed (Bockness, pers. comm., 2002).
- **Category 2.** Category 2 noxious weeds in Montana are those weeds that have recently been introduced into the state or are rapidly spreading from their current infestation sites. Management includes awareness and education, monitoring and containment of known infestations, and eradication to the extent practicable. In Carbon County, starting at the Yellowstone County Line and going southwest, purple loosestrife (*Lythrum salicaria*) is found in a swampy irrigation drainage ditch on both sides of the present highway (Weber, pers. comm., 2002).
- **Category 3.** Category 3 noxious weeds have either not been detected in Montana or may be found only in small, scattered, localized infestations. Management criteria include awareness and education, early detection, and immediate action to eradicate infestations. These weeds are known pests in nearby states and are capable of rapid spread, rendering land unfit for beneficial uses. Category 3 noxious weeds include rush skeletonweed (*Chondrilla juncea*).

Non-native species noted on a few sites within the proposed project's rights-of-way include bittersweet nightshade (*Solanum dulcamara*), reed canarygrass (*Phalaris arundinacea*), clasping leaf peppergrass (*Lepidium perfoliatum*), smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), alfalfa (*Medicago sativa*), Canada thistle, field bindweed, timothy (*Phleum pratense*), bulbous bluegrass (*Poa bulbosa*), downy brome (*Bromus tectorum*), dog fennel (*Anthemis cotula*), and field pennycress (*Thlaspi arvense*). Of these species, Canada thistle and field bindweed are legally listed as noxious for Montana and must be controlled by law, but the others can be detrimental to native vegetation.

Other non-native plant species in the project area of special concern to the Carbon County Weed Board are common mullein (*Verbascum thapsus*), perennial sowthistle (*Sonchus arvensis*), and night-flowering catchfly (*Silene noctiflora*) (Weber, pers. comm., 2002). The

Carbon County Weed Board is also concerned about the spread of two species of native plants: showy milkweed (*Asclepias speciosa*) and wild licorice (Weber, pers. comm., 2002).

3.14 Wildlife Resources

Information concerning the occurrence of wildlife and wildlife habitat along the proposed alignments was collected during three site visits (May, June, and September 2001), from available literature, and during discussions with MFWP wildlife biologists. Wildlife habitat along the alignments has been substantially altered by past and ongoing human activities. A few areas of native vegetation persist, although livestock grazing, which appears to be intensive, has reduced habitat quality in the project area for many years. *Section 3.13, Vegetation,* and *Section 3.11, Wetlands,* describe the plant communities (habitat) occurring in the project area.

The wildlife resources section provides information about:

- Mammals
- Birds, Including Migratory Birds
- Reptiles and Amphibians

3.14.1 Mammals

Big game species that occur in the project area include white-tailed deer (*Odocoileus virginianus*), mule deer (*O. hemionus*), and an occasional moose (*Alces alces*). White-tailed deer occupy the Clarks Fork Yellowstone River valley bottom year-round (Eustace, pers. comm., 2001). Mule deer move from the surrounding uplands into the river valley to forage on green vegetation in pastures and irrigated fields year-round. Deer do not concentrate in high numbers in the project area, particular migration routes have not been identified, and big-game winter range has not been classified (Eustace, pers. comm., 2001). Moose occasionally move down the Clarks Fork Yellowstone River or the Yellowstone River into the project area, but are not present regularly.

Other mammals present include coyote (*Canis latrans*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), mink (*Mustela vison*), least weasel (*M. nivalis*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), several species of foraging bats, shrews, other species of small mammals, and rabbits. Mountain lions (*Felis concolor*) may be present in very low numbers, especially during the winter.

3.14.2 Birds, Including Migratory Birds

The Montana Gap Analysis project (MT-GAP) (University of Montana Wildlife Spatial Analysis Lab, 1998) indicates that more than 250 species of birds may occur in the project area. Some are year-round residents, a few migrate south into the planning area during the winter, some breed in the planning area and winter to the south, and many pass through the area during spring and fall migration. Nearly all of these 250 species are protected by the Migratory Bird Treaty Act of 1918 (MBTA), to which the U.S. is a signatory. A substantially

smaller number of species are associated with habitats that would be directly or indirectly affected by the build alternatives. Species richness and breeding bird densities are highest in riparian woodlands located along the major rivers, lower in local wetland habitats due to their small size and location in relation to roads and other development, and very low in agricultural lands and remnant native upland grasslands used as pastures.

Common waterfowl and shorebird species include the mallard (*Anas platyrhynchos*), pintail (*A. acuta*), gadwall (*A. strepera*), blue-winged teal (*A. discors*), common merganser (*Mergus merganser*), Canada goose (*Branta canadensis*), killdeer (*Charadrius vociferus*), and American avocet (*Recurvirostra americana*). All of these species are protected by one or more of the MBTA conventions. The Yellowstone River and Clarks Fork Yellowstone River drainages are used heavily for nesting by Canada geese and some species of ducks. Shorebirds forage in flooded and irrigated pastures, especially during spring migration.

Until recently, the largest great blue heron rookery in Montana was located on the Yellowstone River near the project area (Flath, pers. comm., 2001). However, double crested cormorants (*Phalacrocorax auritus*) have begun to occupy these nests and the heron rookery has dispersed. Riparian and emergent wetland communities are important foraging areas for herons.

Red-winged blackbirds (*Agelaius phoeniceus*) and song sparrows (*Melospiza melodia*) are fairly common in emergent wetlands. Cottonwood riparian communities along the rivers would be expected to support the highest species richness and breeding densities of neotropical migrants (Hopkins, 1984). Many of these species have suffered population declines due to the loss of habitat in feeding and wintering areas.

Many of the raptors occurring in the project area have been identified by the State of Montana, U.S. Forest Service (USFS), or U.S. Bureau of Land Management (BLM) as sensitive species or species of special interest or concern (Flath, 1991; Houtcooper et al., 1985). These include a few nesting osprey (*Pandion haliaetus*), Cooper's hawk (*Accipiter cooperii*), northern goshawk (*Accipiter gentilis*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), northern harrier (*Circus cyaneus*), sharp-shinned hawk (*Accipiter striatus*), and western screech owl (*Otus kennicottii*). Peregrine and prairie falcons (*Falco peregrinus* and *F. mexicanus*) pass through the area during spring and fall migration (Flath, pers. comm., 2001). The formerly threatened bald eagle (*Haliaeetus leucocephalus*) is discussed in *Section 3.15, Threatened and Endangered Species and State Species of Concern*. Raptors are protected by the MBTA.

Upland game birds that occur in the project area include sharp-tailed grouse (*Tympanuchus phasianellus*), gray partridge (*Perdix perdix*), and a few ring-necked pheasants (*Phasinus colchicus*). Grouse move into the river bottom during severe winters and also forage in wheat fields, along with partridge. Pheasants forage in grain fields and around feedlots and use wetland and shrubby riparian areas for cover.

3.14.3 Reptiles and Amphibians

The MT-GAP (University of Montana Wildlife Spatial Analysis Lab, 1998) indicates that the project area may support one salamander, four frog, four toad, three turtle, two lizard, and

nine snake species. MFWP has expressed particular concern about four of these species: spiny softshell (*Trionyx spiniferus*), northern leopard frog (*Rana pipiens*), tiger salamander (*Ambystoma tigrinum*), and western hognose snake (*Heterodon nasicus*). The spiny softshell, western hognose snake, and northern leopard frog are discussed in *Section 3.15.2, State Species of Concern*.

Tiger salamanders can occur wherever the soil is suitable for burrowing and a nearby body of water exists for breeding (University of Montana Wildlife Spatial Analysis Lab, 1998). Wetlands and moist riparian areas located near perennial rivers would likely be most attractive, but emergent wetlands near old river oxbows may also provide suitable habitat. Although not observed, habitat exists for the tiger salamander species.

3.15 Threatened and Endangered Species and State Species of Concern

This section provides information about threatened and endangered wildlife and state species of concern.

3.15.1 Threatened and Endangered Wildlife

The FWS website (http://www.fws.gov/montanafieldoffice/), accessed on July 26, 2007, listed three wildlife species protected under the Endangered Species Act (ESA) potentially occurring in the proposed project's vicinity in Carbon County (see *Appendix B* for the species information). Federally listed species include the endangered black-footed ferret (*Mustella nigripes*), the threatened Canada lynx (*Lynx canadensis),* and the experimental, non-essential population of the gray wolf (*Canis lupus*). On August 8, 2007, the bald eagle was removed from the list of threatened species because it was determined to have recovered from threatened status. Bald eagles are discussed in *Section 3.15.2, State Species of Concern.* The FWS letter listing threatened and endangered species that may occur in the project vicinity dated September 11, 2007, included the endangered whooping crane (*Grus americana*), which had not been noted in previous correspondence.

3.15.1.1 Black-Footed Ferret

Historically, black-footed ferrets inhabited grassland plains (shortgrass and midgrass prairies) surrounded by mountain basins approximately 3,250 m (10,663 ft) in elevation (FWS, 1998). This species is always found in association with another grassland species, the prairie dog (*Cynomys* spp.) (Burt and Grossenheider, 1980; Cahalane, 1954). Prairie dogs are the principal food of the black-footed ferret, and prairie dog burrows provide the ferret's principal shelter, as they do not dig their own burrows (Anderson et al., 1986; Biggins et al., 1986; Clark et al., 1982; Forrest et al.; 1988; Hillman, 1968; Miller et al., 1996). Data suggest that a ferret needs a prairie dog colony of at least 12.5 ha (30.9 ac) to survive for 1 year and a minimum of 50 ha (123.5 ac) to raise a litter (Caughley and Gunn, 1996). Ferret range is coincident with that of prairie dogs (Anderson et al., 1986). The breeding of black-footed ferrets outside of prairie dog colonies has not been documented. Specimen records of

black-footed ferrets are available from ranges of three species of prairie dogs: the black-tailed prairie dog *(Cynomys ludovicianus)*, white-tailed prairie dog (*C. leucurus*), and Gunnison's prairie dog (*C. gunnisoni*) (Anderson et al., 1986).

Ferrets have been decimated from their former range, and distribution is now limited to introduced populations in Arizona, Wyoming, Montana, and South Dakota (FWS, 1998). Reintroduction efforts have been concentrated in these four states because they still have protected areas with large prairie dog colonies. Although the Wyoming effort has been hampered by disease problems, the other three states have shown some success (FWS, 1996). Reintroduction efforts were conducted in Wyoming from 1991 to 1994, Montana from 1994 to 1996, South Dakota from 1994 to 1996, and Arizona in 1996. Ferrets have not been introduced in the vicinity of the proposed project and they are not known to occur in the project area.

3.15.1.2 Canada Lynx

According to the Lynx Conservation Assessment and Strategy (Ruediger et al., 2000), lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe. Both snow conditions and vegetation type are important factors to consider in defining lynx habitat. Most lynx occurrences (83 percent) were associated with Rocky Mountain conifer forest, and most (77 percent) were within the 1,500- to 2,000-m (4,920- to 6,560-foot) elevation zone. Primary vegetation that contributes to lynx habitat is lodgepole pine, subalpine fir, and Engelmann spruce. None of these habitats occur within or near the project area, and lynx would not be expected to occur in the area.

3.15.1.3 Gray Wolf

The gray wolf was removed from the list of endangered species where it had been listed as an experimental, non-essential population, on March 28, 2008, because recovery goals had been met (Federal Register, 2008). As of March 28, 2008, the wolf was delisted by the USFWS and management transferred to the State and Tribes (Federal Register, 2008). The U.S. Federal District Court in Missoula, Montana, issued a preliminary injunction on July 18, 2008, that immediately reinstated the ESA protections for wolves in the northern Rocky Mountains including Montana. This injunction will remain in place until final resolution of this case occurs. The ESA provisions reinstated by the court are the same ones that were in effect before wolves were delisted on March 28, 2008. All wolves in southern Montana including the project area will be managed under the 2005 and 2008 ESA experimental nonessential population regulations.

The project area is located within the Greater Yellowstone recovery area and any wolves in this area are considered to be part of an experimental, non-essential population. In 2007, the nearest reported wolf pack is located about 15 miles to the west of the project area near Roscoe, Montana (http://fwp.mt.gov/content/32287,800,800.jpg).

The gray wolf has no particular habitat preference and is highly adaptable to a variety of habitats. The gray wolf requires areas with low human population, low road density, and high prey density (ideally large, wild ungulates). Wolves are good hunters and wide-ranging predators. Gray wolves prefer to hunt ungulates, but when ungulate populations are low or seasonally unavailable, wolves are also known to eat beaver, snowshoe hare, rodents, and

carrion. Wolves are not known to occur in the immediate project area. The project area does not support large ungulate herds and has relatively high levels of human activity, making it very unlikely that a pack would establish in the project area. Wolves passing through that area may be temporarily displaced by the proposed project, but would not be prevented from accessing neighboring important habitats.

3.15.1.4 Whooping Crane

FWS reported the reliable sighting in 2005 of a pair of adult whooping cranes along the Yellowstone River about 4 miles southwest of Laurel and about 1.5 miles west of the project area. There have been no reported observations in the Clarks Fork Yellowstone River drainage, where the project is located.

About 145 whooping cranes migrate across Montana from Wood Buffalo National Park in northeastern Alberta and southern Northwest Territories to the Aransas National Wildlife Refuge on the gulf coast of Texas. Their main migration route is through the central Great Plains, mostly the Dakotas and extreme northeast Montana, and then down through Nebraska and Kansas to Texas (www.fws.gov/medicinelake/Press/whooping%20crane%20Oct%202003.pdf).

Whooping cranes are occasionally sighted in southwestern Montana's Centennial Valley and in the extreme northeast corner of the state near Medicine Lake National Wildlife Refuge (http://nhp.nris.mt.gov/mbd/ and http://www.mt.nrcs.usda.gov/news/factsheets/whoopingcrane.html). Many of the confirmed sightings are from eastern and especially northeastern Montana (http://www.npwrc.usgs.gov/resource/birds/wcdata/mt_fig1.htm) (USGS, 2006). The Montana Bird Distribution Database (http://nhp.nris.mt.gov/mbd) also shows observations concentrated in northeastern Montana with other occasional occurrences in the southeast and southwest parts of the state.

Whooping cranes prefer sites with minimal human disturbance (Clark et al., 1989). They inhabit shallow wetlands that are characterized by cattails, bulrushes, and sedges and stop on wetlands, river bottoms, and agricultural lands along their migration route (Reel et al., 1989). They can also be found in upland areas, especially during migration. Observations of individual whooping cranes in other areas of Montana outside of the national wildlife refuges include grain and stubble fields as well as wet meadows, wet prairie habitat, and freshwater marshes that are usually shallow and broad with safe roosting sites and nearby foraging opportunities (http://fwp.mt.gov/fieldguide/detail_ABNMK01030.aspx). Loss of habitat and shooting are the main reasons for the whooping crane's decline.

3.15.2 State Species of Concern

The Montana Natural Heritage Program (MNHP) and MFWP (2006) list 13 Montana Species of Concern that may occur in or near the project area. These include the bald eagle, peregrine falcon, mountain plover (*Charadrius montanus*), Baird's sparrow (*Ammodramus bairdii*), greater sage-grouse (*Centrocercus urophasianus*), barn owl (*Tyto alba*), black-tailed prairie dog, milk snake (*Lampropeltis triangulum*), spiny softshell, northern leopard frog, western hognose snake, Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*), Drummond's hemicarpha (*Hemicarpha drummondii*), and swamp milkweed (*Asclepias incarnata*).

The MNHP searched their database for occurrences of these species in the project vicinity during July 2007. Because the MNHP database only includes information about known occurrences, it only reflects where surveys have been conducted or observations have been made for a particular species and where the findings have been reported to the MNHP. The letter from the MNHP conveying the database search results states: "The results of a data search by the Montana Natural Heritage Program reflect the current status of our data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys, which may be required for environmental assessments. The information is intended for project screening only with respect to species of concern, and not as a determination of environmental impacts, which should be gained in consultation with appropriate agencies and authorities." The MNHP database search results are included in *Appendix B* and are summarized below:

- **Bald Eagle.** The final rule to delist the bald eagle from protection under the Endangered Species Act was published in the *Federal Register* on July 12, 2007 (FWS, 2007a; 72 FR 130). The rule took effect on August 8, 2007. The bald eagle will continue to be protected by two other federal laws: the Bald and Golden Eagle Protection Act and the MBTA. Both laws prohibit killing, selling, or otherwise harming eagles, their nests, or eggs. Management of bald eagles under these acts is described in the National Bald Eagle Management Guidelines (FWS, 2007b).

  MFWP confirmed the presence of bald eagles in the proposed project's vicinity (Flath, pers. comm., 2001). Bald eagles use the Yellowstone River and the Clarks Fork Yellowstone River during spring and fall migrations and during the winter. Peak numbers of bald eagles are present during the winter from November through April. There is a bald eagle nest along the Clarks Fork Yellowstone River near Silesia, and four to five eagles typically winter in that general area and near the mouth of Rock Creek. The MNHP database search also indicated a bald eagle about 1.5 miles to the southeast of Rockvale. No additional details regarding this occurrence were provided. MFWP was not aware of any regularly used winter roosts in the vicinity of the project area (Flath, pers. comm., 2001). Bald eagles perch and forage for fish and waterfowl along the Clarks Fork Yellowstone River. There are also active eagle nests on the Yellowstone River about 6.4 km (2.9 mi) east and 9.7 km (6 mi) west of the project area. The MNHP database (http://nhp.nris.state.mt.us/animal/) also indicates breeding activity within the latitude-longitude coordinates that encompass the project area.

- **Peregrine Falcon.** Peregrine falcons were recently delisted under the ESA. However, they are still protected by several international migratory bird treaties. Peregrine falcons migrate through the general project area during the spring and fall, but none are known to nest in the vicinity (Flath, pers. comm., 2001). Peregrine falcons are attracted to wetlands and rivers where waterfowl and shorebirds, their primary prey, may congregate. It is unlikely that peregrine falcons would be adversely affected by the proposed project because relatively few hectares of emergent wetlands would be impacted. Impacted emergent wetlands are mostly located near the existing US 212 alignment and the railroad, where existing levels of human activity probably deter foraging by peregrine falcons.

- **Mountain Plover.** Mountain plover habitat is grasslands and it has historically been associated with bison, pronghorn, and burrowing rodents, including prairie dog towns. In Montana, the primary habitats for mountain plover are high, relatively level arid plains and shortgrass prairie with blue grama and buffalo grass (*Buchloe dactyloides*), and prickly pear cactus (Graul, 1975; Fisher et al., 1998). The MNHP website (http://nhp.nris.state.mt.us/animal) shows the known distribution of breeding, wintering, and migration areas for many of the birds of Montana. The database does not show occurrences of mountain plovers within the latitude-longitude that includes the project area, although suitable habitat is present. Given the lack of recent occurrences in the proposed project's vicinity, the lack of observations during field work, the lack of observations since records were established by the MNHP in 1985, the lack of prairie dog towns, and the low quality of the upland habitat for mountain plovers (*Charadrius montanus*), it appears unlikely that mountain plovers use the project area.
- **Baird's Sparrow**. The MNHP database search indicated a record of the Baird's sparrow about 1.5 miles to the east of the project area and just east of the Clarks Fork Yellowstone River. Baird's sparrows breed in mixed grass native prairie and forbs without excessive grass litter or heavy brush. Some hayfields or pastures may support Baird's sparrows where native grasses occur in sufficient quantity, but generally, cultivated land is far inferior habitat relative to true prairie. Their range extends from eastern and central Montana and northern South Dakota north to the Canadian provinces of Alberta, Saskatchewan, and Manitoba. The project area is on the edge of this sparrow's range. The project area includes upland habitat with both native and non-native vegetation but does not include native mixed grass prairie. These mixed stands of native grasses and forbs with non-native species, referred to as Native/Non-Native Vegetated Uplands, do not provide preferred nesting habitat for Baird's sparrows. However, use of portions of the project area by this species is possible.
- **Greater Sage-Grouse**. The MNHP database search results indicated two occurrences of greater sage-grouse about 3 to 8 miles to the east of Rockvale. No details regarding these occurrences are available. Connelly et al. (2004) described greater sage-grouse habitat requirements as follows: "Greater sage-grouse depend on sagebrush (*Artemisia* spp.) for much of their annual food and cover. This close relationship is reflected in the North American distribution of sage-grouse, which is closely aligned with sagebrush, and in particular big sagebrush (*A. tridentata*) and silver sagebrush (*A. cana*). This relationship is perhaps tightest in the late autumn, winter, and early spring when sage-grouse are dependent on sagebrush for both food and cover. However, sage-grouse also depend on sagebrush at other times of year, primarily for protective cover, such as for nests during the breeding season. Other habitat characteristics may be less overtly important than sagebrush, but may be nearly as important. For example, herbaceous cover may provide both food and cover during the nesting and early brood-rearing seasons, thus playing a major role in the population dynamics of sage-grouse." The project area includes a few small remnant stands of sagebrush but does not include the large expanses of sagebrush required by this species. Also, human disturbance levels in the vicinity of the project area are too high for sage-grouse, and this species is not expected to occur in the area.
- **Barn Owl.** The MNHP database search results indicated a barn owl occurrence about 3 miles southwest of Rockvale. Barn owls are found in open grass-like habitats such as

grasslands, deserts, wet meadows, marshes, lightly grazed pastures, hayfields, and abandoned agriculture fields. They nest in hollow trees, in cliff cavities, and in human-made cavities including barns, silos, church steeples, warehouses, and grain elevators. Juveniles are known to disperse long distances from the nest site and may move through the project area.

- **Black-Tailed Prairie Dog.** Black-tailed prairie dogs inhabit dry, upland prairies and grasslands (Burt and Grossenheider, 1980). They are considered to be typical of Plains-Mesa Grasslands (Frey and Yates, 1996). Historically, colonies were often found even in marginal habitat, such as open woodlands and semi-desert areas (Findley et al., 1975). Black-tailed prairie dogs are capable of colonizing a variety of shrub-grassland and grassland habitats. Generally, the most frequently used habitats in Montana are dominated by western wheatgrass (*Agropyron smithii*), blue grama, and big sagebrush, and located in relatively level areas in wide valley bottoms, rolling prairies, and the tops of broad ridges (Knowles, 1982). The black-tailed prairie dog is considered to be a critical link (keystone) species because it provides critical habitat or habitat elements to a host of other species (Agnew et al., 1986; Finch, 1992; Kotliar et al., 1999; Miller et al., 1994; Reading et al., 1989). Although the original abundance of prairie dogs in Montana is unknown, early accounts indicate they were widely distributed east of the Continental Divide in grasslands and sagebrush-grasslands habitats (Cooper, 1869a; Cooper, 1869b; Coues, 1878; Hoffman and Pattie, 1968). Black-tailed prairie dogs have not been observed in the project area and abandoned prairie dog towns were not discovered.
- **Milk Snake.** Milk snakes occur in suitable habitats throughout south-central and southeastern Montana. Preferred habitats include sandstone bluffs, rock outcrops, grasslands, river bottoms, farmland, and open ponderosa pine and juniper stands (Stebbins, 1966; Hendricks and Reichel, 1996). Suitable habitat is found throughout the project area, but individual milk snakes have not been observed or reported. The MNHP database search results indicated a milk snake occurrence about 7 miles west of Silesia.
- **Spiny Softshell.** The spiny softshell is a turtle that occurs primarily in the larger rivers of southeastern Montana. It is found in well-oxygenated, slow-moving water with nearby mud flats and sandbars, and occasionally in backwater sloughs (University of Montana Wildlife Spatial Analysis Lab, 1998). They may be found approximately 50 m (164 ft) from permanent water and occasionally occupy temporary water such as irrigation canals and drains. Spiny softshells are active from April through September. The best habitat in the project area is the Clarks Fork Yellowstone River, with less desirable habitat in Rock Creek and scattered wetlands and canals throughout the project area. Individual spiny softshells have not been reported in the project area.
- **Northern Leopard Frog.** Northern leopard frogs have declined substantially in western, and to a somewhat lesser extent, central Montana (University of Montana Wildlife Spatial Analysis Lab, 1998). Northern leopard frogs are associated with permanent, slow-moving water bodies with considerable riparian vegetation, but may also range into moist meadows and grassy woodlands and, occasionally, agricultural areas (Nussbaum et al., 1983). Although not observed, wetland habitat exists for northern leopard frogs in the project area.
- **Western Hognose Snake.** The western hognose snake occurs in a variety of habitats associated with arid areas, prairie grasslands and shrublands, and floodplains with

gravely or sandy soils (Reichel and Flath, 1995). Although not observed, habitat exists for western hognose snakes in the project area.

- **Yellowstone Cutthroat Trout.** Yellowstone cutthroat trout have been reported in Rock Creek between River km 80 and 112 (River mi 50 and 69). However, because this species is typically associated with higher elevation headwater areas, Yellowstone cutthroat trout generally would not be expected to use lower reaches of Rock Creek in the vicinity of the US 310 bridge crossing.
- **Drummond's Hemicarpha.** Drummond's hemicarpha prefers moist, sandy soil along rivers and streams in the valley. This plant has the potential to occur in the project area and searches for it or its habitat were conducted in wet areas. The MNHP database search results indicated an occurrence of Drummond's hemicarpha a few miles southwest of Rockvale. Since the only suitable habitat in the project area is the Clarks Fork Yellowstone River, Drummond's hemicarpha habitat is not affected by the proposed project.
- **Swamp Milkweed.** Swamp milkweed is another plant species that prefers wet meadows and thickets, but is not expected to occur in the project area. Searches were conducted for swamp milkweed because CH2M HILL encountered milkweed in the project area and wanted to ensure that it was not the swamp milkweed species. This species was not found during field surveys conducted from June 11 to 15, 2001.

3.16 Floodplains

A 100-year floodplain is defined as the area covered by water from a 100-year flood (a flood event that has a 1 percent chance in any year or a probability of occurring once every 100 years). The Yellowstone River, the Clarks Fork Yellowstone River, and Rock Creek are the three rivers with 100-year floodplains that lie within or immediately adjacent to the project area.

The Yellowstone River flows from west to east, while the Clarks Fork Yellowstone River flows from south to north. The floodplains of the Yellowstone River and the Clarks Fork Yellowstone River merge just southeast of the City of Laurel. The Yellowstone River borders the proposed project on the northwest and the Clarks Fork Yellowstone River borders the proposed project on the east. Rock Creek, which is a major tributary of the Clarks Fork Yellowstone River, borders the south edge of the project area. Each build alternative would encroach upon the 100-year floodplains of the three rivers. Alternative 1 would also include a bridge over Rock Creek.

These floodplains in the project area are covered by the Flood Insurance Rate Maps (FIRMs) from the Federal Emergency Management Agency (FEMA) or Floodway Maps (FEMA, various dates) (see Figure 4-2). The 100-year floodplain displayed on each FIRM is determined by approximate methods without detailed hydraulic analysis. The 100-year water surface elevations displayed on the Floodway Maps were derived from detailed hydraulic analyses and are shown at selected intervals. The roadway sections located within Yellowstone County are covered by Yellowstone County Floodway Maps 300142 1135 and 300142 1140 and Yellowstone County FIRM Maps 300142 1135B and 300142 1140B. The Rock Creek crossing associated with Alternative 1 is covered by Carbon County Floodway

Map 300139 0110 and Carbon County FIRM Map 300139 0110B. The most southern end of Alternative 3A is covered by Carbon County Floodway Maps 300139 0110 and 300139 0130 and Carbon County FIRM Maps 300139 0110B and 300139 0130B.

The floodplains in the project area are protected by state and local floodplain standards. The state floodplain coordinator was contacted regarding these standards. Applicable procedures and regulations are provided in *Section 4.16, Floodplains*.

3.17 Cultural Resources

The cultural resources section provides information about:

- Regulatory Guidelines
- Research Methodology
- Resource Inventory
- Site Descriptions

3.17.1 Regulatory Guidelines

Cultural resources are defined in Section 301 of the National Historic Preservation Act (NHPA) of 1966, as amended, as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places" (16 USC 470W). Established criteria are used to determine if a cultural resource is eligible for listing on the National Register of Historic Places (NRHP). A property must be important in American history, architecture, archaeology, engineering, or culture; it must also possess integrity of location, design, setting, materials, workmanship, feeling, and association; and it must meet one of the following criteria:

- **Criterion A.** Properties that are associated with events that have made a significant contribution to the broad patterns of history.
- **Criterion B.** Properties that are associated with the lives of persons significant in our past.
- **Criterion C.** Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D.** Properties that have yielded, or may be likely to yield, information important to prehistory or history.

3.17.2 Research Methodology

The cultural resources inventory for the proposed project's corridor was conducted in compliance with federal guidelines, including Sections 106 and 110 of the NHPA and regulations in 36 CFR 800. Cultural resources were identified that are on, or eligible for

listing on, the NRHP. Both record searches and field inventories were employed during this analysis.

Cultural reports were obtained from the Montana State Historic Preservation Office (SHPO) and records were obtained from the General Land Office (GLO) to identify the presence of historic trails, site leads, or NRHP-eligible sites. A search of files indicated that nine prior projects were located in the vicinity of the project area. Those projects had identified multiple cultural sites. However, the prior projects had identified only one "eligible" site located within the project area—the Free Silver Ditch (24CB1287). Evaluation related to another project had determined that the Free Silver Ditch site was eligible for the NRHP under Criterion A.

The area of potential effect was limited to existing and additional rights-of-way that might be acquired or used to construct the build alternatives. Field inventories were conducted in the area of potential effect. Ethnoscience (2001) conducted a cultural resource survey on the area of potential effect (available at MDT). Each site in that report is referenced by a site number. Each site might have more than one cultural or historic feature. The addition of Alternative 5A and Alternative 5B (preferred) required an additional cultural resources survey, which was conducted in November 2002 (Ethnoscience, 2002).

3.17.3 Resource Inventory

The Free Silver Ditch (24CB1287) and the Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533) (now called the BNSF Railway) are eligible for the NRHP under Criterion A. A historic farm house on the Nutting Farmstead (24CB1642) is eligible for the NRHP under Criterion C.

Table 3-12 summarizes the cultural sites with known NRHP eligibility that were identified during the cultural resources inventory of the project area. An untested archeological site (24CB1642) was located near Alternative 5B (preferred)'s alignment. It was tested and determined to not be eligible for listing on the NRHP. A letter to that effect was sent to SHPO on May 5, 2003. SHPO concurred on May 8, 2003. *Appendix H* of this Final EIS contains the correspondence.

TABLE 3-12
Summary of Sites Identified during the Rockvale to Laurel Cultural Resources Inventory

Site Number	Description	NRHP Eligibility
24CB1283/24YL1533	Rocky Fork Branch of the Northern Pacific Railroad	Eligible, Criterion A
24CB1287	Free Silver Ditch	Eligible, Criterion A
24CB1642	Main House of Nutting Farmstead	Eligible, Criterion C

Sources: Ethnoscience, 2001 and 2002.

3.17.4 Site Descriptions

The following list describes the sites identified during the cultural resources inventory of the project area.

- **Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533).** The portion of this site in the project area consists of a single, standard-gauge railroad track. The site is eligible for NRHP listing under Criterion A because of its significance to the settlement and economic and transportation development of the region.
- **Free Silver Ditch (24CB1287).** The Free Silver Ditch, which was constructed in 1893, diverts water from Rock Creek. It is approximately 14.5 km (9 mi) in length. The site is eligible for NRHP listing under Criterion A because of its association with the development of irrigation in southeastern central Montana and its contribution to the success of the agricultural productivity of the local area.
- **Main House of the Nutting Farmstead (24CB1642).** This farmstead, which was settled in the 1900s, consists of 2 houses (constructed in 1903 and 1910) and 11 outbuildings. The main house, built in 1903, is eligible for NRHP listing under Criterion C because it is a unique example of the vernacular Craftsman-style architecture for this region and exhibits significance of design and construction. The other features of the farmstead, including the land, are not recommended for listing because they are not important at the national, regional, or local level; have not been associated with historically significant person(s); do not have architectural significance; and cannot potentially yield further information about the people who lived on the property or about the general lifestyle of the period when it was occupied.

3.18 Hazardous Materials

The hazardous materials section provides information about the investigation and the sites potentially containing hazardous materials.

3.18.1 Investigation

Several methods were used to survey for hazardous materials in the project area. These methods included walking and/or driving each proposed alignment, obtaining a VISTA Site Assessment report, and communicating with property owners and State of Montana representatives. The investigation included coordination and data searches involving the following organizations: the Environmental Clean-up Group with the Montana Rail Link; the Enforcement Division of the MDEQ; and the Montana Disaster and Emergency Services. In addition, the National Response Center Public Report Database (http://www.nrc.uscg.mil) was queried by county name (Yellowstone County and Carbon County).

3.18.2 Sites Potentially Containing Hazardous Materials

During the hazardous waste survey, North Wind Environmental, Inc., identified sites within the project area that might contain hazardous materials (2001). These sites include the following:

- Small waste collection areas (often referred to as "waste dumps"). Multiple private land holdings scattered throughout the project area have such waste collection areas. The waste collection areas may contain only items commonly found in waste sites. However, it is possible that they contain contaminants such as household chemicals, fertilizers, and oils and lubricants that could contaminate soil.
- Dwellings built before the use of lead-based paints and asbestos was discontinued have the potential for lead and asbestos contamination.
- Aboveground storage tanks (ASTs) that are commonly used for propane storage. Several landowners have ASTs.
- While not observed, some dwellings to be relocated may have underground storage tanks (USTs) used to hold heating oil or other liquids used in farming.
- A railroad tie salvage business.
- Several utility transformers.
- The electrical substation in Silesia owned by the Yellowstone Valley Electric Co-Op.

3.19 Visual Resources

A visual and aesthetic resources report was performed on the project area using the recommendations outlined in FHWA's *Visual Impact Assessment for Highway Projects* (1988). The *Visual Resources Report* (Fischer and Associates, 2003) prepared for the proposed project addresses the visual quality of the study area (affected environment) and the visual impacts (environmental consequences) associated with each of the proposed alternatives. Visual characteristics were identified for the highway user and for viewer groups situated along the proposed project.

The following sections summarize the *Visual Resources Report*:

- Existing Visual Characteristics
- Landscape Units
- Visually Sensitive Resources

For more detailed information, please refer to the report (Fischer and Associates, 2003).

3.19.1 Existing Visual Characteristics

The existing and proposed US 212 corridors are located in the Rocky Mountain foreland subregion of the Great Plains Region, as classified by the USDA. The landscape in the

project area consists of plateaus, hills, plains, small creeks, canals, drainages, and isolated mountain outcroppings, including the Beartooth Mountain Range visible in the distance. The Yellowstone River and Clarks Fork Yellowstone River have riparian vegetation that forms strong lines in the landscape. The drier foothills and higher plateaus have been heavily grazed. Dryland farming occurs on the West Bench.

The prominence of the ridgelines and plateaus decreases as one travels north. The valley bottoms are colorful because of irrigated crops and wetland vegetation. The green vegetation abruptly transitions to dry hillsides and eroded slopes on either side of the river valley. Development along most of the proposed corridors is scattered and sparse. Railroad tracks parallel the existing highway from Silesia north to Laurel.

3.19.2 Landscape Units

FHWA defines landscape units as "outdoor rooms," often corresponding to places or districts that are already named. Units are enclosed by clear landform or land cover boundaries. A landscape unit is perceived as a complete visual environment, while a landscape type is generally perceived as part of that environment. The study area generally contains four landscape units including the Clarks Fork Yellowstone River valley, the Yellowstone River valley, the West Bench (plateau), and the eastern prairie uplands (Figure 3-7). At the southern end of the study area, a sub unit, the Rock Creek drainage, parallels the existing highway.

An open, elevated plateau situated between the two river valleys characterizes the West Bench. Several irrigation ditches and canals are located below the ridge, further defining the landscape units. The eastern prairie rises gently from the Clarks Fork Yellowstone River valley, with higher and more pronounced landforms near the southern end.

The *Visual Resources Report* (Fischer and Associates, 2003) provides a list of inventoried visual resources and the respective pattern elements and pattern character. The report supports the findings that landforms and vegetation exhibit the greatest dominance and scale of the resources present. The continuity of the river and vegetation are moderately prominent. Except along the existing highway corridor, development is the least prominent of the landscape resources.

3.19.3 Visually Sensitive Resources

Only a few resources in the project area might be classified as visually sensitive. The most significant of these are views of the Yellowstone River and its tributaries and the distant views of the Beartooth Mountain Range. Farming and grazing have modified most of the natural landscape. However, the simplicity and undeveloped character of the agrarian landscape is a visual resource to be recognized. This section provides information about affected viewers and the existing visual quality.

ALTERNATIVE ALIGNMENTS

- 1 Far West Bench Alternative
- 2 Near West Bench Alternative
- 3 Near Existing Alignment Alternative (A & B)
- 5 Combined West Bench Alternative (A & B)

LANDSCAPE UNITS

- LANDSCAPE UNIT BOUNDARY
- VALLEY
- TRANSITION SLOPE
- PLATEAU
- HILLSIDE
- COMMUNITY
- SCENIC VIEWS
- RIDGELINE

Laurel

RP53

RP52

RP51

RP50

RP49

RP48

RP47

RP46

RP45

RP44

RP43

RP42

YELLOWSTONE RIVER

VIEWS OF THE YELLOWSTONE RIVER

RAILROAD TRACKS

CLARKS FORK RIVER

DRY, ERODED HILLSIDE WITH MANY COULEES AND DRAINAGES

SLOPING GRAZING LAND

LANDSCAPE UNIT DEFINED BY FLOOD PLAIN AND IRRIGATED CROPLAND

RIDGELINE

WEST BENCH / PLATEAU

RIDGELINE

VIEWS TO THE BEARTOOTH MOUNTAINS

RIDGELINE

SILESIA

ROCKVALE

EAST/ ROUND BUTTE

INTERMITTENT FLOW COTTONWOOD CREEK

RIDGELINE

DRY, ERODED HILLSIDE WITH MANY COULEES AND DRAINAGES

ROCK CREEK

HIGHWAY 310

CLARKS FORK RIVER VALLEY

1:25000

0 250 500 750 1000 M

North

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 3-7
US 212 LANDSCAPE UNITS

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3.19.3.1 Affected Viewers

The proposed highway project would affect those viewing the road and those viewing from the road. Although the greatest number of viewers are from the road, the greatest view durations would be by viewers off the road. Scenic quality is most important to tourists, often determining the route tourists select to reach a destination.

Residents are the group most sensitive to changes in their view of the road. Residents might interpret higher traffic volumes as an adverse impact to their view shed. Residents living along the existing corridor are a small, but growing, group of viewers of the road.

Viewer sensitivity can be assumed to be moderate for commercial users and commuters and moderate-to-high for both residents and tourists. Many of the tourists are traveling through the area specifically to enjoy the magnificent scenery or recreational opportunities. The tourist group has the highest expectations to enjoy attractive scenery.

3.19.3.2 Existing Visual Quality

The environment's existing visual quality for the entire study area is considered moderate. This is largely attributed to the amount of modification that has occurred to the natural landscape from both development and agriculture. The visual quality along the existing highway is low-to-moderate, due to the encroachment of constructed elements and alterations of the natural landscape.

The existing visual quality of the six alternative corridors was evaluated using the FHWA methodology to determine the existing visual quality rating. Visual quality rating is based on the merits of three independent parameters: landscape unity, intactness, and vividness. A rating of 7.0 is considered the highest quality rating possible under FHWA guidelines. The average existing visual quality rating for the proposed corridors ranges between 3.1 and 4.0. Ratings for existing visual quality fall within the moderate range rating.

3.20 Energy Consumption

An analysis of energy requirements and conservation potential for the build alternatives was conducted (TRB, 2000). The evaluation considered both the direct and indirect energy impacts of the proposed project. Direct energy, also known as operational energy, is the energy consumed by vehicles using the highway. Vehicle fuel usage is an excellent indicator of direct energy consumption. Indirect energy consumption includes energy expended in the construction, improvement, and maintenance of the roadway. The exact amount of energy consumed to maintain the PTW is unknown.

Traffic speed, degree of traffic congestion, vehicle fuel efficiency, and total miles driven influence the amount of fuel an automobile uses. The extent of horizontal curves in the road, the angle of the curves, and distances are some of the factors considered when determining the energy impacts or conservation potential of a roadway. Measures that improve traffic flow decrease fuel consumption for the average vehicle.

US 212 between Rockvale and Laurel, Montana, has become increasingly congested, especially in the summer tourist season. US 212 connects I-90 to the Beartooth Highway, which provides access to the northeast entrance of Yellowstone National Park. Traffic volumes are expected to exceed the ability of this two-lane roadway to provide safe and uncongested transportation services. The highway does not meet current design and engineering standards, which will continue to influence accident rates as traffic within the project area increases. Accidents slow traffic flow, which raises energy consumption.

3.21 Geology and Soils

The geology and soils section provides information about:

- Topography
- Geology
- Soils

3.21.1 Topography

The landscape of the project area has been formed primarily by glacial and alluvial processes. It consists of a glacial plain dissected by irrigation ditches, stream drainages, the Yellowstone River, and the Clarks Fork Yellowstone River. The northern end of the project area is marked by the Yellowstone River, which continues to run northeasterly throughout the project area. Rock Creek, at the southern end of the project, also runs through the project area. Steep cliffs and bluffs are observed along the southeast side of the Yellowstone River. The Clarks Fork Yellowstone River runs along the eastern edge of the project area, in addition to the existing US 212, which lies just to the west of the Clarks Fork Yellowstone River. Fairly steep, eroded bluffs were observed along the northwest side of the existing highway alignment. Landslides were not observed on the aerial photographs, but some small debris flows may be present. Rolling hills exist on the southeast side of the Clarks Fork Yellowstone River, in addition to numerous erosional channels, barren slopes, and “badland”-type topography.

3.21.2 Geology

The *Geologic Map of the Billings 30' x 60' Quadrangle* (Lopez, 2000) provides a geologic map of the vicinity. This map shows the primary bedrock formations in the area to be the Mowry Shale and the Belle Fourche Shale. The Mowry Shale is described as light to medium gray, very fine to fine-grained sandstone, siltstone, and shale. Bentonite beds are common and range in thickness from 0.3 to 1.2 m (1.0 to 4.0 ft). The Belle Fourche Shale is described as dark gray, fissile shale with thick bentonite beds in the lower part. These formations are typically flat-lying. Faults have not been mapped in the project area.

Steep cliffs and bluffs, observed along the southeast side of the Yellowstone River, are composed of horizontal sedimentary rocks. Alignments that require excavation into these cliffs might encounter relatively hard sedimentary bedrock. It appears that the terrain on the southeast side of the Clarks Fork Yellowstone River is composed of easily erodible soil or very soft bedrock. Alignments in this area that require cut slopes might be prone to soil

erosion. It appears the cut slopes would be excavated in either loose soil or soft sedimentary bedrock.

Along the valley bottoms, alluvial floodplain and terrace deposits are present. The alluvial floodplain deposits consist primarily of rounded gravel, sand, silt, and clay. The alluvial terrace deposits form flat benches and consist primarily of rounded cobbles to pebbles with minor amounts of sand and silt (Lopez, 2000). These terraces typically range from 6 to 18 m (20 to 60 ft) in thickness. Numerous abandoned river channels were observed in the floodplain of the Clarks Fork Yellowstone River along the existing alignment. These abandoned channels may be filled in with soft, fine-grained sediments. Settlement in these areas might be a possible geotechnical concern.

3.21.3 Soils

3.21.3.1 Yellowstone County

The major soils in Yellowstone County underlying potential highway alignments differ depending on landscape position. Soils in the Clarks Fork Yellowstone River valley are dominated by clay loam to sandy clay loam soils (USDA, Soil Conservation Service [SCS], 1972). Permeability of the deep, well-drained soils is slow to moderately slow, and the risk of runoff is low. Erosion ranges from slight to moderate (wind erosion). The clay loam-dominated soils are generally favorable for highway construction. The sandy clay loam soils are less favorable due to low compressibility and moderate shrink-swell and frost-action potential. Soils on the bench are dominated by loamy fine sand. These deep, excessively drained soils have rapid permeability. They are highly susceptible to wind-blown erosion. The major soil on the bench is generally favorable for highway construction, except there is a high risk of erosion on exposed cut slopes.

3.21.3.2 Carbon County

Soils in the Clarks Fork Yellowstone River valley underlying potential highway alignments are dominated by clay loam soils to silty clay loam soils (SCS, 1975). Runoff in these deep, well-drained soils is slow to medium, permeability is slow to moderate, and erosion potential is slight. Factors affecting highway construction include a high frost-action potential and moderate shrink-swell potential. Soils on the west bench through which potential highway alignments would pass are dominated by fine sandy loams on top and clay loams to silty clay loams on the breaks. Runoff in the relatively level, deep, well-drained fine sandy loam soils on top is slow, permeability is moderate to moderately rapid, and erosion potential is slight. Highway construction is generally favorable, but some soils have a moderate frost action potential. As the slope increases and soils change to clay loams and silty clay loams, the soils become shallow, runoff increases to rapid, and erosion potential increases to moderate. These soils are also less favorable for highway construction, as they are less than 51-cm (20-in)-deep over shale, are highly erodible, and have slopes from 15 percent to more than 25 percent.

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CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This environmental consequences chapter analyzes potential social, economic, and environmental impacts of the alternatives considered against the existing baseline following NEPA as implemented for federally funded projects (42 USC 4321 et seq.) and MEPA (MCA 75-1-101 et seq.). Measures proposed to mitigate adverse impacts are also described. This chapter provides the analytical basis for evaluating the comparative merits of the alternatives. The following alternatives were analyzed:

- No Build Alternative
- Alternative 1—Far West Bench
- Alternative 2—Near West Bench
- Alternative 3A—Near Existing Alignment
- Alternative 3B—Near Existing Alignment
- Alternative 5A—Combined West Bench
- Alternative 5B—Combined West Bench (Preferred)

FHWA and MDT propose Alternative 5B as the Preferred Alternative.

This chapter is organized into the following sections:

- Land Use
- Farmlands
- Social Conditions
- Transportation Right-of-Way and Relocations
- Economic Conditions
- Environmental Justice
- Pedestrian and Bicycle Considerations
- Air Quality
- Noise
- Water Flow and Quality
- Wetlands
- Water Bodies and Aquatic Resources
- Vegetation
- Wildlife Resources
- Threatened and Endangered Species and State Species of Concern
- Floodplains
- Cultural Resources
- Hazardous Materials
- Visual Resources
- Energy Consumption
- Geology and Soils
- Construction Impacts Related to the Proposed Project
- Local Short-Term Uses and Long-Term Productivity

- Irreversible and Irretrievable Commitments of Resources
- Cumulative Impacts
- Major Unresolved Issues

To evaluate environmental consequences, an 80-m (260-ft)-wide impact area (Figure 2-7) was used for the build alternatives to capture the majority of the construction limits needed. The width is based on the 11-meter Median Typical Section (100-ft Section) described in *Section 2.2.2.1, 11-meter Median Typical Section*. Except in isolated areas of large cuts or fills, the proposed roadway would be within this impact area or footprint. In places where the proposed roadway might be beyond the footprint, construction limits were identified on an individual basis. It should be noted that potential impacts were estimated based on the conceptual (approximately 30 percent) design that is available at this early stage of the design process. As the design process continues and as additional avoidance, minimization, and mitigation strategies are evaluated, potential impacts may change slightly.

When all build alternatives within a particular resource area have the same impacts and proposed mitigation measures, those impacts, indirect effects, and mitigation measures are described before specific impacts and mitigation measures for individual build alternatives are discussed.

Note that the effects on each of the resources during the construction phases of the proposed project are discussed separately in *Section 4.22, Construction Impacts Related to the Proposed Project.* In addition, local short-term uses and long-term productivity; irreversible and irretrievable commitments of resources; cumulative impacts; and major unresolved issues are discussed in *Sections 4.23*, *4.24*, *4.25*, and *4.26*, respectively.

4.1 Land Use

The following sections discuss the consistency of the alternatives with respect to the plans, policies, and goals of the growth policies developed by Carbon County (2003), Yellowstone County (2003), and the City of Laurel (2004).

4.1.1 No Build Alternative

The No Build Alternative would be consistent with the land use policies of the City of Laurel (2004) and Yellowstone County (2003) since it would not impact the Yellowstone River or convert NRCS-classified suitable farmlands. However, the current alignment would not meet the transportation or economic goals of Yellowstone County and would not provide aesthetic value to the City of Laurel. The No Build Alternative would be consistent with the *Carbon County Montana Growth Policy* (2003) since the existing alignment would not convert NRCS-classified suitable farmlands and would preserve open spaces.

The No Build Alternative would not be consistent with the transportation policies of Yellowstone and Carbon counties since it would not improve the transportation infrastructure or increase highway safety. The current highway system would not meet the traffic demands expected in the outlying areas of Yellowstone and Carbon counties.

4.1.1.1 Indirect Effects

Indirect effects on land uses are not expected with the No Build Alternative.

4.1.1.2 Mitigation

No land use mitigation measures are proposed for the No Build Alternative.

4.1.2 Build Alternatives

Regardless of whether the proposed project is constructed, the project area is expected to grow as it becomes a bedroom community to Laurel and Billings and more vacation homes are constructed (McGann, pers. comm., 2001; City of Laurel, 2004). It is not known exactly how or where that growth would occur because an area's growth depends on such factors as the availability of jobs, the quality of life, property taxes, and the quality and availability of schools and other public services. Growth and development are also influenced by a complex interaction of natural and built environments, economic conditions, and individual perceptions.

If the proposed build alternatives were implemented, some land would be permanently incorporated into the transportation system. Some dryland and irrigated farmland, open or natural land, and rangeland would be impacted. Approximate land use impacts are quantified in Tables S-3 and 2-11 and further discussed in *Section 4.2, Farmlands.*

The Grant Administrator for the L&WCF was consulted to determine if potential effects to parks covered under Section 6(f)(3) of the L&WCF Act (Public Law 88-578, as amended) would result from implementation of the proposed alternatives (Timmerman, pers. comm., 2008). The only Section 6(f) park in the project vicinity is Laurel Riverside Park, approximately 0.4 mile north of the project's north end. There would be no impacts to Riverside Park.

4.1.2.1 Indirect Effects

It is important to recognize that the effects of transportation in facilitating physical development are not necessarily the same as its effects on economic growth. If a region is growing economically, development will occur somewhere within or near it. Combined with the effects of land use and zoning policies, which are controlled by each local jurisdiction, transportation investments may influence the ***location*** of growth, but they alone do not ***cause*** the growth. For example, commercial development may be more attractive around a new corridor than farming, and the proposed project may facilitate access to future development, as discussed in more detail in *Section 4.4.2.1, Indirect Effects*, and *Section 4.5.2.3, Indirect Effects*.

The current growth trend in the project area is anticipated to continue regardless of any improvements to US 212. Improving LOS in these corridors is not anticipated to induce growth; rather, it would maintain and improve access for residents, commercial traffic, and regional users.

Research compiled by the TRB indicates that transportation variables are no more critical to location decisions than such factors as housing type, size, and cost, as well as real or perceived differences in neighborhood characteristics such as crime rates and the quality of schools. Moreover, lifestyle and life-cycle variations have been found to be equally important as (and in some cases much more important than) transportation determinants of location and land use choices.

The proposed project has been designed to address existing and projected demands that would occur independent of the project. As discussed above, the proposed project will not likely increase the overall rate of growth in the project area, but it may affect the location or timing of when growth would occur. It is anticipated that future residential growth will mostly likely occur along the proposed project area. With the anticipation of residential housing, there is the potential for future commercial development.

4.1.2.2 Mitigation

Where appropriate, local growth policies would be integrated into the strategies for managing access (see *Section 2.2.3.2, General Access Management*). Implementation of access management within the project corridor might result in relocating, combining, or eliminating some existing access points if alternate access points were available or could be provided. However, access management would not be used to prohibit the development of private property.

4.1.2.3 Alternative 1—Far West Bench

Alternative 1 would generally comply with the objectives in the *Carbon County Montana Growth Policy* (2003). While this alternative would promote preservation of Farmland of Statewide Importance, it would not avoid development of agricultural lands or preserve open space. The alignment would provide more opportunities for development in currently unpopulated areas and increase the need for fire, water, and public services. Alternative 1 would meet several Yellowstone County goals. By providing a route along the Yellowstone River, Alternative 1 would be consistent with the policies by providing aesthetics, promoting open space, and increasing safety elements.

Alternative 1 would be generally compliant with the land use policies of the City of Laurel, which are applicable to the northernmost portion of the project area, by improving the transportation system, maintaining quality residential development, and creating economic opportunities along the new alignment.

4.1.2.4 Alternative 2—Near West Bench

Alternative 2 would be generally non-compliant with the goals of the *Carbon County Montana Growth Policy* (2003). Of the build alternatives, this alternative would have the most impacts on NRCS-classified suitable farmlands and open lands. Alternative 2 would have the highest number of crossings of the historical features of the Free Silver Ditch, would consume the best agricultural lands, and would provide more opportunities for growth outside of populated areas.

Related to the Yellowstone County Growth Policy, Alternative 2 would be the least compliant of the build alternatives. Alternative 2 would result in double frontage for many properties

situated between the proposed alignment and the existing roadway, which would cause several safety concerns and provide opportunities for developing residential subdivisions outside of incorporated areas.

Alternative 2 would be fairly consistent with the land use policies of the City of Laurel as described for Alternative 1.

4.1.2.5 Alternative 3A—Near Existing Alignment

Alternative 3A would be generally compliant with the *Carbon County Montana Growth Policy* (2003). The alignment would cross some parcels close to the existing alignment and would impact several irrigated farmland parcels in unpopulated areas in the southern portion of the alignment.

Except for the objective regarding the preservation of open space, the inconsistencies with the *Carbon County Montana Growth Policy* (2003) objectives for Alternative 3A would be similar to those described for Alternative 2. By following the existing US 212 alignment, Alternative 3A would promote preservation of open space.

Alternative 3A would be generally consistent with the land use policies of the City of Laurel as described for Alternative 1. Alternatives 3A and 3B would parallel the existing US 212 alignment. The impacts of Alternatives 3A and 3B would be similar to those for the existing alignment related to traffic and land uses as addressed by the City of Laurel policies.

4.1.2.6 Alternative 3B—Near Existing Alignment

Because Alternative 3B would most closely follow the existing highway alignment, the impacts to irrigated farmland parcels caused by the alignment of Alternative 3B in Carbon County would be less than those for Alternative 3A. All other land use impacts would be the same as those described for Alternative 3A.

4.1.2.7 Alternative 5A—Combined West Bench

Alternative 5A would be generally consistent with the *Carbon County Montana Growth Policy* (2003). The Alternative 5A alignment would promote preservation of open space but would not avoid impacts to NRCS-classified suitable farmlands or agricultural lands. Alternative 5A would impact more irrigated farmland parcels than the other build alternatives because of the access spur to the existing highway alignment in the southern section, which would impact several farm fields. Alternative 5A would also provide increased opportunities for growth outside of incorporated areas.

Alternative 5A would meet several Yellowstone County goals. By providing a route along the Yellowstone River, Alternative 5A would be consistent with the policies by providing aesthetics, promoting open space, and increasing safety elements.

Alternative 5A would follow the same alignment through Yellowstone County and the City of Laurel as Alternative 1. (Refer to *Section 4.1.2.3, Alternative 1—Far West Bench*.)

4.1.2.8 Alternative 5B—Combined West Bench (Preferred)

Because of their similarities, the consistency of Alternative 5B (preferred) with respect to land use policies would be similar to that described for Alternative 5A. The magnitude of the number of acres of Farmland of Statewide Importance impacted would be less than for Alternatives 2 or 5A.

4.2 Farmlands

4.2.1 No Build Alternative

Since additional rights-of-way would not be acquired, farmland resources would not be impacted with the No Build Alternative.

4.2.1.1 Indirect Effects

Indirect effects on farmland resources are not expected with the No Build Alternative.

4.2.1.2 Mitigation

No farmland resource mitigation measures are proposed for the No Build Alternative.

4.2.2 Build Alternatives

The Farmland Protection Policy Act requires federal agencies involved in projects that convert farmland to complete a USDA Farmland Conversion Impact Rating Form for Corridor Type Projects (NRCS-CPA-106). The completed NRCS-CPA-106 forms are included in *Appendix C*. The USDA recommends that sites (project alternatives) with scores totaling 160 points or greater (out of 260 points) be given increasingly higher levels of consideration for protection. The farmland impact rating scores for all the alternatives were less than 160 points. The analysis suggests that, based on USDA's recommendation, the Preferred Alternative would be given a minimal level of protection and no additional evaluations would be necessary.

The build alternatives would displace varying amounts of agricultural land. That is, the land would be acquired for right-of-way use, which would convert it from agricultural use. Figure 3-2 illustrates the location of the farmland in the project area based on the farmland classification system developed by the NRCS. Table 4-1 summarizes the amount of Prime if Irrigated Farmland and Farmland of Statewide Importance (that is, NRCS-classified suitable farmland) that would be displaced. That table also provides information about the amount of irrigated agricultural habitat (including pasture/alfalfa) and dryland agricultural habitat (including pasture) that would be displaced. Total irrigated and dryland agriculture acres differ from the NRCS-classified farmlands because the soil types do not dictate the land uses and all suitable farmlands are not in production. The project would not affect the ability of current users of irrigation facilities to continue to use their facilities.

The amount of agricultural land displaced by rights-of-way would be specific to each build alternative, as noted in Table 4-1. Alternative 2 would convert the highest number of acres of NRCS-classified suitable farmland from agricultural to right-of-way use, largely because the alignment would travel for a greater distance within the river valley (where farmland is the primary use). Alternatives 1 and 3A would have the least impacts to NRCS-classified suitable farmlands. Alternative 1 would impact the fewest acres of Farmland of Statewide Importance but would affect more total irrigated and dryland agricultural habitat, displacing the most overall acreage of agricultural lands. Alternatives 1, 3A, 3B, and 5B (preferred) would have the least impacts on Farmland of Statewide Importance while creating a new alignment and are within 1 percent of each other.

4.2.2.1 Indirect Effects

The proposed project might indirectly affect farmland resources by decreasing total crop production on those lands displaced by a specific alternative. Patterns of land use might also be modified by a specific build alternative.

TABLE 4-1
Projected Amount of Agricultural Land Displaced by Rights-of-Way for the Alternatives*

Type of Agricultural Land	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Prime if Irrigated Farmland	54.00 ha (133.44 ac)	43.17 ha (106.68 ac)	41.79 ha (103.27 ac)	57.67 ha (142.50 ac)	54.48 ha (134.61 ac)	66.05 ha (163.22 ac)
Farmland of Statewide Importance	33.60 ha (83.03 ac)	64.99 ha (160.60 ac)	34.01 ha (84.03 ac)	34.76 ha (85.90 ac)	49.20 ha (121.57 ac)	34.00 ha (84.01 ac)
Total NRCS-classified suitable farmland	**87.60 ha (216.47 ac)**	**108.17 ha (267.28 ac)**	**75.80 ha (187.30 ac)**	**92.43 ha (228.40 ac)**	**103.67 ha (256.18 ac)**	**100.05 ha (247.23 ac)**
Irrigated agricultural habitat (including pasture/alfalfa)	28.00 ha (69.20 ac)	21.16 ha (52.28 ac)	46.83 ha (115.72 ac)	29.20 ha (72.16 ac)	38.36 ha (94.78 ac)	35.12 ha (86.78 ac)
Dryland agricultural habitat (including pasture)	61.53 ha (152.05 ac)	44.40 ha (109.72 ac)	0 ha	0 ha	39.21 ha (96.90 ac)	45.57 ha (112.60 ac)
Total irrigated and dryland agricultural habitat	**89.54 ha (221.25 ac)**	**65.56 ha (162.00 ac)**	**46.83 ha (115.72 ac)**	**29.20 ha (72.16 ac)**	**77.57 ha (191.68 ac)**	**80.69 ha (199.38 ac)**

*These values are based on preliminary (approximately 30 percent) design and may change as the design process continues.

4.2.2.2 Mitigation

Irrigation facilities impacted by the highway right-of-way would be moved to a location outside the right-of-way in such a manner to allow facilities to continue to operate.

4.3 Social Conditions

Social conditions consist of such things as community characteristics; public services; parks and recreation opportunities; and transportation patterns and safety.

4.3.1 No Build Alternative

The existing US 212 would remain at LOS E. However, as populations and traffic volumes grow, there would be increased levels of delay and driver frustration (because drivers would often be unable to pass or maintain safe and acceptable operating speeds). In addition, highway safety problems would increase. (See *Section 2.3.1, No Build Alternative*.)

4.3.1.1 Indirect Effects

The No Build Alternative might indirectly affect social conditions by increasing congestion on and along the current highway route as the patterns of use along the PTW increase. Public services such as emergency services might be altered by the expected future congestion. It is not expected that the No Build Alternative would indirectly affect either community characteristics or parks and recreation opportunities.

4.3.1.2 Mitigation

No social condition mitigation measures are proposed for the No Build Alternative.

4.3.2 Build Alternatives

The build alternatives would improve LOS, alleviate some highway safety problems, and restrict access to the highway. (See *Section 2.3.2, Build Alternatives.*)

4.3.2.1 Indirect Effects

Indirect effects from the proposed project might affect community characteristics by improving traffic patterns, safety, and emergency response of public services. The proposed project is not expected to indirectly affect parks and recreation opportunities.

4.3.2.2 Mitigation

Strategies for managing access (see *Section 2.2.3.2, General Access Management*) would be used to handle specific impacts related to accessing US 212.

4.4 Transportation Right-of-Way and Relocations

4.4.1 No Build Alternative

Rights-of-way would not be acquired, so private property would not be displaced with the No Build Alternative.

4.4.1.1 Indirect Effects

Indirect effects related to transportation rights-of-way are not expected with the No Build Alternative.

4.4.1.2 Mitigation

No transportation right-of-way and relocation mitigation measures are proposed for the No Build Alternative.

4.4.2 Build Alternatives

The build alternatives would require the acquisition of rights-of-way and potential relocation of residences and businesses displaced by the new alignment. Table 4-2 summarizes projected property displacement and right-of-way impacts for each alternative. The displacement and right-of-way impact information was used to assess the consequences for each of the alternatives.

TABLE 4-2
Summary of Projected Relocations and Right-of-Way Impacts by Alternative[a]

New Transportation Right-of-Way and Relocations	No Build Alt.	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Number of houses impacted	0	2	11	12[b]	11[c]	2	5
Number of farmsteads impacted	0	2	1	2	3	2	2
Number of businesses impacted	0	0	0	2[d]	1[e]	0	0
Area of new right-of-way in hectares (acres)	0	178 ha (440 ac)	138 ha (341 ac)	168 ha (415 ac)	130 ha (321 ac)	147 ha (363 ac)	154 ha (381 ac)
Number of affected parcels	0	34	61	54	50	39	37

[a]These values are based on preliminary (approximately 30 percent) design and may change as the design process continues.

[b]Three of the residences might not be affected depending on corridor width.

[c]One of these residences might not be affected depending on corridor width.

[d]Yellowstone Valley Electric Co-Op electrical substation in Silesia and Adkins Tractor Parts and Sales.

[e]Yellowstone Valley Electric Co-Op electrical substation in Silesia.

It is unknown whether displaced residents and businesses would rather relocate in the same general area along the project corridor or move out of the area. Some businesses might choose to close rather than relocate.

The build alternatives would require additional rights-of-way and would displace private property.

4.4.2.1 Indirect Effects

Indirect effects of the proposed project might include the potential modification of land use patterns around lands acquired for the selected build alternative. For example, commercial development might be more attractive around a new corridor than farming; however, change of land use patterns is primarily controlled by the land use planning agencies and zoning laws.

4.4.2.2 Mitigation

The acquisition of land or improvements for highway construction is governed by state and federal laws and regulations designed to protect both the landowners and the taxpaying public. Affected landowners would be entitled to receive fair market value for land or buildings acquired and damages to remaining land due to the effects of highway construction.

The proposed project would be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended, 42 USC 4601, et. seq.) and the Uniform Relocations Act Amendments of 1987 (Public Law 100-17). No additional transportation right-of-way and relocation mitigation measures are proposed for the build alternatives.

4.4.2.3 Alternative 1—Far West Bench

Alternative 1 would require the displacement of two houses, as well as a small barn, a corral, a shop, and a shed on one family farm and the displacement of a grain silo on another family farm (Table 4-2).

4.4.2.4 Alternative 2—Near West Bench

Alternative 2 would pass through the Rio Vista subdivision and through Country View Estates. It would displace 11 residences, including two houses on one family farm, as well as a small barn, a corral, a shop, and a shed on that farm (Table 4-2). This alternative also passes through the Gunstock subdivision, which has not been final platted and where no construction has taken place.

4.4.2.5 Alternative 3A—Near Existing Alignment

Alternative 3A would require the displacement of 12 residences, 2 businesses, and the house and outbuildings on 2 family farms. (Note that, since some houses function both as a residence and as a family farm, they are counted in both categories.) The two displaced businesses are Adkins Tractor Parts and Sales and the electrical substation in Silesia owned by the Yellowstone Valley Electric Co-Op (Table 4-2). Although the right-of-way would displace the tractor business's sales lot, buildings would not be displaced. This alternative also passes through the Hughes Orchard subdivision, which has not been final platted and where no construction has taken place.

4.4.2.6 Alternative 3B—Near Existing Alignment

Alternative 3B would displace 11 residences, 1 business, and the house and outbuildings on 3 family farms. The electrical substation in Silesia owned by the Yellowstone Valley Electric Co-Op would be the only business displaced by this alternative (Table 4-2).

4.4.2.7 Alternative 5A—Combined West Bench

Alternative 5A would displace two residences, one of which is a house on a family farm. That farm's outbuildings would also be displaced. A grain silo would be displaced on another family farm. No businesses would be displaced by this alignment (Table 4-2).

4.4.2.8 Alternative 5B—Combined West Bench (Preferred)

Alternative 5B (preferred) would displace five residences, one of which is a house on a family farm. That farm's outbuildings would also be displaced. A grain silo would be displaced on another family farm. No businesses would be displaced by this alignment (Table 4-2). This alternative also passes through the Hughes Orchard subdivision, which has not been final platted and where no construction has taken place.

4.5 Economic Conditions

4.5.1 No Build Alternative

It is not anticipated that property tax revenues would decrease (a negative impact) with the No Build Alternative (Table 4-3). Patronage of local businesses would be expected to increase under the No Build Alternative as traffic increases on US 212, with or without the proposed project.

4.5.1.1 Indirect Effects

Indirect effects on economic conditions are not expected with the No Build Alternative.

4.5.1.2 Mitigation

No economic condition mitigation measures are proposed for the No Build Alternative. As local and through-traffic volumes increase with population growth, proportional increases in roadside business activity would be expected.

TABLE 4-3
Estimated Annual Loss of Property Tax Revenue from Displaced Residential and Business Property*

Alternative	Carbon County Property Tax Loss	Yellowstone County Property Tax Loss	Total Tax Loss
No Build Alternative	$0	$0	$0
Alternative 1	$0	$2,300	$2,300
Alternative 2	$0	$2,300	$2,300
Alternative 3A	$1,860	$8,300	$10,160
Alternative 3B	$2,400	$8,300	$10,700
Alternative 5A	$8,123	$744	$8,867
Alternative 5B (Preferred)	$10,019	$744	$10,763

*Does not include right-of-way take of agricultural and ranching land.
Source: 2000 Tax Records for Carbon and Yellowstone counties.

4.5.2 Build Alternatives

4.5.2.1 Regional Impacts

Reviews of regional economic data and conversations with county planners indicate the potential for minor positive impacts on the regional economy as a direct result of the proposed project.

The project would improve the region's transportation infrastructure. According to the Economic Development Coordinator for the Beartooth Resource Conservation and Development (RC&D) Area, the new highway could encourage more tourist traffic through the area, especially in the summer months, and would provide easier access into Carbon County (Kaiserski, pers. comm., 2001). (The Beartooth RC&D, in partnership with the NRCS and the Economic Development Administration, assists rural economies in a five-county area that includes Carbon and Yellowstone counties.) This statement is supported by the *Beartooth RC&D Area Plan and Overall Economic Development Program* (Beartooth RC&D, 1995), which identifies that a high percentage of visitors pass through this area to Yellowstone National Park and surrounding outdoor attractions, and that a well-maintained road system would continue to funnel tourism-related services and dollars to communities along these routes. As traffic continues to grow, more refueling stops and restaurants might be added.

4.5.2.2 Local Impacts

Rockvale, Laurel, and the businesses along US 212 would continue to receive tourism traffic heading to and from the Beartooth Highway, which accesses the northeast entrance of Yellowstone National Park. Because overall traffic is expected to increase on US 212, it is anticipated that patronage of local businesses would also increase.

4.5.2.3 Indirect Effects

The selection of a specific alternative alignment would influence where new tourism-related or other businesses might locate along the route of the proposed project. Due to the complexity of the many factors that influence growth, it is impossible to predict exactly where and when this growth would occur.

While economic plans support growth, county planning documents (as described in *Section 3.1.4, Applicable Land Use Policies*) focus on managing growth while limiting impacts on the farming community. The build alternatives would encourage continued conversion of historically farming and ranching properties into other economic uses, such as residential and commercial development.

The proposed project might facilitate access to future development, making residential and commercial growth more appealing, but it would not be the cause of such growth. The project area is becoming a bedroom community to Laurel and Billings. In addition, it is a preferred location for second homes and vacation properties. Growth of this area is more likely dependent on such factors as the availability of jobs; the quality of life; property taxes; and the quality and availability of schools and other public services than on the reconstruction of US 212. Residences and commercial properties will continue to be built whether or not the proposed project is constructed.

Secondary and cumulative commercial and residential development would likely occur at the north and south ends of the project area, where the new US 212 would intersect with the existing US 212 and US 310, and at railroad crossings that would be controlled access points to the new alignment. *Appendix A* illustrates these intersection locations, which include intersections of US 212 with:

- The PTW (Figures A-5a, A-5b, A-5c, A-5d, A-7, A-11, A-13, A-15, A-17, and A-18)
- US 310 (Figures A-1, A-6, and A-12)
- The railroad crossings at RP 47.9 (Figure A-19), at RP 48.9 (Figure A-20), at RP 50.2 (Figure A-21), and at Byam Road (Figure A-22)

As the population in the area grows, it is likely that farmlands and ranchlands near the intersections of US 212 with county and state roads would be targeted for residential and commercial development, including intersections of US 212 with:

- Farewell Road (Figures A-2, A-8, A-14, and A-16)
- White Horse Bench Road (Figure A-3)
- North White Horse Bench Road (Figures A-4 and A-10)
- South White Horse Bench Road (Figure A-9)

The residential and commercial development might positively impact the local economy. However, such development might require zoning changes and deter from the established county growth policies.

Table 4-4 summarizes the economic impacts for each alternative and Table 4-5 provides information about the impacts to specific businesses. Figure 4-1 shows the locations of businesses potentially impacted by the build alternatives.

4.5.2.4 Mitigation

No economic condition mitigation measures are proposed for the build alternatives.

4.5.2.5 Alternative 1—Far West Bench

The economic impacts related to Alternative 1 include a minor loss of property tax revenues to Yellowstone County by right-of-way acquisition (Tables 4-3 and 4-4) and a potential reduction in the number of patrons to four roadside businesses within the project area that rely on seasonal travelers (Table 4-5 and Figure 4-1).

With Alternative 1, potential "through traffic" patrons would no longer pass by the three restaurants and one convenience store (listed in Table 4-5) that rely on seasonal travelers for a significant portion of their business. "Through" travelers would lose convenient access to these businesses. However, local patrons would still be able to access the businesses from the PTW. Because access to the business would be less convenient to travelers, the Quick Stop Drive In, which is only open during the summer tourist season, would be most vulnerable to losing revenue.

The PTW would become a local collector route in the northern portion of its alignment. With the removal of high-speed traffic from the PTW, residential development would be more enticing, which might potentially increase property values within the area.

TABLE 4-4
Summary of Projected Economic Impacts[a]

Economic Impacts	No Build Alt.	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Regional	Minor improvement	Minor improvement	Minor improvement	Minor improvement	Minor improvement	Minor improvement	Minor improvement
Local							
Number of farmsteads impacted	No change	1	1	2	3	1	1
Number of other businesses displaced	No change	0	0	2[b]	1[c]	0	0
Loss in property tax	No change	$2,300	$2,300	$10,160	$10,700	$8,867	$10,763
Number of local businesses with a potential decline in patronage	No change	4	1	4	0	1	1
New business opportunities	From traffic growth	High	Moderate	Low	Moderate	Moderate	Moderate

[a] These values are based on preliminary (approximately 30 percent) design and may change as the design process continues.

[b] Yellowstone Valley Electric Co-Op electrical substation in Silesia and Adkins Tractor Parts and Sales.

[c] Yellowstone Valley Electric Co-Op electrical substation in Silesia.

Property tax losses were not calculated for the four businesses. These businesses might continue to operate at their present locations, serving travelers (who could access the businesses via nearby intersections) and continuing to serve local patrons (Table 4-4).

The four businesses maintain a work force of approximately 38 to 43 employees. A decline in patronage caused by less convenient access by travelers to the four businesses might reduce their work force.

The loss of a farm homestead and outbuildings would not appear to decrease the viability of the farm because the owner of the farm would be compensated for the loss and could construct replacement buildings, if desired.

TABLE 4-5
Summary of Projected Impacts to Businesses in the Project Area[a]

Type of Business	Business Name	Alternative	Number of Employees	Impact
Family farm	NA	1, 5A, 5B (Preferred)	3	Displace grain silo
Tractor sales and repair	Adkins Tractor Parts and Sales	3A	7	Displace sales lot
Electrical substation	Yellowstone Valley Electric Co-Op	3A, 3B	NA	Displace electrical substation
Family farm	NA	1, 2, 3A, 3B, 5A, 5B (Preferred)	2	Displace two houses, small barn, corral, shop, shed
Family farm	NA	3A, 3B	2	Displace house and outbuildings
Family farm	NA	3B	2	Displace house and outbuildings
Restaurant	El Rancho Inn	1, 2, 3A, 5A, 5B (Preferred)	6	All but Alt. 3B reroute "through traffic" away from business
Restaurant[b]	Fort Rockvale Restaurant and Lounge	1, 3A	27	Alts. 1 and 3A: reroute "through traffic" away from business
Restaurant[b] Seasonal: closed in fall/winter	Quick Stop Drive In	1, 3A	1-4	Alts. 1 and 3A: reroute "through traffic" away from business
Convenience store/gas[b]	Rockvale Travel Plaza	1, 3A	4	Alts. 1 and 3A: reroute "through traffic" away from business

[a]These values are based on preliminary (approximately 30 percent) design and may change as the design process continues.

[b]Would use US 310 junction to access business, but the business would likely experience a reduction in "through traffic" patronage from loss of roadside convenience.

Notes: NA = not applicable

If allowed by local land use policies, commercial growth would likely occur over time near the intersection of the new US 212 with the PTW. (See *Appendix A*, Figures A-5a through A-5d for intersection alternatives.) It is also likely that commercial growth would occur at the junction of US 212 and US 310. Some landowners might seek commercial and residential development

opportunities at key access points along the alignments. The rate of such development is influenced by many factors other than roads. Roads may have some impact as to the timing and location of growth. However, other factors, such as general economic conditions, interest rates, preferred locations in town, and zoning and development trends, are the driving issues that influence the growth rate in a community. In addition to the intersections mentioned above, residential and commercial growth would likely occur over time near the US 212 intersections with the county roads, as these would be the main public access points on and off the new highway. The locations for potential growth include the intersections of US 212 with Farewell Road (*Appendix A*, Figure A-2), White Horse Bench Road (*Appendix A*, Figure A-3), and North White Horse Bench Road (*Appendix A*, Figure A-4).

4.5.2.6 Alternative 2—Near West Bench

The economic impacts related to Alternative 2 include a minor loss of property tax revenue to Yellowstone County by right-of-way acquisition (Tables 4-3 and 4-4). The new roadway would be moved approximately 1.1 km (0.7 mi) west of Silesia and the El Rancho Inn (Figure 4-1), potentially reducing the number of patrons of the restaurant (Table 4-5).

The PTW would become a local collector route in the northern portion of its alignment. With the removal of high-speed traffic from the PTW, residential development would be more enticing, which might potentially increase property values within the area.

If allowed by local land use policies, commercial growth would likely occur over time at the junction of the new US 212 with US 310 (*Appendix A*, Figure A-6) and with the PTW (*Appendix A*, Figure A-7). Some landowners might seek commercial and residential development opportunities at key access points along the alignments. The rate of such development is influenced by many factors other than roads. Roads may have some impact as to the timing and location of growth. However, other factors, such as general economic conditions, interest rates, preferred locations in town, and zoning and development trends, are the driving issues that influence the growth rate in a community. In addition to the intersections mentioned above, residential and commercial growth would likely occur over time near the following intersections with US 212 that would provide public access: at Farewell Road (*Appendix A*, Figure A-8), at South White Horse Bench Road (*Appendix A*, Figure A-9), and at North White Horse Bench Road (*Appendix A*, Figure A-10).

4.5.2.7 Alternative 3A—Near Existing Alignment

The economic impacts related to Alternative 3A include a minor loss of property tax revenues to Carbon and Yellowstone counties (Tables 4-3 and 4-4). Service-oriented businesses in Rockvale would continue to provide service to tourists and other travelers on the realigned US 212. Even though the Rockvale businesses would no longer be on the main route, they would be near enough (120 m [394 ft] from the proposed intersection) to service travelers on the new US 212 alignment.

In Silesia, with Alternative 3A, the new alignment would shift 0.5 km (0.3 mi) west of the El Rancho Inn (Figure 4-1). Since this restaurant would no longer be as convenient for travelers to access, it might experience a decline in patronage. However, convenient service from the PTW would still be provided to local patrons.

T102005002BOI Fig4-1BusinessLocations 02-13-2007

LEGEND:

- Business Location

ALTERNATIVE ALIGNMENTS

- 1 Far West Bench Alternative
- 2 Near West Bench Alternative
- 3 Near Existing Alignment Alternative (A & B)
- 5 Combined West Bench Alternative (A & B)

Laurel

RP53

RP52

RP51

RP50

RP49

RP48

RP47

RP46

RP45

RP44

RP43

RP42

Yellowstone Valley Electric Co-Op

El Rancho Inn

Klamert Railroad Salvage

Quick Stop Drive In

Rockvale Travel Plaza

Fort Rockvale Restaurant and Lounge

Adkins Tractor Parts & Sales

0 200 400 600 800 METERS

N

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 4-1
POTENTIALLY IMPACTED BUSINESS LOCATIONS

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With Alternative 3A, based on 2000 tax records, Carbon and Yellowstone counties, combined, would lose annual property tax revenues of approximately $10,160 by right-of-way acquisition (assuming a total loss of property) (Tables 4-3 and 4-4).

If allowed by local land use policies, there would be future business opportunities at new proposed intersections. As residential development and tourism expand, service-oriented businesses such as gas stations, convenience stores, and restaurants might be developed. Over time, these secondary business developments might compete with the two existing restaurants and the convenience store in Rockvale and with the restaurant in Silesia.

If allowed by local land use policies, commercial growth would likely occur over time near the intersection of the new US 212 with US 310 (*Appendix A*, Figure A-12) and with the PTW (*Appendix A*, Figure A-13). Some landowners might seek commercial and residential development opportunities at key access points along the alignments. The rate of such development is influenced by many factors other than roads. Roads may have some impact as to the timing and location of growth. However, other factors, such as general economic conditions, interest rates, preferred locations in town, and zoning and development trends, are the driving issues that influence the growth rate in a community. In addition to the intersections mentioned above, residential and commercial growth would likely occur over time near the following intersections with US 212 that would provide public access: at Farewell Road (*Appendix A*, Figure A-14), at the railroad crossing to a subdivision at RP 48.9 (*Appendix A*, Figure A-20), and at the railroad crossing at Byam Road (*Appendix A*, Figure A-22).

4.5.2.8 Alternative 3B—Near Existing Alignment

Economic impacts related to Alternative 3B would be similar to those for Alternative 3A except that the Alternative 3B alignment would be closer to the El Rancho Inn in Silesia. Therefore, this restaurant would be less likely to lose “through traffic” patronage. Also, since Alternative 3B follows the existing alignment through Rockvale, travelers would continue to have the same convenience to Rockvale businesses as with Alternative 2.

With Alternative 3B, based on 2000 tax records, Carbon and Yellowstone counties would lose annual property tax revenues of approximately $10,700 by right-of-way acquisition (assuming a total loss of property) (Tables 4-3 and 4-4).

If allowed by local land use policies, commercial growth would likely occur over time near the intersection of the new US 212 with US 310 (*Appendix A*, Figure A-6) and with the PTW (*Appendix A*, Figure A-15). Some landowners might seek commercial and residential development opportunities at key access points along the alignments. The rate of such development is influenced by many factors other than roads. Roads may have some impact as to the timing and location of growth. However, other factors, such as general economic conditions, interest rates, preferred locations in town, and zoning and development trends, are the driving issues that influence the growth rate in a community. In addition to the intersections mentioned above, residential and commercial growth would likely occur near the following intersections with US 212 that would provide public access: at Farewell Road (*Appendix A*, Figure A-16), at the railroad crossing to a subdivision at RP 48.9 (*Appendix A*, Figure A-20); and at the railroad crossing at Byam Road (*Appendix A*, Figure A-22).

4.5.2.9 Alternative 5A—Combined West Bench

The economic impacts related to Alternative 5A would be the same as those for Alternative 2. Travelers would still be able to access roadside businesses in Rockvale since the alignment through Rockvale would be the same as the PTW alignment. In Silesia, with Alternative 5A, the new alignment would shift 1.1 km (0.7 mi) west of the El Rancho Inn (Figure 4-1). This restaurant would no longer be as convenient for travelers to access, so it might experience a decline in patronage. However, convenient service would still be provided to local patrons on the PTW.

With the removal of high-speed traffic from the PTW, the existing US 212 would become a local collector route in the northern portion of its alignment and residential development would be more enticing, which might potentially increase property values within the area.

If allowed by local land use policies, commercial and residential growth would likely occur over time at the same intersection locations as with Alternative 1 except for the different southern junction of US 212 with US 310 (*Appendix A*, Figure A-6) and the intersection of US 212 with the PTW (*Appendix A*, Figure A-17). Some landowners might seek commercial and residential development opportunities at key access points along the alignments. The rate of such development is influenced by many factors other than roads. Roads may have some impact as to the timing and location of growth. However, other factors, such as general economic conditions, interest rates, preferred locations in town, and zoning and development trends, are the driving issues that influence the growth rate in a community.

4.5.2.10 Alternative 5B—Combined West Bench (Preferred)

Except for commercial growth, economic impacts related to Alternative 5B (preferred) would be the same as those for Alternative 2. Cumulative growth potential is the same as Alternative 5A except that the intersection of US 212 with the PTW (*Appendix A*, Figure A-18) would be in a different location.

4.6 Environmental Justice

4.6.1 No Build Alternative

The No Build Alternative would have no effect on minority or low-income populations.

4.6.1.1 Indirect Effects

Indirect effects related to environmental justice are not expected with the No Build Alternative.

4.6.1.2 Mitigation

No environmental justice mitigation measures are proposed for the No Build Alternative.

4.6.2 Build Alternatives

As discussed in *Section 3.6, Environmental Justice,* the Preferred Alternative would improve conditions for both minority and low-income as well as non-minority and non-low-income populations by improving mobility and access to housing, services, and employment areas. The Preferred Alternative would also reduce congestion within the study area. Improved access to new residential areas and the economic growth prompted by creation of jobs (identified in *Section 3.1, Land Use,* and *Section 3.5, Economic Conditions*) would provide additional opportunities for minorities and low-income populations.

Although U.S. Census data provide a general overview of the attributes of a large subject population, the data associated with subpopulations within the boundaries of these same areas may be diluted to such a point that the data are no longer representative of the subpopulation. To avoid such occurrences, E.O. 12898 (*Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*) requires additional analysis of any subpopulations of concern; for example, subpopulations that may not be accurately represented by the use of data at the U.S. Census scale, within an area potentially affected by the project. During data collection for other phases of the project, local residents were contacted and properties were accessed. These site evaluations noted no minority populations in the impact areas. Two of the four impacted houses associated with Alternative 5B (preferred) are in disrepair; one is abandoned and the second is occupied rent-free. One rental property, which the assessment determined was in very poor condition, might be a low-income housing unit. It was identified for relocation (Computer Assisted Mass Appraisal [CAMA] System, 2007). However, this single-family unit does not constitute a population. Other designated low-income housing units were not identified in the study area; the nearest known sites were located within the Laurel City limits (National Housing Trust, 2007). None of the available information suggests that either of the two proposed displacements would impact a low-income or minority population.

Therefore, this project would not result in disproportionately high and adverse effects on minority or low-income populations per E.O. 12898.

4.6.2.1 Indirect Effects

Indirect effects related to environmental justice are not expected with the proposed project.

4.6.2.2 Mitigation

The acquisition and relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and relocation resources are available to all relocatees without discrimination. MDT will make reasonable and feasible attempts to avoid acquiring properties or displacing residents regardless of status. Where avoidance is not reasonable or feasible, regulations would be followed to minimize impacts.

4.7 Pedestrian and Bicycle Considerations

Impacts to pedestrians and cyclists are assessed by studying the impacts to pedestrian and bicycle facilities.

4.7.1 No Build Alternative

The existing pedestrian and bicycle conditions would not be improved with the No Build Alternative. School children would continue to wait for school buses on narrow shoulders and side slopes along the PTW. Cyclists would continue to use the narrow shoulders or traffic lanes of the PTW.

4.7.1.1 Indirect Effects

The No Build Alternative might indirectly affect pedestrians and bicycles by increasing the risks of traffic-related injuries as traffic along the PTW increases.

4.7.1.2 Mitigation

No pedestrian and bicycle mitigation measures are proposed for the No Build Alternative.

4.7.2 Build Alternatives

The build alternatives would provide a 2.4-m (8-ft)-wide shoulder on the road with rumble strips. This is consistent with MDT's Rumble Strip Policy, which exceeds the AASHTO standards for this purpose. Rumble strips would help separate vehicle traffic on the roadway surface from cyclists and pedestrians using the shoulder. The proposed shoulder would yield an approximately 1.85 m (6 ft) of pathway outside the rumble strips that could be used by bicycles.

The issue of providing facilities to accommodate bicycles was raised during the public involvement process. A separate bicycle path through the project would require additional rights-of-way. Since both the public and agencies requested that new rights-of-way be kept to a minimum to avoid impacts to residences, farmlands, and natural habitats, a separate bicycle path was not included as part of the proposed project.

A bicycle and pedestrian plan for the City of Laurel was completed and adopted by the City on February 3, 2004 (Cumin, pers. comm., 2006). This plan would need to be considered in the final design of the US 212 expansion.

4.7.2.1 Indirect Effects

The proposed project might indirectly affect pedestrians and bicyclists by increasing the number of people using the developed shoulder.

4.7.2.2 Mitigation

No pedestrian and bicycle mitigation measures are proposed for the build alternatives.

4.8 Air Quality

4.8.1 No Build Alternative

The LOS with the No Build Alternative is expected to decline by 2025 as a result of population growth. If more vehicles were traveling at slower speeds, more carbon monoxide and particulates would be released into the air from traffic emissions. As traffic speed increases, re-entrained road dust becomes a larger contributor of particulate matter than traffic emissions.

4.8.1.1 Indirect Effects

Indirect effects on air quality are not expected with the No Build Alternative.

4.8.1.2 Mitigation

No air quality mitigation measures are proposed for the No Build Alternative.

4.8.2 Build Alternatives

Even though the northern part of the project corridor is near a sulfur-dioxide non-attainment area, the proposed project would not need an air quality conformity determination. Since sulfur dioxide is not a criteria pollutant for transportation conformity (40 CFR 93.102) and has not been identified by the Regional EPA Administrator or by MDEQ as a particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) precursor, an air quality conformity determination would not be required under the EPA's "Final Rule" of September 15, 1997 (62 FR 158) (EPA, 1997). Therefore, the proposed project would comply with Section 176(c) of the Clean Air Act (42 USC 7521[a]), as amended.

By 2025, the improved LOS with a four-lane road design would maintain or improve vehicle speeds even though more vehicles would be using the road. It is anticipated that the increased traffic would travel faster on a new alignment than on the PTW. Therefore, the build alternatives would decrease the rate of increase in vehicle emissions (carbon monoxide and particulates) compared to slower-moving traffic on the PTW with the No Build Alternative. However, as traffic speed increased, re-entrained road dust would become a larger contributor of particulate matter than traffic emissions. The above air quality effects are not expected to significantly deteriorate air quality in the project area.

For each alternative in this Final EIS, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the build alternatives is slightly higher than that for the No Build Alternative because of the additional distance of the

roadway. This increase in VMT could lead to higher MSAT emissions for the build alternative along the highway corridor. The emissions increase might be offset somewhat by lower MSAT emission rates because of increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected because of the inherent deficiencies of technical models.

Because the estimated VMT under each of the alternatives is similar, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from those national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

In summary, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the build alternative could be higher relative to the No Build Alternative, but this could be offset because of increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs are expected to be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

4.8.2.1 Indirect Effects

Indirect effects on air quality are not expected with the proposed project.

4.8.2.2 Mitigation

No air quality mitigation measures are proposed for the build alternatives. MDT's *Standard Specifications for Road and Bridge Construction* (MDT Standard Specifications; MDT, 2006) address dust suppression during construction and are included as mitigation measures in *Section 4.22.8, Air Quality*.

4.9 Noise

4.9.1 Noise Impact Criteria

FHWA and MDT identify noise impacts according to criteria for land uses and zoning. According to MDT's traffic noise policy (MDT, 2001), traffic noise impacts occur at residences if predicted noise levels come within 1 dB of 67 dBA (that is, 66 dBA) or if noise levels in the design year (2030) for an alternative are 13 dBA higher than the noise levels in the present year (2006) for the No Build Alternative.

4.9.2 Noise Analysis Methodology

Noise levels are discussed in terms of both measured and predicted levels. Measured levels are actual noise levels examined at different locations throughout the study area that represent a sample of noise-sensitive sites. The measured level values were used to verify the computer noise model for making noise level predictions.

The analysis in the Draft EIS was based on 2002 traffic data and receptors in the project area at that time. Traffic volume projections were updated for the years 2006 and 2030. Additional receptors were also identified for the updated analysis, increasing the number of receptors from 60 to 91, which is an increase of 31 receptors.

The FHWA-approved Traffic Noise Model, Version 2.5, predicted noise levels for the 91 noise-sensitive receptor locations along the project corridor for both 2006 and the design year (2030). Figures 2A, 2B, and 2C in *Appendix D* (Big Sky Acoustics, 2008) show the approximate receptor locations. These noise-sensitive receptor locations represent primary single residences and groups of residences that lie within 150 m (492 ft) of the existing US 212 centerline and the proposed centerline for each of the six build alternatives. The location of each receptor was based on site observations, aerial photography, and the proposed alternative alignments.

4.9.3 No Build Alternative

Forty-five of the 91 receptors analyzed were within 150 m (492 ft) of the existing alignment of US 212. Existing noise levels at 10 receptors, representing 20 residences, exceeded the noise abatement criteria (see Tables 4-6 and 4-7). By the design year (2030), growth in traffic volumes is expected to increase noise impacts at five additional receptors. Therefore, it is predicted that noise levels at 15 receptors representing 34 residences would exceed the noise impact criteria for the No Build Alternative.

TABLE 4-6
Summary of Noise-Impacted Receptors

Alternative	Total Receptors[a]	Number of Impacted Receptors/ Residences in 2030	Right-of-Way Takes
No Build Alternative	45	15/34	NA
Alternative 1	10	5/5	1
Alternative 2	34	20/34	6
Alternative 3A	41	9/12	12
Alternative 3B	40	6/7	9
Alternative 5A	16	7/9	2
Alternative 5B (Preferred)	14	5/9	2

[a]Within 150 m (492 ft) of the existing or proposed centerline.

Note: NA = not applicable

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
***Bold** denotes a value that approaches or exceeds noise impact criteria.*

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
1-R49W	2A	Residence	59	61	**68**	-	-	-	-	-
1-R52E	2A	Residence	43	-	**70**	-	-	-	-	-
1-R53E	2A	Residence	43	-	**62**	-	-	-	-	-
1-R177W	2B	Residence	54	-	**69**	-	-	-	**69**	**69**
1-R179E	2B	Residence	54	-	**73**	-	-	-	**73**	**73**
1-R225E	2C	Residence	57	59	64	**66**	-	-	64	64
1-R227W	2C	Residence	63	65	63	63	-	-	63	63
1-R230W	2C	Residence on Wilkins	59	61	62	63	64	64	61	62
1-R231E	2C	Residence	63	65	Take	Take	Take	Take	Take	Take
1-R232W	2C	Residence on Wilkins	55	57	62	64	65	65	62	62
2-R5W	2A	Residence	**67**	**70**	-	**74**	-	-	**74**	Take
2-R21W	2A	Residence	43	-	-	**74**	-	-	-	-
2-R82E	2B	Residence	48	-	-	**62**	-	-	**62**	**62**
2-101W	2B	Residence	48	-	-	**64**	-	-	-	-
2-R106E	2B	Residence	48	-	-	**63**	-	-	-	-
2-R107E	2B	Residence	48	-	-	**72**	-	-	-	-
2-R108E	2C	Residence	48	-	-	**66**	-	-	-	-
2-R109E	2C	Residence	48	-	-	60	-	-	-	-
2-R124E	2C	3 residences on Vista Lane	46	-	-	**62**	-	-	-	-

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
Bold *denotes a value that approaches or exceeds noise impact criteria.*

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
2-R126E	2C	5 residences on Vista Lane	46	-	-	**66**	-	-	-	-
2-R127W	2C	Residence	46	-	-	**65**	-	-	-	-
2-R128E	2C	Residence	46	-	-	**65**	-	-	-	-
2-R136E	2C	Residence	59	-	-	**66**	-	-	-	-
3A-R68E	2A	Residence	55	58	-	60	64	-	-	-
3A-R91E	2A	Residence	49	-	-	-	**67**	-	62	-
3A-R97W	2A	Residence	49	-	-	-	**69**	-	-	-
3A-R112W	2A	Residence under construction	49	-	-	-	Take	-	-	-
3A-R113W	2A	Represents 2 residences	49	-	-	-	59	-	-	-
3A&3B-R124E	2B	Residence	54	-	-	-	62	62	-	-
3A&3B-R146W	2B	Residence	**66**	**68**	-	-	61	61	-	-
3A&3B-R154E	2B	Residence	54	56	-	-	**69**	**69**	-	-
3A&3B-R159E	2B	Residence	55	57	-	-	**70**	**70**	-	-
3A&3B-R163W	2C	Residence	62	64	-	-	Take	Take	-	-
3A&3B-R168W	2C	Residence west of US 212	65	**67**	-	-	60	60	-	-
3A&3B-R176W	2C	Residence west of US 212	64	**66**	-	-	59	59	-	-
3A&3B-R177W	2C	Residence west of US 212	**66**	**69**	-	-	**69**	62	-	-
3A&3B-R180W	2C	Represents 4 residences west of US 212	64	**66**	-	-	61	61	-	-

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
Bold denotes a value that approaches or exceeds noise impact criteria.

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
3A&3B-R182W	2C	Residence west of US 212	62	65	-	-	62	62	-	-
3A&3B-R184W	2C	Residence west of US 212	**67**	**69**	-	-	62	62	-	-
3A&3B-R190W	2C	Residence	62	64	-	-	Take	Take	-	-
3A&3B-R191W	2C	Represents 7 residences between 3A and 3B Station Numbers 189 and 194	65	**68**	-	-	61	61	-	-
3A&3B-R193E	2C	Residence	56	58	-	-	Take	Take	-	-
3A&3B-R194W	2C	Residence	**72**	**74**	-	-	63	63	-	-
3A&3B-R195E	2C	Residence	56	58	-	-	Take	Take	-	-
3A&3B-R197W	2C	Represents 8 residences between 3A and 3B Station Numbers 194 and 199	**68**	**71**	-	-	61	61	-	-
3A&3B-R198W	2C	Residence	**72**	**74**	-	-	62	62	-	
3A&3B-R200W	2C	Represents 3 residences between 3A and 3B Station Numbers 199+50 and 201	**69**	**71**	-	-	64	64	-	-
3A&3B-R202W	2C	Represents 2 residences between 3A and 3B Station Numbers 202 and 203	**68**	**71**	-	-	62	62	-	-
3A&3B-R204E	2C	Residence	56	59	-	-	Take	Take	-	-

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
Bold denotes a value that approaches or exceeds noise impact criteria.

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
3A&3B-R207W	2C	Represents 3 residences between 3A and 3B Station Numbers 206 and 208	63	65	-	-	60	60	-	-
3A&3B-R211E	2C	Residence	56	59	-	-	Take	Take	-	-
3B-R19E	2A	Residence	59	61	-	-	-	62	-	-
3B-R21E	2A	Residence	62	64	-	-	-	63	-	-
3B-R22E	2A	Residence	61	63	-	-	-	62	-	-
3B-R23E	2A	Residence	65	**67**	-	-	-	Take	-	-
3B-R27W	2A	Residence	59	61	-	-	-	**69**	-	-
3B-R30W	2A	Residence	59	61	-	-	-	**66**	-	-
3B-R30E	2A	Represents 3 Silesia residences east of US 212	62	64	-	-	-	58	-	-
3B-R32E	2A	Residence	**68**	**70**	-	-	-	62	-	-
No Build-R42W		Residence west of US 212	58	60	-	-	-	-	-	-
N1	2A	Represents 3 residences in future subdivision	50	-	-	-	Take	-	-	-
N2	2A	Represents 3 residences in future subdivision	53	56	-	-	-	-	-	59
N3	2A	Represents 3 residences in future subdivision	49	-	-	-	Take	-	-	-

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
***Bold** denotes a value that approaches or exceeds noise impact criteria.*

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
N4	2A	Represents 3 residences in future subdivision	54	-	-	-	-	-	-	59
N5	2A	Represents 3 residences in future subdivision	45	-	-	-	Take	-	-	-
N6	2A	Represents 3 residences in future subdivision	51	-	-	-	-	-	-	**66**
N7	2A	Residence	58	61	-	63	63	63	63	63
N8	2A	Represents 3 residences in future subdivision	48	-	-	-	**70**	-	-	-
N9	2A	Represents 3 residences in future subdivision	49	-	-	-	59	-	-	**64**
N10	2A	Represents 1 residence in future subdivision	51	54	-	-	-	-	**66**	-
N11	2A	Represents 3 residences in future subdivision	51	-	-	-	-	-	**62**	-
N12	2A	Represents 3 residences in future subdivision	58	61	-	64	-	64	65	-
N13	2A	Represents 2 residences in future subdivision	50	-	-	-	-	-	Take	-
N14	2A	Represents 3 residences in future subdivision	57	60	-	64	-	-	-	-
N15	2A	Represents 1 residence in future subdivision	49	-	-	-	-	-	**62**	-
N16	2A	Represents 1 residence in future subdivision	54	57	-	Take	-	63	-	-

TABLE 4-7
Receptors and Traffic Noise Levels for Alternatives Based on 112 km/h (70 mph)
***Bold** denotes a value that approaches or exceeds noise impact criteria.*

BSA Receptor ID Number	Fig. No.[a]	Description	No Build Alt. (2006) Existing	No Build Alt. (2030)	Alternative 1 (2030)	Alternative 2 (2030)	Alternative 3A (2030)	Alternative 3B (2030)	Alternative 5A (2030)	Alternative 5B (Preferred) (2030)
N17	2A	Residence	49	-	-	-	**62**	-	-	-
N18	2B	Represents 2 residences	47	-	-	**63**	-	-	-	-
N19	2B	Represents 2 residences	47	-	-	**67**	-	-	-	-
N20	2B	Represents 3 residences	47	-	-	**60**	-	-	-	-
N21	2B	Residence	47	-	-	Take	-	-	-	-
N22	2B	Represents 3 residences	47	-	-	**60**	-	-	-	-
N23	2B	Represents 2 residences	47	-	-	Take	-	-	-	-
N24	2B	Represents 2 residences	47	-	-	**68**	-	-	-	-
N25	2B	Residence	47	-	-	Take	-	-	-	-
N26	2B	Represents 2 residences	47	-	-	**70**	-	-	-	-
N27	2B	Residence	47	-	-	**64**	-	-	-	-
N28	2B	Residence	47	-	-	Take	-	-	-	-
N29	2C	Residence	55	58	-	-	Take	Take	-	-
N30	2C	Residence	53	55	-	-	**69**	**69**	-	-
N31	2C	Represents 2 residences	54	-	-	-	**61**	**61**	-	-

[a]Fig. No. = Figure number in *Appendix D, Noise Figures*, showing the location of the Big Sky Acoustics (BSA) Receptor ID.

4.9.3.1 Indirect Effects

With the No Build Alternative, increases in expected traffic levels and subsequent noise levels might displace or modify the development patterns of residential, business, and commercial properties.

4.9.3.2 Mitigation

No noise mitigation measures are proposed for the No Build Alternative.

4.9.4 Build Alternatives

Noise impacts are specific to each build alternative. However, the build alternatives would divert part of the traffic from the PTW. This diversion would lower the noise impacts along the PTW.

4.9.4.1 Indirect Effects

With the proposed project, changes to traffic patterns and subsequent noise levels might displace or modify the development patterns of residential, commercial, and business properties. The number of noise-impacted receptors for all build alternatives, except Alternative 2, would be lower than for the No Build Alternative.

4.9.4.2 Alternative 1—Far West Bench

Ten receptors were analyzed that were within 150 m (492 ft) of the proposed centerline of Alternative 1. In the design year (2030), noise levels at five receptors (representing five residences) are predicted to exceed the noise impact criteria (see Table 4-6 and *Appendix D*). One additional residence (receptor 1-R231E), may also be relocated due to right-of-way acquisition (Table 4-7).

4.9.4.3 Alternative 2—Near West Bench

Thirty-four of the noise receptors analyzed were within 150 m (492 ft) of the proposed centerline of Alternative 2 (see Table 4-6 and *Appendix D*). In the design year (2030), traffic noise impacts are predicted at 20 of the receptors representing 34 residences (Table 4-7). An additional six residences might also be relocated due to right-of-way acquisition (Table 4-7).

4.9.4.4 Alternative 3A—Near Existing Alignment

A total of 41 of the noise receptors analyzed were within 150 m (492 ft) of the proposed centerline of Alternative 3A (see Table 4-6 and *Appendix D*). In the design year (2030), noise levels at nine of the receptors (representing nine residences and three homes in a future development site) are predicted to exceed the noise impact criteria. An additional 12 receptors might be relocated due to right-of-way acquisition (Table 4-7).

4.9.4.5 Alternative 3B—Near Existing Alignment

Forty of the noise receptors analyzed were within 150 m (492 ft) of the proposed centerline of Alternative 3B (see Table 4-6 and *Appendix D*). Because they share much of the same alignment, 28 of these noise receptors are common with Alternative 3A. In the design year (2030), six of the receptors (representing seven residences) are predicted to exceed the noise impact criteria. An additional nine receptors might be relocated due to right-of-way acquisition (Table 4-7).

4.9.4.6 Alternative 5A—Combined West Bench

Sixteen of the noise receptors analyzed were within 150 m (492 ft) of the proposed centerline of Alternative 5A (see Table 4-6 and *Appendix D*). In the design year (2030), noise levels at seven of the receptors (representing four residences and five homes in a future development site) are predicted to exceed the noise impact criteria. An additional two receptors might be relocated due to right-of-way acquisition (Tables 4-6 and 4-7).

4.9.4.7 Alternative 5B—Combined West Bench (Preferred)

Fourteen of the noise receptors analyzed were within 150 m (492 ft) of the proposed centerline of Alternative 5B (preferred) (see Table 4-6 and *Appendix D*). In the design year (2030), noise levels at five of the receptors (representing three residences and six homes in two future development sites) are predicted to exceed the noise impact criteria. An additional two receptors might be relocated due to right-of-way acquisition (Tables 4-6 and 4-7).

4.9.4.8 Mitigation

When traffic noise impacts are predicted, abatement measures need to be considered. Potential abatement measures include:

- Modifying the proposed alternative roadway designs
- Construction of noise barriers or berms
- Traffic management through reducing speed limits or restricting certain vehicle types

According to MDT's *Traffic Noise Analysis and Abatement: Policy and Guidance* (2001), the abatement measures must be reasonable and feasible. Barriers or berms must provide a minimum 6-dBA reduction in noise levels to be considered feasible. However, the evaluation of other abatement measures to determine if they are feasible is subjective. Note that MDT's traffic noise policy (2001) does not address property values or valuation.

The following paragraphs discuss reasonable and feasible noise-abatement measures. A final decision on the installation of the abatement measures will be made upon completion of the project's final design and the associated public involvement process with the affected landowners. For example, barriers would not be constructed if, in accordance with MDT policy, the final cost-effectiveness index calculations (based on final design and current costs) indicate the barriers are not cost-effective or if a majority of landowners at the specific, affected areas do not support the barrier installation.

Design Modifications. Reducing the proposed roadway width would not reduce the predicted traffic noise levels. Even if a 4-m (13-ft)-wide center turn lane were used instead of the proposed 11-m (36-ft)-wide center median as evaluated, the difference in noise levels would be less than 1 dBA. Therefore, noise impacts would still be predicted for the build alternatives. In other words, roadway width reduction is not a feasible abatement measure.

Maximizing the distance between noise receptors and the proposed alternatives reduces noise impacts. This concept was considered during the initial determinations related to locating the build alternatives. Once potential noise impacts were quantified and weighed against other environmental, economic, social, and cultural impacts, alignment adjustments were optimized to address noise levels.

Barriers and Berms. To be effective, noise barriers or berms must be continuous and block the direct line of sight between the roadway and a residence. The need for driveways to access residences and access roads limits the functionality (location and continuation) of barriers and berms. Barriers can be constructed using built-up dirt to create a berm, by building a wall using concrete, concrete block, or other similar materials, or a combination of both. Although it may be used for visual screening, vegetation, such as trees and shrubs, are not considered effective barrier material since sound passes readily through vegetation. In general, the length of an effective barrier has to be a minimum of four times the distance from the receptor to the barrier. MDT uses a Cost-Effectiveness Index (CEI) to determine if a barrier is reasonable, and the CEI incorporates the number of residences that would be benefited by the barrier (i.e., experience a minimum 6-dBA reduction in traffic noise levels), the total noise reduction provided by the barrier, and the total cost of barrier materials and construction.

According to MDT, a CEI that exceeds $4,200 is not considered reasonable for barrier construction (MDT, 2001). To achieve the minimum 6-dBA reduction required by MDT for Alternative 5B (preferred), barriers would need to be a minimum of 12 feet high, and the barrier length would be determined by the distance to a receptor. The approximate cost to construct a barrier in 2008 dollars would be approximately $35 per square foot. For the impacted receptors of Alternative 5B (preferred), the calculated CEI is between $33,120 and $188,080 for receptors that represent 1 to 3 residences (1-R177W, 1-R179E, 2-R82E, and N9), and $12,240 for receptor N6 (see Table 4-7 and *Appendix D*). Therefore, the calculated CEI's greatly exceed MDT's requirement of $4,200.

Traffic Management. Restricting certain vehicle types (such as trucks) from the road and limiting the time of day that certain vehicles might use the road are not feasible noise-abatement measures for US 212. Since the road is a rural principal arterial, such restrictions would limit access by trucks to the agricultural properties along it. Also, US 212 is part of the NHS. A main function of the NHS is to provide efficient transportation routes for commercial transport, including domestic and international freight carriers.

Reducing the speed limit on US 212 may be a reasonable and feasible noise mitigation measure for the project, if such a measure would not hinder the function of the principal arterial. For example, reducing the existing speed limit from 70 mph to 65 mph would reduce the predicted traffic noise levels by approximately 1 dBA, which would eliminate one of the five predicted impacts for Alternative 5B (preferred), representing three residences in a future subdivision. If the speed limit was reduced to 60 mph, the predicted traffic noise levels

would be reduced by approximately 2 dBA, which would eliminate two of the five predicted impacts for Alternative 5B (preferred), representing six residences in two future subdivisions. However, MDT is required to conduct a speed study before a speed limit can be changed.

Land Use Planning/Information for Local Officials. MDT's document *Growing Neighborhoods in Growing Corridors: Land Use Planning for Highway Noise* (2008), recommends that traffic noise levels of 60 dBA should be used to determine the location of outdoor use areas and the location of building façades closest to the roadway to avoid traffic noise problems in the future. If the 60 dBA criteria can be met by planning a site accordingly, then the need for traffic noise control measures, such as barrier walls, earthen berms, improved window configurations, etc., can be avoided. The noise analysis determined that 130 m (425 ft) between the centerline of Alternative 5B (preferred) and a potential area of frequent outdoor use or building façade would be needed to meet MDT's recommended 60 dBA noise level to avoid traffic noise problems in the future. Local officials should strongly encourage developers to incorporate noise-compatible development on their planned/proposed properties (e.g., subdivisions). Examples of noise-compatible development include providing greenbelts, open space, or parkland between the residents and the roadway.

4.10 Water Flow and Quality

4.10.1 No Build Alternative

The No Build Alternative would not cause additional impacts to surface water quality, groundwater quality, source water protection areas, or domestic wells over those resulting from existing conditions. The No Build Alternative would not increase the volume of stormwater runoff to surface water bodies. However, based on the projected increases in traffic volume, the potential pollutant loading in the stormwater would likely increase.

4.10.1.1 Indirect Effects

Indirect water flow effects are not expected with the No Build Alternative. Indirect effects to stormwater quality might occur with the No Build Alternative as a result of the projected increased traffic volumes.

The most common contaminants in highway runoff are heavy metals, inorganic salts, aromatic hydrocarbons, and suspended solids that accumulate on the road surface as a result of vehicle use and regular highway operation and maintenance activities. Ordinary operations and wear and tear of vehicles result in the dropping of oil, grease, rust, hydrocarbons, rubber particles, and other solid materials on the highway surface. Those materials can then be washed off the highway during rain or snow storm events. Based on the projected increases in traffic volume (see *Section 1.3.2, Transportation Demand*), pollutant loading in the stormwater would be expected to increase with the No Build Alternative.

4.10.1.2 Mitigation

No water flow and quality mitigation measures are proposed for the No Build Alternative.

4.10.2 Build Alternatives

Implementation of any of the build alternatives is not anticipated to impact flow through the perched aquifer. The roadway surface is between 9 m and 15 m (30 ft and 50 ft) above the shallow aquifer. Mitigation measures discussed in *Section 4.10.2.2, Mitigation,* would protect flow in the shallow aquifer from construction or operational impacts.

Various water quality impacts would be common to the build alternatives. These impacts are related to the following resources:

- **Surface Water.** The surface water bodies in the project area have not been assigned TMDLs and are scheduled for the 2008-2012 completion cycle (MDEQ, 2006). Without TMDL information, quantitative impacts from stormwater runoff cannot be assessed using predicted loading rates of typical contaminants in highway runoff. Additional monitoring data collection and future TMDL development for the Clarks Fork Yellowstone River portion might require an assessment of impacts from stormwater runoff.
- **Groundwater.** The potential exists for direct adverse impacts on the quality of groundwater in the US 212 corridor. Various soluble constituents of highway runoff could percolate down through the soil and degrade the quality of the shallow alluvial aquifer. Because the build alternatives would increase the amount of impervious surface area, the volume of stormwater would increase. Along with the increase in impervious surface area, an increase in use of deicing agents would likely occur. Since heavy metals are typically bound to sediments, infiltration of heavy metals into the groundwater is not anticipated. It is expected that the build alternatives could each have the same potential impacts on groundwater quality.
- **Source Water Protection Areas.** Within the US 212 corridor, only one public water supply well (PWSID 00741) has a Source Water Protection Plan on file with the MDEQ. The build alternatives would involve reconstruction within the well inventory area of Fort Rockvale Restaurant and Lounge. However, none of the build alternatives would involve reconstruction within that well's 100-ft control zone. Since the Fort Rockvale Restaurant and Lounge well is located in a confined aquifer and has a very low susceptibility to contaminants, adverse impacts are not expected.

4.10.2.1 Indirect Effects

Indirect effects from the proposed project might include:

- Modifying water quality conditions by improving the capture of stormwater runoff, which would reduce direct flows into surface waters.
- Slightly improving the protection of source water by using upgraded surface water filtration and capture methods to reduce the amount of road-related contaminants reaching groundwater.
- Maintenance of the new highway (for example, mowing, sanding, de-icing) might affect water quality

4.10.2.2 Mitigation

Various mitigation efforts would be common to the build alternatives. These include the following measures:

- **Restoring Domestic Water.** If domestic wells were displaced by the proposed project, domestic water would be restored to the affected properties. The manner in which this would be accomplished would be determined on a case-by-case basis.
- **Conducting Studies to Avoid Impacts to the Water Table.** With the exception of the area around the railroad underpass, subsurface excavation to a depth sufficient to impact groundwater is not anticipated with implementation of the proposed project. However, where a situation arises that would entail excavation to a depth that might intersect the water table, mitigation measures would be implemented so that groundwater flow, including groundwater flow that supports springs, would not be anticipated to be impacted by the proposed project.
- **Seeding the Project Area.** Seeding would be provided in accordance with MDT Standard Specifications. Disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species, as recommended and determined feasible by the MDT botanist. This action would be in accordance with MCA 7-22-2152 and 60-2-208, and MDT would develop revegetation guidelines that the contractor would have to follow. These specifications would likely include instructions for seeding methods, dates, mix components, and the types and amounts of mulch and fertilizer.
- **Managing Highway Runoff Contaminants**. Four management measures have been identified as effective means for removing contaminants such as salt and deicing agents from highway runoff. These measures are vegetative controls, wet detention basins, infiltration systems, and wetlands (TRB, 2000). Of these measures, the best mitigation tool for attenuating pollutant loading from highway runoff along the US 212 corridor would be vegetative control. A permanent desirable vegetation community would be established over landform surfaces disturbed by construction in the US 212 corridor. Seeding would be provided in accordance with MDT Standard Specifications. Disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species, as recommended and determined feasible by the MDT botanist. Vegetative control would be the most cost-effective tool available for removal of contaminants from highway runoff.
- **Creating an Erosion Control and Sediment Plan.** An erosion control and sediment plan in compliance with the MPDES regulations (ARM 17.30.1301 et seq.) would be created and submitted to MDEQ's Water Quality Division to minimize erosion and sedimentation during and following construction. BMPs would be used in the design of this plan.

Table 4-8 summarizes the water-related impacts of the build alternatives.

4.10.2.3 Alternative 1—Far West Bench

Alternative 1 would have five water-body crossings, including two stream crossings and various ditch and canal crossings (Table 4-8). The bridge crossing at Rock Creek and the culvert crossing at Farewell Creek would provide direct access for pollutants to enter these

streams. The three remaining crossings would provide indirect access, through water conveyance, to the Yellowstone River. Although the pollutant access risk to streams would be low with just three crossings, the risk of transport would be high because of the short transport distance from these crossings to Rock Creek, Farewell Creek, and the Yellowstone River.

TMDLs have yet to be established for water bodies crossed by or in proximity to Alternative 1. However, as the longest alternative, Alternative 1 would have a larger surface area for contributing more stormwater runoff, higher loading rates, and potential impacts. Combined with the short transport distances, there would be a moderate potential for stormwater runoff impacts to receiving water bodies.

Alternative 1 would displace an estimated three domestic wells, which is fewer than would be displaced with Alternatives 3A, 3B, 5A, and 5B (preferred).

TABLE 4-8
Summary of Water-Related Impacts

Impacts	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Number of stream crossings	2	1	1	1	1	1
Number of water conveyance crossings	3	6	6	3	5	5
Number of domestic wells displaced	3	3	14	12	5	5
Number of public water supplies impacted	None	None	None	None	None	None
Groundwater impacts	None of the alternatives would increase heavy metals in the groundwater. All the alternatives have the potential to increase soluble nutrients and salts in the groundwater.					

4.10.2.4 Alternative 2—Near West Bench

Alternative 2 would have seven water-body crossings, including one stream crossing and various ditch and canal crossings (Table 4-8). The crossing at Farewell Creek would provide direct access for pollutants to enter the stream. The multiple crossings at Free Silver Ditch, Smith Ditch, White Horse Canal, Mason Canal, and some smaller, unknown ditches would provide indirect access through water conveyance to the Yellowstone River and the Clarks Fork Yellowstone River. The risk of pollutants entering surface water would be highest with Alternative 2 because of the large number of crossings. However, the risk of pollutants reaching the Yellowstone River or Clarks Fork Yellowstone River would be lower than with most of the build alternatives because transport distances would be longer before reaching the rivers, allowing more particle-bound pollutants an opportunity to settle out.

Stormwater runoff would be less than with Alternative 1 because Alternative 2 would have one of the shortest alignments and, thus, a smaller surface area. However, Alternative 2 would have seven possible stream, ditch, and canal crossings that could transport stormwater pollutants to the Yellowstone River. In summary, Alternative 2 would have a higher likelihood of polluting water bodies.

An estimated three wells would be displaced with Alternative 2, less than with all the other build alternatives except for Alternative 1.

4.10.2.5 Alternative 3A—Near Existing Alignment

Alternative 3A would have seven water-body crossings, including one stream crossing and various ditch and canal crossings (Table 4-8). The crossing at Farewell Creek would provide direct access for pollutants to enter the stream. The other crossings would provide indirect access through water conveyance to the Yellowstone River. The access risk to surface water would be high with Alternative 3A because of the large number of crossings. However, the risk of pollutants reaching streams would be lower than with most of the other build alternatives because transport distances would be longer before reaching the Yellowstone River, allowing more particle-bound pollutants an opportunity to settle out.

The length of the Alternative 3A alignment would be longer than the majority of the build alternatives. The larger surface area associated with the Alternative 3A alignment combined with the large number of crossings would yield higher loading rates and the greatest potential for stormwater runoff impacts to receiving water bodies.

The Alternative 3A alignment would displace an estimated 14 domestic wells, which is more than with any other build alternative.

4.10.2.6 Alternative 3B—Near Existing Alignment

Alternative 3B would have the fewest water-body crossings. The four crossings would include one stream crossing and three ditch and canal crossings (Table 4-8). The crossing at Farewell Creek would provide direct access for pollutants to enter the stream. The other crossings would provide indirect access through water conveyance to the Yellowstone River. The risk of direct discharge of pollutants to surface water would be low with Alternative 3B because of the small number of crossings. The risk of pollutants reaching the Yellowstone River would also be lower than with most of the other build alternatives because transport distances would be longer before reaching the river, allowing more particle-bound pollutants an opportunity to settle out.

Since Alternative 3B would be the shortest alignment with a moderate number of crossings, it is anticipated that, of the build alternatives, it would cause the least amount of stormwater runoff impacts to receiving water bodies.

An estimated 12 wells would be displaced with Alternative 3B, which would be just 2 wells less than with Alternative 3A.

4.10.2.7 Alternative 5A—Combined West Bench

Alternative 5A would have an estimated six water-body crossings, including one stream crossing and various ditch and canal crossings (Table 4-8). The crossing at Farewell Creek would provide direct access for pollutants to enter the stream. The multiple crossings at Free Silver Ditch, Smith Ditch, White Horse Canal, Mason Canal, and some smaller unknown ditch crossings would provide indirect access through water conveyance to the Yellowstone River and the Clarks Fork Yellowstone River. The risk of direct discharge of pollutants to surface

water would be high with Alternative 5A because of the large number of crossings. The risk of pollutants reaching the Yellowstone River or Clarks Fork Yellowstone River would be lower than with most of the other build alternatives because transport distances would be longer before reaching the rivers, allowing more particle-bound pollutants an opportunity to settle out.

A moderate length and fewer crossings characterize the Alternative 5A alignment. Therefore, it is anticipated that Alternative 5A would cause low to moderate stormwater runoff impacts to receiving water bodies.

An estimated five wells would be displaced with Alternative 5A, causing moderate impacts.

4.10.2.8 Alternative 5B—Combined West Bench (Preferred)

Alternative 5B (preferred), which would be almost identical to Alternative 5A with respect to water-body crossings, length, and well displacement (Table 4-8), would impact water quality in a similar manner.

4.11 Wetlands

4.11.1 No Build Alternative

Wetlands would not be impacted greater than existing conditions with the No Build Alternative.

4.11.1.1 Indirect Effects

Indirect effects on wetlands are not expected with the No Build Alternative.

4.11.1.2 Mitigation

No wetland mitigation measures are proposed for the No Build Alternative.

4.11.2 Build Alternatives

In addition to discussions specific to each build alternative, this section includes information about the following topics:

- Placement of Fill Materials
- Formal Wetland Delineations
- Preliminary Wetland Delineations and Evaluations
- Wetland, Riparian, and Aquatic Areas Affected
- Indirect effects
- Mitigation

4.11.2.1 Placement of Fill Materials

The majority of the direct impacts on jurisdictional and non-jurisdictional wetland and riparian communities and other Waters of the U.S. would be caused by the placement of fill materials required for highway construction. Wetland functional values would be adversely affected, especially for those alignments that were not located adjacent to US 212's PTW. These functional losses would include wildlife disturbance from noise (during roadway construction and operation) and habitat fragmentation (where wetlands were bisected by roads).

4.11.2.2 Formal Wetland Delineations

Wetlands and wetland impacts have been delineated based on the conceptual (approximately 30 percent) design that is available at this early stage of the design process. As the design process continues and as additional avoidance, minimization, and mitigation strategies are evaluated, potential impacts may change slightly. Jurisdictional determinations made in this document are preliminary. Coordination will continue with COE and final jurisdictional determinations will be made in conjunction with COE at the time of permitting.

4.11.2.3 Preliminary Wetland Delineations and Evaluations

To comply with CWA Section 404(b)(1), build alternatives for the proposed project were laid out on paper and then staked in the field. Preliminary wetland delineations and evaluations using MDT's MWAM were then completed along the build alignments.

Adjustments to Alignments. Those areas of alignments with wetland or other Waters of the U.S. impacts were adjusted to avoid as many impacts as practicable. (See Figure 3-5 for the locations of the wetlands discussed.)

- **Alternative 1.** Within Alternative 1, the relocation of US 310 was adjusted to minimize impacts to wetland WL5.
- **Alternative 2.** This alternative was adjusted to minimize impacts to wetland WL3.
- **Alternatives 3A and 3B.** Adjustments to combined Alternatives 3A and 3B were considered and rejected because the impacts were minor and not certain to occur for wetlands WL9, WL11, and WL12.
- **Alternative 3A.** This alternative was adjusted to minimize impacts to wetland WL17. Although alignment adjustments were considered for wetlands WL18, WL19, and WL21, they were abandoned because of their proximity to paralleling canals.
- **Alternatives 5A and 5B (Preferred).** Alternatives 5A and 5B (preferred) were located after the initial wetland delineation. These alternatives were specifically located to avoid impacts to wetlands WL18 and WL19.
- **Alternative 5B (Preferred).** This alternative was located to minimize impacts to wetland WL17.

It was not possible to avoid impacts to wetland WL5 because it is located at the start of most of the build alternatives. At that point, the new alignment would be tied into the existing alignment and the roadbed would be widened.

Removal of Alternative 4–East Bench from Consideration. Alternative 4 would have crossed the Clarks Fork Yellowstone River twice. Alternative 4 was removed from further consideration because it lacked agency and public support and it had the potential for substantial environmental impacts. Dropping Alternative 4 avoided potentially substantial impacts on jurisdictional wetlands and other Waters of the U.S.

4.11.2.4 Wetland, Riparian, and Aquatic Areas Affected

Table 4-9 summarizes wetland, riparian, and aquatic areas and estimated impacts of each build alternative. Jurisdictional determinations shown in the table are preliminary. Final jurisdictional determinations will be made in conjunction with COE at the time of permitting.

4.11.2.5 Indirect Effects

The proposed project might cause some level of indirect effects on the habitat of wetland-dependent species, such as the northern leopard frog, depending on the amount and type of wetland habitat impacted. Typical indirect effects would include changes to hydrology of existing wetlands, sediment input to wetlands located outside of the right-of-way, and shading from overhead structures. Measures to avoid and minimize impacts to wetlands would be implemented to avoid indirect impacts. These might include sediment controls during construction or installation of culverts or design of fill placement to avoid changing existing hydrology.

TABLE 4-9
Potential Area and Type of Wetland and Other Waters of the U.S. Present Within Each Roadway Alternative—Wetland, Riparian, and Aquatic Areas Affected

			Potential Area Affected[a] (ha) Roadway Alignment					
Wetland/ Riparian #	Wetland/Riparian Type (after Cowardin)[b]	Total Area Present (ha)	Far West Bench Alternative 1	Near West Bench Alternative 2	Near Existing Alignment Alternative 3A	Near Existing Alignment Alternative 3B	Combined West Bench Alternative 5A	Combined West Bench Alternative 5B (Preferred)
Expected Jurisdictional Wetlands								
WL1	PFO spring & channel	0.8	0.3	0	0	0	0	0
WL2	PSS	0.2	0	<0.1	0	0	0	0
WL3	RUB	0.2	0	<0.1	0	0	0	0
WL4	PEM	0.4	0	0.2	0	0	0	0
WL5	PEM & PSS	1.9	0	0.5	0	0.5	0.5	0.5
WL6	PEM	0.1	0	0	0	0	0	0
WL8	PEM	0.3	0	0	0.1	0.1	0	0
WL9	PEM &PSS	0.7	0	0	<0.1	<0.1	0	0
WL11	PEM & PSS	0.1	0	0	0	0	0	0

TABLE 4-9
Potential Area and Type of Wetland and Other Waters of the U.S. Present Within Each Roadway Alternative—Wetland, Riparian, and Aquatic Areas Affected

Wetland/ Riparian #	Wetland/Riparian Type (after Cowardin)[b]	Total Area Present (ha)	Potential Area Affected[a] (ha) Roadway Alignment					
			Far West Bench Alternative 1	Near West Bench Alternative 2	Near Existing Alignment Alternative 3A	Near Existing Alignment Alternative 3B	Combined West Bench Alternative 5A	Combined West Bench Alternative 5B (Preferred)
WL12	PEM	5.5	0	0	0.1	0.1	0	0
WL14	PEM & PSS & PFO	6.5	0.1	0.1	0.1	0.1	0.1	0.1
WL15	PSS	0.3	0	0	0	0	0	0
WL16	PEM	<0.1	0	0	0	0	0	0
WL17	PFO	0.6	0	0	0.1	0	<0.1	0
WL18	PSS & PFO	0.5	0	0	0.3	0	0	0
WL19	PFO	0.6	0	0	0.1	0	0	0
WL20	PEM	0.1	0	0	0	0	0	0
WL21	PFO	0.3	0	0	0.1	0	0	0
WL22	PEM	1.0	0	0	0	0	0	0
WL23	PEM & PSS	0.8	0	0	0	0	0	0
WL24	Rock Creek – PFO	2.8	0.1	0	0	0	0	0
WL25	Rock Creek – RUB	0.2	0.1	0	0	0	0	0
Jurisdictional Total[c]		**23.8**	**0.5**	**0.8**	**1.0**	**0.9**	**0.6**	**0.6**
Expected Non-jurisdictional Wetlands								
WL7	PEM	<0.1	0	0	<0.1	0	0	0
WL10	PEM	0.1	0	0	0	0	0	0
WL13	PEM & PFO	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Non-jurisdictional Total[c]		**0.1**	**<0.1**	**<0.1**	**0.1**	**<0.1**	**<0.1**	**<0.1**
Expected Other Waters of the U.S.								
White Horse Canal		--	1.3	0.1	0.40	0.1	0.9	0.9
Mason Canal		--	0	0.1	0.1	0.1	0	0
Davis Ditch		--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Smith Ditch		--	0	0.1	0	0.1	0.1	0.1
Free Silver Ditch		--	<0.1	0.2	0	0	0.1	0.1
Other Waters of the U.S. Total[c]		--	**1.4**	**0.5**	**0.5**	**0.3**	**1.1**	**1.1**
Total Expected Wetlands and Other Waters of the U.S.		**23.9**	**2.0**	**1.3**	**1.6**	**1.2**	**1.7**	**1.8**

Note: These area computations are preliminary and a formal wetland delineation has not been conducted. Other considerations are listed below.

[a] Figures shown for affected areas are based on neat-line measurements at the outline of the roadway earthwork. Additional amounts might need to be added to account for disturbance due to construction activities. Affected areas are within known construction limits and do not include potential effects on private lands outside of construction limits.

[b] Cowardin wetland types: PFO = palustrine forested, PSS = palustrine scrub-shrub, PEM = palustrine emergent wetland, RUB = riverine unconsolidated bottom.

[c] Totals may not match column sums due to rounding.

4.11.2.6 Mitigation

Except as provided under CWA Section 404(b)(1) guidelines, COE and EPA would not allow dredged or fill material to be discharged into wetlands unless appropriate and practicable steps were taken to avoid or minimize potential adverse impacts on the wetlands. See CWA Section 404(b)(1) guidelines and *Appendix E*.

To complete the compliance with the CWA Section 404(b)(1) guidelines, mitigation is proposed to compensate for unavoidable wetland impacts. The *Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines* (EPA and Department of the Army, 1990) requires that wetland mitigation be addressed in the following sequence:

- **Avoid.** Avoid potential wetland impacts to the maximum extent practicable.
- **Minimize.** Minimize unavoidable wetland impacts to the extent appropriate and practicable.
- **Compensatory Mitigation.** Mitigation for unavoidable adverse wetland impacts that remain after all appropriate and practicable avoidance and minimization measures have been evaluated.

These wetland mitigation measures are discussed below:

- **Avoidance and Minimization.** Wetland impacts were avoided and minimized to the extent practicable when setting the location of the proposed alignment and reducing proposed fill slopes. To minimize sedimentation and construction disturbance, it is recommended that construction in wetlands occur when these sites are as "dry" as possible. The CWA Section 404 process requires that identified wetlands under COE jurisdiction be avoided to the extent practicable and that impacts be minimized. Once final design has occurred and wetland impacts can be quantified, a CWA Section 404 permit would be sought from COE. At that time, compensatory mitigation for impacts to wetlands would be identified and commitments would be made.
- **Compensatory Mitigation.** Compensation for unavoidable impacts on wetlands would involve the evaluation of both onsite and offsite mitigation opportunities in an effort to develop replacement wetlands to offset impacts to these resources along the project corridor. Onsite opportunities for wetland mitigation would be evaluated in areas adjacent or contiguous to the impacted wetlands or new roadway. The purpose of onsite mitigation would be to replace the loss of functions and values associated with the impacted wetlands, maintain hydrologic connectivity with existing wetland systems, restore wetland systems, and continue overall wetland habitat connectivity in the same geographic area as the project impacts. Offsite wetland mitigation would be pursued after all onsite mitigation opportunities had been evaluated and it had been determined that additional wetland mitigation was needed to offset project impacts. For the purpose of this project, offsite mitigation would occur at existing MDT Wetland Mitigation Reserves that have been established within Watershed #13—Upper Yellowstone River basin. MDT's policy is to mitigate wetland impacts within the same watershed that the proposed

project causing the impacts is located. All of the build alternatives are located in Watershed #13.

Compensatory mitigation for COE jurisdictional wetland loss includes:

- Onsite wetland restoration or creation opportunities under review include areas located in the floodplain of the Clarks Fork Yellowstone River that are either adjacent to the river or in or adjacent to a former meander or oxbow of the river (see Figure 3-5 in *Chapter 3, Affected Environment*).
- Offsite mitigation would be considered, if needed. Potential offsite mitigation options currently include the MDT wetland mitigation reserves at the Stillwater River, Wagner Pit, and/or D H Ranch sites. At the time of construction, other MDT mitigation sites may be available. MDT will coordinate with the appropriate agencies to determine where offsite mitigation, if necessary, would be carried out.
- Temporary, construction-related impacts to wetlands within the right-of-way and construction easement areas would be revegetated with desirable species as specified by MDT at the earliest practicable date following disturbance and comply with MPDES and CWA Section 404 permit conditions.

To minimize disturbance to wetlands and other Waters of the U.S., the following measures would be implemented:

- Construction equipment operating in wetlands would be limited to that which was needed to perform the necessary work. Width of the construction right-of-way would be minimized to the extent practicable in wetland and stream areas. Temporary construction fencing might be used to avoid impacts to wetlands outside of the direct construction footprint, where feasible.
- All disturbances would be avoided to wetland areas and other drainages that have not been permitted for such activities, including a CWA Section 404 permit (COE), a Stream Protection Act Notification (SPA 124) (MFWP), or a 318 Authorization (MDEQ). Disturbances would include equipment traffic, fill material, staging activities, borrow sites, waste disposal sites, and others. If complete avoidance of all impacts to these non-permitted areas within MDT's area of responsibility were not possible, MDT's District Biologist or MDT's Construction Permit Coordinator would be contacted so the proper permits could be secured prior to working in these areas.
- A revegetation plan would be developed for the proposed project that the contractor would follow. The plan would include specifications on seeding mixes; seeding dates; types and amounts of mulch and fertilizer; and seed mix components. In certain instances, wetland plant material might be salvaged from impacted wetlands to be used at mitigation sites. The plan would also be submitted to the Carbon County Weed District Supervisor and the Yellowstone County Weed District Supervisor for review. Disturbed wetland and streamside areas would be revegetated with desirable species as specified by MDT at the earliest practicable date following disturbance and would comply with MPDES regulations (ARM 17.30.1301 et seq.) and CWA Section 404 permit conditions.

It should be noted that COE does not require mitigation to compensate for impacts to non-jurisdictional wetland and riparian areas. However, it is FHWA policy to mitigate for these impacts.

Table 4-10 provides information about potential onsite wetland mitigation sites identified in areas adjacent or contiguous to the impacted wetlands or new roadway within Watershed #13. Figure 3-5 shows the locations of these sites.

TABLE 4-10
Approximate Area of Potential Onsite Wetland Mitigation Sites

Potential Wetland Mitigation Site	Area
WM-A	6.6 ha (16.5 ac)
WM-B	4.4 ha (11.0 ac)
WM-C	7.0 ha (17.5 ac)
WM-D	3.1 ha (7.5 ac)
WM-E	2.7 ha (6.5 ac)
WM-F	2.7 ha (6.5 ac)
WM-G	3.4 ha (8.5 ac)
WM-H	5.6 ha (14.0 ac)

Note: See Figure 3-5 (*Chapter 3, Affected Environment*) for locations.

No additional wetland mitigation measures specific to each build alternative are proposed.

4.11.2.7 Alternative 1—Far West Bench

As shown in Table 4-9, the dominant jurisdictional wetland types impacted by Alternative 1 would be palustrine forested, scrub-shrub, and emergent wetlands. Approximately 0.5 ha (1.5 ac) of jurisdictional wetlands, <0.1 ha (<0.5 ac) of non-jurisdictional wetlands, and 1.4 ha (3.5 ac) of other Waters of the U.S. would be impacted. The dominant non-jurisdictional wetland types impacted by Alternative 1 would be palustrine forested and emergent wetlands.

4.11.2.8 Alternative 2—Near West Bench

As shown in Table 4-9, the dominant jurisdictional wetland types impacted by Alternative 2 would be palustrine scrub-shrub and emergent wetlands. Approximately 0.8 ha (2.0 ac) of jurisdictional wetlands, <0.1 ha (<0.5 ac) of non-jurisdictional wetlands, and 0.5 ha (1.0 ac) of other Waters of the U.S. would be impacted. The dominant non-jurisdictional wetland types impacted by Alternative 1 would be palustrine forested and emergent wetlands.

4.11.2.9 Alternative 3A—Near Existing Alignment

As shown in Table 4-9, the dominant jurisdictional wetland types impacted by Alternative 3A would be palustrine scrub-shrub and emergent wetlands (Table 4-9). Approximately 1.0 ha (2.5 ac) of jurisdictional wetlands, 0.1 ha (0.5 ac) of non-jurisdictional wetlands, and 0.5 ha (1.5 ac) of other Waters of the U.S. would be impacted. The dominant

non-jurisdictional wetland types impacted by Alternative 3A would be palustrine forested and emergent wetlands.

4.11.2.10 Alternative 3B—Near Existing Alignment

As shown in Table 4-9, the dominant jurisdictional wetland type impacted by Alternative 3B would be palustrine emergent wetlands. Approximately 0.9 ha (2.0 ac) of jurisdictional wetlands, <0.1 ha (<0.5 ac) of non-jurisdictional wetlands, and 0.3 ha (1.0 ac) of other Waters of the U.S. would be impacted. The dominant non-jurisdictional wetland types impacted by Alternative 3B would be palustrine forested and emergent wetlands.

4.11.2.11 Alternative 5A—Combined West Bench

As shown in Table 4-9, the dominant jurisdictional wetland types impacted by Alternative 5A would be palustrine scrub-shrub and emergent wetlands. Approximately 0.6 ha (1.5 ac) of jurisdictional wetlands, <0.1 ha (<0.5 ac) of non-jurisdictional wetlands, and 1.1 ha (2.5 ac) of other Waters of the U.S. would be impacted. The dominant non-jurisdictional wetland types impacted by Alternative 5A would be palustrine forested and emergent wetlands.

4.11.2.12 Alternative 5B—Combined West Bench (Preferred)

As shown in Table 4-9, the dominant jurisdictional wetland types impacted by Alternative 5B (preferred) would be palustrine scrub-shrub and emergent wetlands. Approximately 0.6 ha (1.5 ac) of jurisdictional wetlands, <0.1 ha (<0.5 ac) of non-jurisdictional wetlands, and 1.1 ha (3.0 ac) of other Waters of the U.S. would be impacted. The dominant non-jurisdictional wetland types impacted by Alternative 5B (preferred) would be palustrine forested and emergent wetlands.

4.12 Water Bodies and Aquatic Resources

4.12.1 No Build Alternative

Existing impacts to water bodies and aquatic resources would continue with the No Build Alternative. Existing, ongoing effects include aquatic habitat limitations from chronic dewatering of Rock Creek near the US 310 bridge crossing, which is unrelated to the highway or the proposed project. Current impacts from highway operations include highway runoff containing residuals from operating automobiles and trucks and, during the winter, runoff containing de-icing salts. These effects would continue with operation of the existing highway.

4.12.1.1 Indirect Effects

Indirect effects on water bodies and aquatic resources are not expected with the No Build Alternative.

4.12.1.2 Mitigation

No water body and aquatic resource mitigation measures are proposed for the No Build Alternative.

4.12.2 Build Alternatives

4.12.2.1 Erosion Potential and Runoff

Effects on water bodies and aquatic resources were assessed by estimating erosion potential and runoff from the operation of new facilities. The US 310 crossing of Rock Creek with Alternative 1 is anticipated to have the greatest potential for directly affecting aquatic resources in the project area. These would primarily be temporary impacts due to construction activities, and are discussed in *Section 4.22.12, Water Bodies and Aquatic Resources Mitigation*.

Since other perennial water bodies in the area of the realignments, including other reaches of Rock Creek, the Clarks Fork Yellowstone River, and the Yellowstone River, are not immediately adjacent to the proposed highway realignments, they would not be directly affected by the proposed project.

4.12.2.2 Highway Operations

After construction was completed and reclamation of disturbed sites was successful, the impacts from highway operations and maintenance (such as highway runoff containing residuals from automobile and truck operation and, during the winter, runoff containing de-icing salts) would increase with operation of the reconstructed highway because of the continued operation and maintenance of the PTW.

4.12.2.3 Indirect Effects

Indirect effects on water bodies adjacent to the project area could occur through discharge of sediment and other pollutants via ephemeral and intermittent drainages crossed by alternatives. An increase in the discharge of pollutants could affect aquatic resources. In addition, improved capture and filtration of surface water runoff would reduce the direct input of highway-related contaminants into surface water, slightly improving water quality compared to existing conditions.

4.12.2.4 Mitigation

All disturbances would be avoided to wetland areas and other drainages that have not been permitted for such activities, including a CWA Section 404 permit (COE), a Stream Protection Act Notification (SPA 124) (MFWP), or a 318 Authorization (MDEQ). Disturbances include equipment traffic, fill material, staging activities, borrow sites, waste disposal sites, and others. If complete avoidance of all impacts to these non-permitted areas within MDT's area of responsibility were not possible, MDT's District Biologist or MDT's

Construction Permit Coordinator would be contacted so the proper permits could be secured prior to working in these areas.

Water body and aquatic resource mitigation measures, such as stormwater controls and the implementation of BMPs during and after construction, are proposed for the build alternatives. These measures would be designed and constructed to prevent contamination from entering water bodies. Provisions listed in permits and authorizations from MFWP, COE, and MDEQ would be followed.

The implementation of these standard mitigation and coordination measures would minimize, avoid, or prevent the potential occurrence of adverse impacts on aquatic habitat, fish, or other aquatic resources in Rock Creek, the Yellowstone River, or the Clarks Fork Yellowstone River.

4.12.2.5 Alternative 1—Far West Bench

Additional impacts from sediment or contaminants entering Farewell Creek are possible as discussed in *Section 4.12.2.2, Highway Operations*.

Construction of a new bridge over Rock Creek would result in the localized loss of aquatic and riparian habitat. There would also be crossings of the Free Silver Ditch, Mason Canal, and White Horse Canal. It is not expected that the operation or maintenance of the canals would be affected.

The loss of riparian habitat adjacent to the new bridge would be important in smaller drainages, such as Rock Creek, because of the many influences such habitat has on the quality of aquatic habitat. Murphy and Meehan (1991) reported that riparian habitat can form a protective canopy that provides overhead cover for fish and that moderates the extreme effects of air temperatures during summer (helping to cool streams) and winter (helping to insulate streams). Riparian habitat also:

- Helps reduce soil erosion
- Filters sediment before it enters Rock Creek from adjacent lands
- Stabilizes the stream banks
- Allows for the formation of undercut banks that provide cover for fish

The loss of riparian habitat would also reduce litter-fall into the stream (decreasing nutrients and food for invertebrates) and woody debris deposition (decreasing instream cover).

4.12.2.6 Alternative 2—Near West Bench

There would be crossings of Farewell Creek, the Free Silver Ditch, Mason Canal, White Horse Canal, and Smith Ditch. It is not expected that the operation or maintenance of the canals would be affected.

4.12.2.7 Alternative 3A—Near Existing Alignment

Impacts associated with Alternative 3A would be similar to those described for Alternative 2.

4.12.2.8 Alternative 3B—Near Existing Alignment

Impacts associated with Alternative 3B would be similar to those described for Alternative 2.

4.12.2.9 Alternative 5A—Combined West Bench

Impacts associated with Alternative 5A would be similar to those described for Alternative 2.

4.12.2.10 Alternative 5B—Combined West Bench (Preferred)

Impacts associated with Alternative 5B (preferred) would be the same as those described for Alternative 2.

4.13 Vegetation

4.13.1 No Build Alternative

Vegetation resources that currently exist in the project area would remain the same with natural variation from year to year depending on weather, fire, and other conditions in the project area. As residential and commercial development continues to expand over time, the extent and quality of the local vegetation are expected to decline and the noxious weed population could expand into the newly disturbed area.

4.13.1.1 Indirect Effects

Indirect effects on vegetation are not expected with the No Build Alternative.

4.13.1.2 Mitigation

No vegetation mitigation measures are proposed for the No Build Alternative.

4.13.2 Build Alternatives

Because of the direct relationship between wildlife habitat and vegetation, impacts to plant communities and impacts from invasion of noxious weeds and exotic plants are addressed in *Section 4.14.2.4, Habitat Loss,* of the *Wildlife Resources* section.

4.14 Wildlife Resources

4.14.1 No Build Alternative

Wildlife habitat and populations that currently exist in the project area would remain the same with natural variation from year to year, depending on habitat conditions in the project area. As residential and commercial development continues to expand, the extent and quality of local wildlife habitat and associated wildlife populations are expected to decline.

Traffic volumes are expected to increase over time under the No Build Alternative, which is expected to result in a potential increase in wildlife mortality and increased traffic noise.

4.14.1.1 Indirect Effects

Indirect effects on wildlife resources are not expected with the No Build Alternative.

4.14.1.2 Mitigation

No wildlife resource mitigation measures are proposed for the No Build Alternative.

4.14.2 Build Alternatives

The proposed build alternatives would be located in habitats that have already been substantially altered by human activities. As a result, the types of impacts described would likely occur; however, the severity of the impacts would likely be reduced. Generally, the same types of impacts on wildlife and habitat could occur with each of the build alternatives. Those common impacts are described in *Section 4.14.2.1, Human Presence and Vehicle Use of the New Road, Section 4.14.2.2, Utilities, Section 4.14.2.3, Fences, Section 4.14.2.4, Habitat Loss,* and *Section 4.14.2.5, Indirect Effects*. Mitigation measures common to the build alternatives are described in *Section 4.14.2.6, Mitigation*. Potential impacts specific to each of the build alternatives are described in *Sections 4.14.2.7* through *4.14.2.12*.

4.14.2.1 Human Presence and Vehicle Use of the New Road

Human presence can disturb wildlife, depending on the sensitivity of a particular species to human intrusion. Construction of the roadway in a new location would result in human activity in areas that are currently disturbed infrequently. Wildlife species sensitive to human presence might cease using an area, while species habituated to human presence would not be affected.

The proposed road design calls for the construction of a new four-lane divided highway on a new alignment with the existing two-lane road remaining open. Animal-vehicle collisions are likely to occur on the new road. These collisions could impact a wide variety of species, ranging from small animals to big game.

Complex interactions of many factors influence the frequency of animal-vehicle collisions on a roadway. A primary factor is wildlife population density. Some other factors include traits inherent to individual wildlife species, such as mobility, food preferences, behavior, reproductive patterns, and movement. Other factors may be related to wildlife habitat, such as the location of resources like water, food, cover, breeding areas, or migration routes. Additional factors apply to the road itself, including road design (width, alignment, grade, clear-zone width, number of lanes), vehicle speed, and traffic volume. Also affecting the frequency of animal-vehicle collisions are factors related to driver characteristics and behaviors, including vehicle type, attentiveness, and reaction time.

Once the new road is open, traffic volume is expected to decrease on the existing two-lane road because of a majority of traffic shifting to the new four-lane highway. Under the Preferred Alternative, the proposed four-lane highway would be located out of the river

bottom in sagebrush/grassland habitat, while the existing two-lane road is located in a river bottom/agricultural habitat. It is likely that these two habitat types harbor different wildlife species with distinct behavior patterns that might create differing animal-vehicle collision rates. However, animal-vehicle collisions occurring on the new four-lane highway might counteract the potential decrease expected to be seen on the existing two-lane road. The extent to which animal-vehicle collision rates might differ with the addition of the new road compared to the current conditions is uncertain at this time.

MDT records documented 63 animal mortalities from 1997 to 2006, averaging 6.3 per year on the existing two-lane road. The majority of the documented collisions over these 10 years involved mule deer (39.7 percent), white-tailed deer (31.7 percent), and raccoons (17.5 percent). White-tailed deer and raccoons are less likely to inhabit the sagebrush/grassland habitat adjacent to the proposed new four-lane highway location and are therefore less likely to be involved in vehicle-animal collisions. A potential shift to collisions with the wildlife species that inhabit the sagebrush/grassland habitat adjacent to the new four-lane highway could occur. Those species generally include mule deer, reptiles, upland game birds (sharp-tail grouse and gray partridge), and various small mammals.

The construction of the new four-lane highway is not expected to result in substantial increased impacts to the wildlife resources in the area. Ongoing impacts to wildlife associated with use of the existing two-lane road include collisions with a variety of animals and displacement from noise. These impacts are expected to continue under the Preferred Alternative.

4.14.2.2 Utilities

Overhead power lines can pose problems for a variety of wildlife species. Raptors and other bird species occasionally are electrocuted when they collide with overhead power lines. Overhead power lines can benefit some raptors, such as the American kestrel (*Falco sparverious*), by providing hunting perches.

For the benefit of large raptors, power lines within MDT right-of-way that are relocated as a result of this project would be raptor-proofed in accordance with MDT policy.

4.14.2.3 Fences

Fences would likely be constructed along both sides of the new right-of-way. Depending on the design, the fences might act as barriers to movement by some species.

4.14.2.4 Habitat Loss

- **Agricultural Habitat.** The estimated area of irrigated agricultural and dryland habitat that would be expected to be impacted ranges from approximately 30 ha (74 ac) to 90 ha (222 ac) for the build alternatives.
- **Wetland and Riparian Habitat.** Permanent wetland and riparian habitat impacts would likely affect a variety of species, including small mammals, neotropical migrant birds, and amphibians, including the northern leopard frog. Estimated wetland impacts are discussed in *Section 4.11, Wetlands,* and summarized in Table 4-9.

- **Native/Non-Native Vegetated Uplands.** Alternatives 1, 2, 5A, and 5B (preferred) would include upland habitat with both native and non-native vegetation. The estimated area of the native/non-native vegetated mix uplands habitat that might be impacted ranges from approximately 15 ha (37 ac) to 35 ha (86 ac) for the build alternatives.
- **Noxious Weeds and Exotic Plants.** Noxious weeds and exotic plants can destroy native habitat if disturbed areas are not properly revegetated.

4.14.2.5 Indirect Effects

Potential indirect effects of road development and use include habitat fragmentation and noise.

- **Habitat Fragmentation.** Wildlife avoidance of roads can affect dispersal and breeding behavior. Roads can displace some species from otherwise useable habitat and can be a source of stress.
- **Noise.** Noise can disturb wildlife along roads. Traffic noise can interfere with songbirds' ability to hear mating calls, recognize warning calls, and identify calls by juveniles. The area of potential disturbance would vary by species.

4.14.2.6 Mitigation

When determining mitigation measures for unavoidable wildlife resource and habitat impacts, MDT must balance a number of factors, including public safety; transportation design standards and requirements; geotechnical, hydraulic, and right-of-way issues; public concerns; costs; and the functional value of impacted resources. Discussions with MFWP and MDT identified no specific problem areas in terms of big-game vehicle collisions. Therefore, no locations requiring big-game crossings were identified. In addition to the mitigation measures discussed in *Section 4.22.14, Wildlife Resources,* proposed wildlife resource and habitat mitigation measures for the build alternatives would include the following:

- **Wildlife Crossings.** At this time, no specific locations have been identified as potential or likely wildlife crossings. However, as the design process evolves, MDT will continue to evaluate appropriateness and necessity of wildlife-crossing mitigation measures such as signage, wildlife detection systems, over-sized culverts, etc.
- **Fencing.** During right-of-way negotiations with adjacent landowners, MDT will encourage installation of appropriate, wildlife-friendly fencing. It should be noted that the landowner generally determines the type of fencing ultimately installed.
- **Revegetation.** To reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation, disturbed areas within MDT right-of-way or easements will be seeded with desirable plant species as soon as practicable, as recommended and determined feasible by the MDT botanist.
- **Reclamation.** Reclamation of disturbed construction zones, such as ditches and embankments, would be in accordance with MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003).

No additional mitigation measures specific to individual build alternatives are proposed.

4.14.2.7 Alternative 1—Far West Bench

The right-of-way for Alternative 1 would pass through approximately 28.0 ha (69.2 ac) of irrigated farmland and 61.5 ha (152.0 ac) of dryland agricultural habitat. Approximately 35.4 ha (87.5 ac) of native/non-native vegetated upland habitat would be affected by construction of Alternative 1. This alternative would have greater potential for impacting upland grasslands and rare remnants of sagebrush grasslands than would the other build alternatives.

Impacts related to habitat fragmentation and noise would be relatively high compared to the other alternatives because the Alternative 1 alignment would pass through lands that have been least altered by human activity compared to farmed lands in the project area.

Fewer collisions with deer, and occasionally moose, would be expected than with the other alternatives because most of the alignment would be located outside of the river floodplain. The relatively larger area of impacted native/non-native vegetated upland habitat might result in higher mortality rates for small- and medium-sized mammals and reptiles than with the other alternatives.

Approximately 2.0 ha (5.0 ac) of wetland and riparian habitat would be lost during construction of Alternative 1. Emergent wetlands and associated wildlife habitat located at the north end of the project area near the existing US 212 and near the railroad underpass would also be lost.

Approximately 3.2 km (2 mi) of the Alternative 1 alignment would be located along the top of a bench above the Yellowstone River. The bench is farmed and the river bottom is heavily grazed. However, neither the bench nor the adjacent Yellowstone River bottom is currently subject to regular human activity and noise. Use of the road along the Alternative 1 alignment would disturb a variety of birds and other wildlife.

Alternative 1 would also cross three draws with ephemeral streams. Water only flows in these drainages during large precipitation events or snowmelt. While these drainages do not support much woody riparian vegetation, filling in these drainages and replacing them with culverts could interrupt wildlife travel routes.

4.14.2.8 Alternative 2—Near West Bench

With Alternative 2, approximately 21.2 ha (52.5 ac) of irrigated agricultural habitat, 44.4 ha (109.5 ac) of dryland agricultural habitat, and 29.4 ha (72.5 ac) of native/non-native vegetated upland habitats would be affected. Alternative 2 would cross Farewell Creek, an intermittent stream, and three draws with ephemeral streams and affect 1.3 ha (3.5 ac) of jurisdictional wetlands and Waters of the U.S. Potential impacts would be similar to those described for Alternative 1 with the exception that impacts related to habitat fragmentation and noise would be less.

4.14.2.9 Alternative 3A—Near Existing Alignment

Alternative 3A would pass through approximately 46.8 ha (115.5 ac) of irrigated agricultural habitat. Neither dryland farmland nor native/non-native vegetated upland habitats would be

affected by this alternative. About 1.6 ha (4.0 ac) of jurisdictional wetlands and Waters of the U.S. would be impacted by Alternative 3A. Collisions with deer and animals such as muskrats and raccoons would likely be highest with Alternatives 3A and 3B because of their location in the river bottom. Other potential impacts would be similar to those described for Alternative 1.

4.14.2.10 Alternative 3B—Near Existing Alignment

Alternative 3B would pass through approximately 29.2 ha (72.0 ac) of irrigated agricultural habitat and approximately 1.2 ha (3.0 ac) of jurisdictional wetlands and Waters of the U.S. Neither dryland farmland nor native/non-native vegetated upland habitats would be affected by this alternative. Potential impacts on wildlife and habitat would be similar to those described for Alternative 3A.

4.14.2.11 Alternative 5A—Combined West Bench

Alternative 5A would pass through approximately 38.4 ha (95.0 ac) of irrigated farmland, 39.2 ha (97.0 ac) of dryland agricultural habitat, and 17.2 ha (42.5 ac) of native/non-native vegetated upland habitats. Alternative 5A would cross Farewell Creek, an intermittent stream, and four draws with ephemeral streams, and affect approximately 1.7 ha (4.5 ac) of jurisdictional wetlands and Waters of the U.S. Potential impacts would be similar to those described for Alternative 1.

4.14.2.12 Alternative 5B—Combined West Bench (Preferred)

Alternative 5B (preferred) would pass through approximately 35.1 ha (87.0 ac) of irrigated farmland, 45.6 ha (112.5 ac) of dryland agricultural habitat, and 31.9 ha (79.0 ac) of native/non-native vegetated upland habitats. Alternative 5B (preferred) would cross Farewell Creek, an intermittent stream, and four draws with ephemeral streams, and approximately 1.8 ha (4.5 ac) of jurisdictional wetland and Waters of the U.S. Potential impacts would be similar to those described for Alternative 1.

4.15 Threatened and Endangered Species and State Species of Concern

4.15.1 No Build Alternative

Impacts to threatened and endangered species or state species of concern are not known in the project area. There would be no change to existing conditions with the No Build Alternative.

4.15.1.1 Indirect Effects

Indirect effects on species listed as threatened and endangered or on state species of concern are not expected with the No Build Alternative.

4.15.1.2 Mitigation

No threatened and endangered species or state species of concern mitigation measures are proposed for the No Build Alternative.

4.15.2 Build Alternatives

The effects determinations for ESA-listed species under the Preferred Alternative (Alternative 5B [preferred]) are presented in Table 4-11. The rationale for the effects determinations follows the table in *Section 4.15.2.1, Threatened and Endangered Species or State Species of Concern Not Affected,* and *Section 4.15.2.2, Threatened and Endangered Species or State Species of Concern Potentially Affected.*

TABLE 4-11
Preferred Alternative Threatened and Endangered Species Summary and Determination of Effect.

Common/ Scientific Name	Status	Known Distribution in Project Corridor	Determination of Effect
Black-footed ferret (*Mustella nigripes*)	Endangered	Ferrets have not been introduced in the vicinity of the proposed project and they are not known to occur in the project area.	No Effect
Canada lynx (*Lynx canadensis)*	Threatened	The project area does not include suitable habitat for Canada lynx and lynx are not expected to occur in the area.	No Effect
Gray wolf (Canis lupus)	Experimental, Non-essential	Wolves are not known to occur in the immediate project area. The project area does not support large ungulate herds and has relatively high levels of human activity.	No Jeopardy
Whooping crane (*Grus americana*)	Endangered	One sighting documented during migration in southern Montana including 2 adults on the Yellowstone River, 1.5 miles west of the project area. Human activity levels in the project area would deter crane use. Movement of the road farther from the Clarks Fork Yellowstone River would also reduce potential impacts.	No Effect

4.15.2.1 Threatened and Endangered Species or State Species of Concern Not Affected

All of the field inspections referenced in this section, including determination of suitable habitat and conclusions related to threatened and endangered species or state species of concern were conducted by a certified wildlife biologist with more than 25 years of professional experience. Additional information is presented in *Chapter 5, List of Preparers*.

- **Whooping Crane.** There was a sighting of two adult whooping cranes on the Yellowstone River, 1.5 miles west of the project area in 2005. No whooping cranes have been reported in the Clarks Fork Yellowstone River drainage where the project is located. The project would be expected to have No Effect on whooping cranes for the following reasons. Whooping crane occurrence in the general project area is very irregular and only during

migration (Clark, pers. comm., 2007). This project would impact very little potential whooping crane habitat, and the wetlands that would be impacted would be small, near the highway, and generally over 1/2 mile from the Clarks Fork Yellowstone River. Small wetlands near human activity are not attractive to migrating whooping cranes. The new alignment is moving away from the river bottom, where whooping cranes might fly, and into more upland areas. The project area along US 212 is more commercial and residential than the Yellowstone River area where the cranes were sighted. These levels of human activity are generally not conducive to use of an area by whooping cranes, which prefer sites with minimal human disturbance (Clark et al., 1989). Finally, this project would not affect wetlands associated with the Yellowstone River and would not be constructed in the Yellowstone River drainage, where the 2005 sighting occurred. One of several causes of whooping crane mortality is collisions with power lines and barbed wire fences (Clark et al., 1989; Olsen and Derrickson, 1980). Some existing power lines within the MDT right-of-way would be relocated, but no new lines would be constructed. Fences would likely be constructed along both sides of the new right-of-way. However, the poor quality of potential habitat in the project area, the relatively high levels of human activity, and the lack of use of the area by whooping cranes suggest that collisions with power lines or fences would not be expected to occur. Therefore, the effects determination for the whooping crane is No Effect.

- **Canada Lynx.** Field inspections determined that the project area does not include any suitable habitat for Canada lynx and lynx would not be affected by any of the alternatives.
- **Gray Wolf.** Wolves are not known to occur in the immediate project area. The project area does not support large ungulate herds and has relatively high levels of human activity, making it very unlikely that a pack would establish in the project areas. Wolves passing through that area may be temporarily displaced by the proposed project, but would not be prevented from accessing neighboring important habitats. The construction of this proposed project, under any of the alternatives, would **not likely jeopardize** the continued existence of the Yellowstone experimental population of gray wolves.
- **Black-footed Ferret**. Ferrets have not been introduced in the vicinity of the proposed project and they are not known to occur in the project area (Clark, pers. comm., 2007). Therefore, black-footed ferrets would not be impacted by any of the alternatives.
- **Peregrine Falcon.** Field inspections determined that the only possibly suitable habitat for peregrine falcons occurs along the Clarks Fork Yellowstone River. None of the build alternatives would cross the Clarks Fork Yellowstone River. Therefore, it is unlikely that construction of the proposed project would affect occasional use of the Clarks Fork Yellowstone River corridor by peregrine falcons.
- **Mountain Plover.** Field inspections determined that mountain plovers are not likely to use the project area and would therefore not be impacted by construction of the proposed project.
- **Greater Sage-Grouse.** Field inspections determined that the project area includes a few small remnant stands of sagebrush, but does not include the large expanses of sagebrush required by this species. Also, human disturbance levels in the vicinity of the project area

are too high for sage-grouse, and this species is not expected to occur in the area. Therefore, greater sage-grouse would not be affected by any of the alternatives.

- **Black-Tailed Prairie Dog.** Black-tailed prairie dogs were not observed in the project area and abandoned prairie dog towns were not discovered during field inspections. Therefore, it is unlikely that this species would be impacted by construction of the proposed project.
- **Spiny Softshell.** The spiny softshell only occurs in the Clarks Fork Yellowstone River and none of the build alternatives either cross the river or are located near the river. Therefore, none of the alignments would result in adverse impacts on spiny softshells that occur in or immediately adjacent to the river.
- **Yellowstone Cutthroat Trout.** Yellowstone cutthroat trout generally would not be expected to use lower reaches of Rock Creek in the vicinity of the US 310 bridge crossing. Therefore, it is unlikely that this species would be impacted by construction of the proposed project.
- **Drummond's Hemicarpha.** The only suitable habitat in the project area is the Clarks Fork Yellowstone River, and none of the build alternatives either cross the river or are located near the river. Therefore, none of the alignments would result in adverse impacts on Drummond's hemicarpha.
- **Swamp Milkweed.** Since swamp milkweed was not found during field surveys conducted from June 11 to 15, 2001, it is unlikely that this species would be impacted by construction of the proposed project.

4.15.2.2 Threatened and Endangered Species or State Species of Concern Potentially Affected

Threatened and endangered species or state species of concern or their habitat that might be affected by the build alternatives include the Baird's sparrow, barn owl, milk snake, western hognose snake, northern leopard frog, and bald eagle. The milk snake, the western hognose snake, and the northern leopard frog have not been documented in the immediate project area. *Section 3.15, Threatened and Endangered Species and State Species of Concern,* discusses habitat suitability in the project area and nearby documented occurrences of these species.

- **Baird's Sparrow, Barn Owl, Milk Snake, Western Hognose Snake, and Northern Leopard Frog.** Impacts to suitable habitat for the milk snake, western hognose snake, and northern leopard frog are discussed in *Section 4.11, Wetlands,* and *Section 4.14, Wildlife Resources. Section 4.14, Wildlife Resources,* also discusses noise and animal-vehicle collisions, which might adversely affect these species.
- **Bald Eagle.** Direct impacts to bald eagles are not expected. Based on the application of construction-related mitigation measures for the build alternatives and on existing levels of current human activity in the project area, the proposed project would have "no effect" on wintering or nesting bald eagles.

4.15.2.3 Indirect Effects

One potential indirect effect of the proposed project on bald eagles could occur if the number of road-killed deer along the new highway increased, which is undetermined. Bald eagles often feed on ungulate carrion, especially during the winter. Any increase in the number of road-killed deer could attract bald eagles to the roadside, increasing their chance of being hit. MDT's road maintenance activities include timely removal of dead animals from traveled ways, shoulders, etc.

No other indirect effects on species listed as threatened and endangered or on state species of concern are expected with the proposed project.

4.15.2.4 Mitigation

Mitigation measures for construction impacts to threatened and endangered species or state species of concern related to the build alternatives are discussed in *Section 4.22.15, Threatened and Endangered Species and State Species of Concern.*

4.16 Floodplains

4.16.1 No Build Alternative

The existing alignment currently intersects the 100-year floodplains of the Yellowstone River and the Clarks Fork Yellowstone River for approximately 1,200 m (3,937 ft) where they converge just south of Laurel. No additional impacts to the floodplain would be associated with the No Build Alternative.

4.16.1.1 Indirect Effects

Indirect effects on floodplains are not expected with the No Build Alternative.

4.16.1.2 Mitigation

No floodplain mitigation measures are proposed for the No Build Alternative.

4.16.2 Build Alternatives

In addition to discussions specific to each build alternative, this section includes information about the following topics:

- Evaluation of Encroachment into the Base Floodplain
- Assessment of Impacts to the 100-year Floodplains and Floodways
- Indirect Effects
- Mitigation

4.16.2.1 Evaluation of Encroachment into the Base Floodplain

E.O. 11988, *Floodplain Management*, and 23 CFR 650A, *Location and Hydraulic Design of Encroachments on Floodplains*, require an evaluation of project alternatives to determine the extent of encroachment into the base floodplain. The proposed project would be designed in compliance with E.O. 11988, *Floodplain Management*. State of Montana drainage design standards would be applied to achieve results that would not increase or significantly change the flood elevations and/or limits. A formal location hydraulic study would be completed during final design of the project, when more specific avoidance and minimization measures for potential impacts would be developed. This would allow for a clearer definition of the parameters required to conduct the formal location hydraulic study. Parameters commonly included in a location hydraulic study are discussed below:

- Type and Extent of Floodplain Encroachments
- Alternatives to Longitudinal Encroachment
- Risks Associated with Implementation of the Proposed Action
- Impacts on Natural and Beneficial Floodplain Values
- Support of Probable Incompatible Floodplain Development
- Measures to Minimize Floodplain Impacts
- Measures to Restore and Preserve Natural and Beneficial Floodplain Values Impacted by the Proposed Action

The following sections address these topics generally. *Sections 4.16.2.5* through *4.16.2.10* provide more specific information for each build alternative.

Type and Extent of Floodplain Encroachments. Flood insurance rate maps from FEMA were used to identify and quantify impacts to the 100-year floodplains within the study area—Yellowstone River floodplain, Clarks Fork Yellowstone River floodplain, and Rock Creek floodplain (Figure 4-2). The type and extent of areas of floodplain encroachment associated with implementation of each alternative were conservatively estimated based on the extent of the proposed highway rights-of-way.

Two different types of floodplain impacts, longitudinal and transverse, were identified.

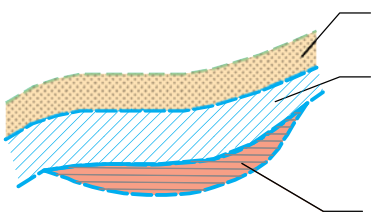
- **Longitudinal Impact.** A longitudinal impact or encroachment is located adjacent to the stream or river (typically less than 30-degree crossings).
- **Transverse Impact.** A transverse impact or encroachment crosses directly over a stream or river and its associated floodplains (typically 30 to 90 degree crossings) of streams, rivers, lakes, floodplains, and floodways. Transverse impacts generally have a higher probability of affecting the floodway of a stream or river.

Each of the build alternatives would result in longitudinal encroachment in 100-year floodplains, while implementation of Alternative 1 would also result in a transverse encroachment in the Rock Creek 100-year floodplain.

ALTERNATIVE ALIGNMENTS

- 1 — Far West Bench Alternative
- 2 — Near West Bench Alternative
- 3 — Near Existing Alignment Alternative (A & B)
- 5 — Combined West Bench Alternative (A & B)

LEGEND:



FLOODWAY BOUNDARY*

100-YEAR FLOOD BOUNDARY (ZONE A)

500-YEAR FLOOD BOUNDARY (ZONE B)

* Boundary not delineated in some areas

NOTE: Floodplain designation based on information from the following Flood Insurance Studies:

Federal Emergency Management Agency (FEMA). 1982. Flood Insurance Study for City of Laurel, Montana. Yellowstone County. July

Federal Emergency Management Agency (FEMA). 2000. Flood Insurance Study for City of Billings and Yellowstone County, Montana. Unincorporated Areas. Revised March

Federal Emergency Management Agency (FEMA). 1990. Flood Insurance Study for City of Red Lodge, Town of Fromberg, Town of Joliet, and Carbon County, Montana. Unincorporated Areas. August

RP53 RP52 RP51 RP50 RP49 RP48 RP47 RP46 RP45 RP44 RP43 RP42

1 2 3 5 3B 5A 5B 3A

0 200 400 600 800 METERS

N

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 4-2
FLOODPLAIN ALONG US 212
FROM ROCKVALE TO LAUREL

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Alternatives to Longitudinal Encroachment. Alternatives to longitudinal encroachment have been evaluated but are not considered practicable due to roadway geometric design constraints. To the extent practicable, alignments associated with each alternative have been developed to minimize longitudinal encroachments.

Risks Associated with Implementation of the Proposed Action. Each of the proposed alternatives would result in longitudinal encroachment in 100-year floodplains that would cause minor changes in flood stage and flood limits. These changes would not result in significant adverse impacts on the natural and beneficial floodplain values (that is, a water surface elevation increase from the base flood elevation greater than 0.15 m [0.50 ft]) or significant changes in flood risk or damage. There would not be significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that the encroachments would not be significant and do not constitute incompatible floodplain development.

Table 4-12 summarizes impacts from encroachments in the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River associated with each alternative. Table 4-13 summarizes impacts from encroachments in the 100-year floodplain of Rock Creek.

TABLE 4-12
Summary of Yellowstone River and Clarks Fork Yellowstone River Floodplain Impacts

Alternative	Reference Post[a]	Floodplain Impact Type	Length	Area	Significance
Alternative 1	52.7 to 53.0	Longitudinal	550 m (1,804 ft)	1.1 ha (2.7 ac)	Not significant[b]
Alternative 2	52.7 to 53.0	Longitudinal	550 m (1,804 ft)	1.1 ha (2.7 ac)	Not significant
Alternative 3A[c]	52.7 to 53.0 52.7 to 52.9	Longitudinal	550 m (1,804 ft) 480 m (1,575 ft)	4.1 ha (10.1 ac)	Not significant
Alternative 3B[c]	52.7 to 53.0 52.7 to 52.9	Longitudinal	550 m (1,804 ft) 480 m (1,575 ft)	4.1 ha (10.1 ac)	Not significant
Alternative 5A	52.7 to 53.0	Longitudinal	550 m (1,804 ft)	1.1 ha (2.7 ac)	Not significant
Alternative 5B (Preferred)	52.7 to 53.0	Longitudinal	550 m (1,804 ft)	1.1 ha (2.7 ac)	Not significant

[a]Reference post is from the PTW.

[b]Using State of Montana standards as a basis, "not significant" is defined as "a floodplain water surface increase of less than 0.15 m (0.50 ft)." To quantify the floodplain water-surface increase, hydraulic model simulations are necessary to compare the current and proposed 100-year water-surface elevations. Detailed hydraulic analyses, including development of model simulations, have not been performed for this study, but will be completed during design of the project. The floodplain encroachments listed in this table are minimal and would not significantly decrease channel conveyance capacity. Based on these limited encroachments, the increase in water-surface elevations is expected to be minimal and therefore not significant.

[c]This alternative results in encroachments from both the mainline of the proposed highway and the PTW.

TABLE 4-13
Summary of Rock Creek Floodplain Impacts

Alternative	Reference Post[a]	Floodplain Impact Type	Length	Area	Significance
Alternative 1	42.6 to 42.7	Transverse	540 m (1,772 ft)	2.4 ha (5.9 ac)	Not significant[b]
Alternative 2	43.0	Longitudinal	160 m (525 ft)	0.2 ha (0.5 ac)	Not significant
Alternative 3A	42.6 to 43.1	Longitudinal	662 m (2,172 ft)	8.3 ha (20.5 ac)	Not significant
Alternative 3B	43.0	Longitudinal	160 m (525 ft)	0.2 ha (0.5 ac)	Not significant
Alternative 5A	43.0	Longitudinal	160 m (525 ft)	0.2 ha (0.5 ac)	Not significant
Alternative 5B (Preferred)	43.0	Longitudinal	160 m (525 ft)	0.2 ha (0.5 ac)	Not significant

[a]Reference post is from the PTW.

[b]Using State of Montana standards as a basis, "not significant" is defined as "a floodplain water surface increase of less than 0.15 m (0.50 ft)." To quantify the floodplain water-surface increase, hydraulic model simulations are necessary to compare the current and proposed 100-year water-surface elevations. Detailed hydraulic analyses, including development of model simulations, have not been performed for this study, but will be completed during design of the project. The floodplain encroachments listed in this table are minimal and would not significantly decrease channel conveyance capacity. Based on these limited encroachments, the increase in water-surface elevations is expected to be minimal and therefore not significant.

Impacts on Natural and Beneficial Floodplain Values. Impacts to the 100-year floodplain could occur through either of the following occurrences:

- A reduction of the flood-carrying capacity (conveyance) of the floodplain (for example, encroachment of fill, bridge piers)
- An increase in the total volume of water conveyed by the floodplain due to an increase in impervious area within the watershed

In general, impacts to floodplains can vary, depending on the elevation change as a result of the proposed roadbed. Elevation changes might have a levee effect, causing a change in the flood pattern by narrowing or channeling the floodplain. To evaluate these effects, a qualitative assessment of specific direct floodplain impacts would be conducted during final design of the alternative selected. This would include hydraulic modeling to simulate water surface profiles for each existing and proposed structure. The proposed project would be designed in compliance with E.O. 11988, *Floodplain Management*, which requires federal agencies to avoid direct or indirect support of floodplain development whenever a practicable alternative exists.

Support of Probable Incompatible Floodplain Development. Floodplain encroachments can occur either directly by construction of highway embankments or indirectly through support of incompatible floodplain development (any development that is not consistent with the community's floodplain development plan). No incompatible floodplain development is expected with the proposed project. Therefore, no additional encroachments are anticipated.

Measures to Minimize Floodplain Impacts. State and federal floodplain regulations provide guidelines on floodwater encroachment levels. Encroachment can be defined as the displacement of floodwaters caused by depositing fill material to bring the roadbed out of the floodplain. The area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights (23 CFR 650.105).

Of the build alternatives, only the Alternative 1 alignment might impact a floodway. Although prohibited in the floodway, construction or fill is allowable within the floodway fringe. However, the floodwater rise cannot exceed state or federal standards. The State of Montana standards allow a 0.15 m (0.50 ft) rise and Federal Insurance Program standards allow a 0.31 m (1.00 ft) rise before a development impacts a floodplain and flood elevations. Potential impacts and restrictions are discussed further, as appropriate for each build alternative, in *Sections 4.16.2.5* through *4.16.2.10*.

Each of the proposed alternatives would result in minimal encroachments on the floodplain. Although these encroachments involve the floodplain, the impacts on human life, transportation facilities, and natural and beneficial floodplain values would not be significant and could be resolved with minimal efforts.

Measures to Restore and Preserve Natural and Beneficial Floodplain Values Impacted by the Proposed Action. Minimal efforts to address the impacts would consist of applying State of Montana drainage design standards to achieve results that would not increase or significantly change the flood elevations and/or limits.

4.16.2.2 Assessment of Impacts to the 100-year Floodplains and Floodways

Sections 4.16.2.5 through *4.16.2.10* assess impacts to the 100-year floodplains and floodways located within the proposed project vicinity for each build alternative, along with associated mitigation measures, as applicable.

The north end of the build alternative alignments would impact the 100-year floodplains of the Yellowstone River and the Clarks Fork Yellowstone River where these floodplains converge. The alignments might longitudinally impact approximately 1.1 ha (2.7 ac) of the floodplain. Impacts to floodways are not anticipated.

Since hydraulic models have not been developed for the alternative alignments, precise changes in flood heights cannot be determined at this stage of the proposed project.

4.16.2.3 Indirect Effects

Where encroachment into the floodplain is avoided, indirect effects on floodplains are not expected. However, if the proposed project encroaches on a floodplain or floodway, indirect effects to locally impacted areas might include modified distribution of floodplain vegetation

or other floodplain-dependent species. Until hydraulic models are developed for the alternative selected, these indirect effects cannot be quantified.

No incompatible floodplain development is expected with the proposed project. Therefore, indirect effects that might result through support of incompatible floodplain development would be minimal.

4.16.2.4 Mitigation

In Montana, encroachment in a floodplain is limited to that which would cause an increase in flood heights of no more than 0.15 m (0.50 ft) (FEMA, 1990). To the extent practicable, floodplain and floodway impacts greater than 0.15 m (0.50 ft) would be avoided during the design of the alternative selected.

The proposed project would be designed in compliance with E.O. 11988, *Floodplain Management*. State of Montana drainage design standards would be applied to achieve results that would not increase or significantly change the flood elevations and/or limits.

To evaluate such things as levee effects, a qualitative assessment of specific direct floodplain impacts would be conducted during final design of the alternative selected. That assessment would include hydraulic modeling to simulate water surface profiles for each existing and proposed structure.

Construction-related mitigation measures common to all the build alternatives are discussed in *Section 4.22.16, Floodplains*. Specific floodplain mitigation measures as applicable for each build alternative are discussed in *Section 4.16.2.5* through *Section 4.16.2.10*.

4.16.2.5 Alternative 1—Far West Bench

Alternative 1 would longitudinally impact approximately 1.1 ha (2.7 ac) of the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River. The proposed interchange for US 310 would result in transverse impacts to the Rock Creek 100-year floodplain, encroaching on approximately 2.4 ha (5.9 ac). The total area of floodplain impacted by Alternative 1 would be approximately 3.5 ha (8.6 ac), which is intermediate in comparison with the other alternatives.

The bridge over Rock Creek associated with the US 310 interchange would span the Rock Creek floodway. Since Montana requires that floodways be kept free of encroachment so that a 100-year flood can be carried without substantial increase in flood heights, the bridge would have adequate clearance for the 100-year flood volume.

The proposed bridge design would avoid placing structures or fill within the floodway and would comply with Montana statutes specifying that such structures not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft). The bridge would also be designed with appropriate erosion-control measures.

Due to the proposed bridge construction, a hydraulic analysis would be required for Rock Creek.

4.16.2.6 Alternative 2—Near West Bench

Alternative 2 would longitudinally impact approximately 1.1 ha (2.7 ac) of the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River. The intersection with Brush Road, associated with the southern portion of the Alternative 2 alignment near Rock Creek, would cause approximately 0.2 ha (0.5 ac) of longitudinal impacts to the Rock Creek 100-year floodplain. Alternatives 2, 5A, and 5B (preferred) would have the least amount of total floodplain impacts (1.3 ha [3.2 ac]).

Alternative 2 would be designed and constructed in a manner that would not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft).

Impacts to floodways are not anticipated with Alternative 2.

4.16.2.7 Alternative 3A—Near Existing Alignment

Alternative 3A would longitudinally impact approximately 4.1 ha (10.1 ac) of the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River. The alignment would cause approximately 8.3 ha (20.5 ac) of longitudinal impacts to the Rock Creek 100-year floodplain at the southern end of the alignment. The Alternative 3A alignment would impact the largest total area of floodplains (12.4 ha [30.6 ac]).

Alternative 3A would be designed and constructed in a manner that would not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft).

Impacts to floodways are not anticipated with Alternative 3A.

4.16.2.8 Alternative 3B—Near Existing Alignment

Alternative 3B would longitudinally impact approximately 4.1 ha (10.1 ac) of the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River. The intersection with Brush Road, associated with the southern portion of the Alternative 3B alignment near Rock Creek, would cause approximately 0.2 ha (0.5 ac) of longitudinal impacts to the Rock Creek 100-year floodplain. Floodplain impacts associated with Alternative 3B would be intermediate to the impacts associated with other build alternatives, affecting approximately 4.3 ha (10.6 ac) of floodplain.

Alternative 3B would be designed and constructed in a manner that would not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft).

Impacts to floodways are not anticipated with Alternative 3B.

4.16.2.9 Alternative 5A—Combined West Bench

Alternative 5A would longitudinally impact approximately 1.1 ha (2.7 ac) of the 100-year floodplain of the Yellowstone River and Clarks Fork Yellowstone River. The intersection with Brush Road, associated with the southern end of the Alternative 5A alignment near Rock Creek, would cause approximately 0.2 ha (0.5 ac) of longitudinal impacts to the Rock

Creek 100-year floodplain. Alternatives 5A, 2, and 5B (preferred) would have the least amount of total floodplain impacts (1.3 ha [3.2 ac]).

Alternative 5A would be designed and constructed in a manner that would not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft).

Impacts to floodways are not anticipated with Alternative 5A.

4.16.2.10 Alternative 5B—Combined West Bench (Preferred)

Impacts associated with Alternative 5B (preferred) would be the same as those described for Alternative 5A.

Alternative 5B (preferred) would be designed and constructed in a manner that would not increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft).

Impacts to floodways are not anticipated with Alternative 5B (preferred).

4.17 Cultural Resources

Three historic properties a in the project area are eligible for listing on the NRHP:

- Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533)
- Free Silver Ditch (24CB1287)
- Main house of the Nutting Farmstead (24CB1642)

Section 4(f) of the U.S. Department of Transportation Act under 23 CFR 774 (Section 4[f]) is a special provision that provides protection for public park and recreation lands, wildlife and waterfowl refuges, and historic sites. FHWA will not approve any project that requires the use of any publicly owned public park, recreation area, or wildlife or waterfowl refuge, or any land from an historic site of national, state, or local significance unless:

1. There is no feasible and prudent alternative to the use, and
2. All possible planning to minimize harm resulting from such use is included.

Direct use of a Section 4(f) resource occurs when land is permanently incorporated into a transportation facility. Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the resource are substantially diminished.

Through consultation with SHPO during the Section 106 process, it was determined that the Free Silver Ditch, the Rocky Fork Branch of the Northern Pacific Railroad, and the main house of the Nutting Farmstead are eligible for listing on the NRHP. For the purposes of Section 106 consultation, the SHPO concurred with MDT, finding that the proposed project would have "no effect" to historic resources. Those historic sites would not be permanently incorporated into the transportation facility, so no Section 4(f) "use" would occur with this project.

SHPO concurred with the determination on May 1, 2003 (see *Appendix H* for the concurrence letters).

4.17.1 No Build Alternative

Cultural resources would not be impacted with the No Build Alternative.

4.17.1.1 Indirect Effects

Indirect effects on cultural resources are not expected with the No Build Alternative.

4.17.1.2 Mitigation

No cultural resource mitigation measures are proposed for the No Build Alternative.

4.17.2 Build Alternatives

The build alternatives would each cross the BNSF Railway (which was previously known as the Rocky Fork Branch of the Northern Pacific Railroad) with a new roadway overpass. The proposed new overpass would not require a change in the railroad alignment, and its current function would be maintained. All build alternatives except for Alternative 3B will would cross the Free Silver Ditch with a box culvert that closely matches the existing width of the canal. No change would be made in the alignment of the canal and its existing function would be perpetuated. None of the alternatives would displace the main house of the Nutting Farmstead. These impacts would cause “No Effect” to the three historic sites. These impacts would not be a “use” of a Section 4(f) property.

4.17.2.1 Indirect Effects

Indirect effects on cultural resources are not expected with the proposed project.

4.17.2.2 Mitigation

No cultural resource mitigation measures are proposed for the build alternatives.

4.18 Hazardous Materials

4.18.1 No Build Alternative

The No Build Alternative would not involve hazardous materials in the project area.

4.18.1.1 Indirect Effects

Indirect effects related to hazardous materials are not expected with the No Build Alternative.

4.18.1.2 Mitigation

No hazardous material mitigation measures are proposed for the No Build Alternative.

4.18.2 Build Alternatives

Hazardous material impacts would be most likely during construction of the build alternatives. Therefore, they are discussed in *Section 4.22.18, Hazardous Materials*.

4.19 Visual Resources

The *Visual Resources* section includes information about the following topics:

- Visual Analysis Methodology
- No Build Alternative
- Build Alternatives

4.19.1 Visual Analysis Methodology

Regardless of the alignment, the build alternatives proposing reconstruction of US 212 would vary from the existing highway (the No Build Alternative) in three respects:

- The roadway design would be wider with more travel lanes
- Approaches to the new road would be limited
- The new design would change the physical appearance of the landscape, with the highway becoming a more dominant element

This section provides information about visual quality and visual effects.

4.19.1.1 Visual Quality

A predicted visual quality rating was developed for each of the build alternatives using FHWA methodology (FHWA, 1988). Visual quality ratings are based on the merits of three independent parameters: landscape unity, intactness, and vividness. The predicted ratings were developed by studying the proposed engineering cross-sections for design Alternative 1 (four lanes with 11-m [36-ft] median) to determine the amount of landscape alteration (particularly landforms) associated with the design. In addition, the change in the visual character resulting from the introduction of a roadway into the existing landscape was considered. Table 4-14 summarizes the predicted visual quality ratings, as well as the existing visual quality ratings determined for each alternative.

TABLE 4-14
Comparison Summary of Projected Visual Quality Ratings* for Alternative Alignments

Views	Existing Alignment	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Views from the Road							
Existing Visual Quality	3.14	3.98	3.62	3.54	3.43	3.92	4.09
Proposed Visual Quality	3.14	3.48	3.13	3.16	3.05	3.48	3.59
Change	0.00	-0.50	-0.49	-0.38	-0.38	-0.44	-0.49
View of the Road							
Existing Visual Quality	2.74	4.00	3.54	2.61	2.75	3.19	3.19
Proposed Visual Quality	2.09	3.10	3.00	2.17	2.33	2.80	2.80
Change	-0.65	-0.90	-0.54	-0.44	-0.42	-0.39	-0.39
Overall Average							
Existing Visual Quality	2.94	3.99	3.58	3.07	3.09	3.56	3.64
Proposed Visual Quality	2.94	3.29	3.07	2.67	2.69	3.14	3.20
Change	0.00	-0.70	-0.51	-0.41	-0.40	-0.42	-0.44

*The visual quality rating is a scale from 0 to 7, with 7 being the highest visual quality rating possible (that is, 7 = High; 5 = Moderate; 1 = Low).

The proposed visual quality ratings do not change significantly from the existing ratings for any of the alternatives. The minimal decrease in visual quality ratings can be attributed to the encroachment of a new highway in an undeveloped area and/or the increase in visibility or dominance of the proposed highway. These ratings do not consider the probability of new development occurring outside of the right-of-way.

Visual quality outside of the highway right-of-way is largely determined by development restrictions/requirements and zoning imposed by local jurisdictions. Both Carbon and Yellowstone counties lack zoning or corridor management plans for the study area. For all alternatives under consideration, the effects of development outside of the right-of-way cannot be determined.

4.19.1.2 Visual Effects

The overall visual effects of the landscape would not be greatly affected by the proposed project. For most build alternatives, the adverse impact would be negligible. For the traveler, there would be a reduction in visual quality along all of the build alternatives in the valley. Table 4-15 summarizes the visual effects for each alternative.

TABLE 4-15
Comparison Summary of Visual Quality for Alternative Alignments and Assessment of Impacts

Visual Effect	Existing Alignment	Alternative 1	Alternative 2	Alternative 3A	Alternative 3B	Alternative 5A	Alternative 5B (Preferred)
Visual Effect on Landform	No Modification	Some Modification	Some Modification	Minimal Modification	Some Modification	Some Modification	Some Modification
Visual Effect on Land Cover	No Modification	Some Modification	Some Modification	Some Modification	Some Modification	Some Modification	Some Modification
Visual Effect on Development	No Modification	Minimal Modification	Some Modification	Some Modification	Some Modification	Some Modification	Some Modification
Overall Traveler Scenic Quality	Moderate-Low Quality	Moderate-High Quality	Moderate Quality	Moderate-Low Quality	Moderate-Low Quality	Moderate-High Quality	Moderate-High Quality
Visual Dominance of Highway(s)	Some Dominance	Some Dominance	Some to Very Dominant	Very Dominant	Very Dominant	Some Dominance	Some Dominance
Alter Character of Landscape	No Change	Most of the build alternatives	Less than Alt. 1	Slightly	Slightly	Slightly	Slightly

4.19.2 No Build Alternative

The rating assumes visual quality along the existing highway inside of the right-of-way for the No Build Alternative would remain the same as the existing conditions. Under this assumption, the No Build Alternative would not impact the overall average visual quality rating. If current development trends continue, it is likely that the visual quality of this corridor outside of the right-of-way would deteriorate.

4.19.2.1 Indirect Effects

Indirect effects on visual resources are not expected with the No Build Alternative.

4.19.2.2 Mitigation

No visual quality mitigation measures are proposed for the No Build Alternative.

4.19.3 Build Alternatives

All of the build alternatives would have some impact on the character of the landscape and the overall visual quality. Alternatives 1 and 2 would reduce the visual quality the most, and Alternative 3B the least. Alternatives 1 and 2 would have the greatest effect on the character of the landscape, compared with a slight effect with the remaining build alternatives, including Alternative 5B (preferred).

4.19.3.1 Indirect Effects

Indirect effects of the proposed project might include a change in the type and distribution of existing and future residential and commercial developments along the corridor of the alternative selected.

4.19.3.2 Mitigation

The following visual quality mitigation measures are proposed for the build alternatives:

- If practical, techniques would be employed to lessen the visual effects of typical rock cuts and bridge abutments at stream crossings.
- As appropriate, natural-looking rock cuts with non-linear edges that have rounded edges resembling adjacent, existing bluffs would be created.
- As appropriate, revegetation practices would be implemented, such as reintroducing desirable plant species, creating pockets in newly graded slopes for plantings, and revegetating in ways that do not result in a linear edge.

No other visual quality mitigation measures are proposed for the build alternatives.

4.19.3.3 Alternative 1—Far West Bench

The Alternative 1 alignment would alter and reduce the character of the existing landscape the most, affecting both views from the road and the view of the road. The roadway would be visible from locations on or near the Yellowstone River. The road would also be visible from a few existing farmsteads and homes along the route that are currently unaffected by the highway. The most visually sensitive location would be at the southern end of the alignment, where the road would transition from the bench to the valley with an elevation change of 54.9 m (180.0 ft). The roadway and associated landform modification would be visible from existing highways and several locations in the valley.

The positive impacts associated with the Alternative 1 alignment include the initial reduction of constructed encroachments, increased visibility of the surrounding mountain ranges, and increased visibility of the Yellowstone River. These impacts are considered beneficial to the traveler's experience.

4.19.3.4 Alternative 2—Near West Bench

The Alternative 2 alignment would alter and reduce the character of the existing landscape. However, the impacts to the visual quality are anticipated to be slightly less than those for Alternative 1. The new roadway would be visible in the foreground and middle ground from existing residences and farmsteads. Alternative 2 would affect more visual resources associated with existing development, agricultural operations, ditches, and canals than Alternative 1. Alternative 2 would result in the greatest modification of landforms, water features, and vegetation. The increased exposure of existing development to the new highway would be greatest along the Alternative 2 alignment. The most visually sensitive location along this corridor would be where development exists and at the locations where the

alignment makes grade transitions. Landform and land-cover modifications on hillsides would be visible from the existing highways and several viewpoints in the valley.

The positive impacts associated with the Alternative 2 alignment include the initial reduction of constructed encroachments and increased visibility of the surrounding mountain ranges. These impacts are considered beneficial to the traveler's experience.

4.19.3.5 Alternative 3A—Near Existing Alignment

The Alternative 3A alignment would alter and only slightly reduce the character of the existing landscape. The impact to visual quality associated with views from the road was the lowest for the Alternative 3A alignment. The new roadway and the existing highway would be visible from existing residences and farmsteads on both sides of the railroad tracks. The traveler would be exposed to the encroachments associated with the existing highway, as well as new encroachments associated with the new alignment. The visibility of both roadways would dramatically increase the presence and visibility of highways in the valley.

4.19.3.6 Alternative 3B—Near Existing Alignment

The Alternative 3B alignment would alter and only slightly reduce the character of the existing landscape and would have the least impact to the overall visual quality. The new roadway and the existing highway would be visible from existing residences and farmsteads on both sides of the railroad tracks. The traveler would be exposed to the encroachments associated with the existing highway, as well as new encroachments associated with the new alignment. The Alternative 3B alignment leaves the existing highway south of Silesia and joins Alternative 3A north of Silesia, exposing the traveler to the encroachments associated with the existing highway.

4.19.3.7 Alternative 5A—Combined West Bench

The Alternative 5A alignment would alter and only slightly reduce the character of the existing landscape. Although very similar, Alternative 5A would likely affect more residences' views of the road than Alternative 5B (preferred). Landform modification would be slightly greater in Alternative 5A than in Alternative 5B (preferred). Alternative 5A would result in less modification of landform at the south end than Alternative 1. Because this alignment follows the existing alignment prior to diverging to the west, the traveler would be exposed to the encroachments associated with the existing corridor. The visibility of both roadways would dramatically increase the presence and visibility of highways in the valley.

The increased visibility of the Yellowstone River and the mountain ranges along the north end of the corridor of the Alternative 5A alignment would also positively impact the traveler's experience.

4.19.3.8 Alternative 5B—Combined West Bench (Preferred)

The Alternative 5B (preferred) alignment would alter and only slightly reduce the character of the existing landscape in a manner similar to Alternative 5A. The visual quality assessment showed moderate changes to the visual quality ratings for the Alternative 5B (preferred)

alignment. Fewer residences' views of the road would be affected by Alternative 5B (preferred) than by Alternative 5A. Landform modification would be slightly less for Alternative 5B (preferred) than for either Alternative 5A or Alternative 1. Because this alignment follows the existing alignment prior to diverging to the west, the traveler would be exposed to the encroachments associated with the existing corridor. The visibility of both roadways would dramatically increase the presence and visibility of highways in the valley.

The increased visibility of the Yellowstone River and the mountain ranges along the north end of the corridor of the Alternative 5B (preferred) alignment would positively impact the traveler's experience.

4.20 Energy Consumption

The extent of horizontal curves in the road, the angle of the curves, and distances were some of the factors considered when determining the energy impacts or conservation potential of each build alternative. Measures that improve traffic flow decrease fuel consumption for the average vehicle. Table 4-16 summarizes the factors used to compare energy consumption impacts for each build alternative to the No Build Alternative.

TABLE 4-16
Factors Influencing Operations Energy Consumption by Alternative

Factor	No Build Alt.	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Travel Distance	16.4 km (10.2 mi)	19.2 km (11.9 mi)	17.7 km (11.0 mi)	17.6 km (10.9 mi)	16.9 km (10.5 mi)	18.2 km (11.3 mi)	18.4 km (11.4 mi)
Topography	Flat	Moderate/ Rolling	Moderate/ Rolling	Flat	Flat	Moderate/ Rolling	Moderate/ Rolling

4.20.1 No Build Alternative

As long as the Rockvale to Laurel stretch of US 212 remains in service, total energy used by vehicles would increase as AADT increases. In 2000, MDT estimated that AADT on US 212 at Rockvale was 5,160 vpd, and that it would increase to 11,590 vpd in 2025. Between 2003 and 2025, MDT has estimated that AADT will increase at an annual traffic growth rate of 2.75 percent. Such an increase in traffic volume would likely lead to increased traffic congestion, especially in the summer months when tourists use US 212 to travel from Billings to the northeast entrance of Yellowstone National Park. Congestion would reduce travel speeds and slow the flow of traffic, resulting in reduced fuel efficiency along the Rockvale to Laurel portion of US 212. In other words, direct energy consumption associated with the existing highway would increase.

4.20.1.1 Indirect Effects

Energy would continue to be used to maintain the existing highway.

4.20.1.2 Mitigation

No energy consumption mitigation measures are proposed for the No Build Alternative.

4.20.2 Build Alternatives

Compared to the No Build Alternative, the build alternatives would help vehicles be more fuel-efficient. The increased fuel efficiency would result from reducing congestion, which allows vehicles to maintain more constant speeds. The reduced congestion would be related to such things as:

- Effectively separating through traffic (traffic with destinations north or south of Laurel or Rockvale, respectively) from local traffic on US 212 because the existing US 212 section would become a local access road to serve residential areas, school buses, and general local needs.
- Having two lanes (especially effective during the summer months, when there are more tourists).

Highway overpasses may limit drivers' lines of sight, potentially leading to reductions in vehicle speed, and each build alternative would include overpasses. However, overall, vehicle speeds with the build alternatives would be more constant than with the No Build Alternative.

4.20.2.1 Indirect Effects

The impacts related to energy expended in the construction of the roadway are addressed in *Section 4.22.20, Energy Consumption*. Energy consumption for maintenance of the roadway would be greater than with the No Build Alternative because both the new US 212 and the PTW would be maintained.

4.20.2.2 Mitigation

No energy consumption mitigation measures are proposed for the build alternatives.

4.20.2.3 Alternative 1—Far West Bench

Impacts for Alternative 1 would be the same as the general impacts for the build alternatives described above.

4.20.2.4 Alternative 2—Near West Bench

Compared to Alternative 1, vehicle speeds on Alternative 2 would be more stable because there would be less deceleration and subsequent acceleration due to fewer grade changes and fewer sharp curves. In addition, it would have a shorter traveling distance and improved line of sight. Therefore, Alternative 2 would provide greater energy efficiency related to operating motor vehicles on US 212 than Alternative 1.

4.20.2.5 Alternative 3A—Near Existing Alignment

It is likely that Alternative 3A would be one of the more fuel-efficient alternatives. Alternative 3A would have one of the shortest alignments of the build alternatives. It would be situated low in the valley, resulting in fewer vertical grade changes, less distance to travel, and fewer curves than the other build alternatives. These factors would reduce vehicle fuel consumption and result in an overall increase in energy efficiency. The railroad crossing for Alternative 3A would be in a different location than the railroad crossing for Alternatives 1, 2, 5A, and 5B (preferred).

4.20.2.6 Alternative 3B—Near Existing Alignment

Alternative 3B would have the shortest alignment of the build alternatives. Because of the similarities between Alternatives 3A and 3B, the impacts would be similar. However, it is likely that Alternative 3B would be more fuel-efficient than Alternative 3A because of its shorter length and more direct, flatter route.

4.20.2.7 Alternative 5A—Combined West Bench

Since it is essentially a hybrid of the alignments for Alternatives 1 and 2, the energy efficiencies for Alternative 5A would be similar. However, Alternative 5A would be more similar to Alternative 2 than to Alternative 1. Vehicle speeds on Alternative 5A would be more stable because there would be less deceleration and subsequent acceleration due to fewer grade changes and fewer sharp curves. In addition, it would have a slightly shorter traveling distance and improved line of sight. These attributes would increase energy efficiency.

4.20.2.8 Alternative 5B—Combined West Bench (Preferred)

Alternative 5B (preferred) would be slightly less energy efficient than Alternative 5A because of its slightly longer alignment. Other than that, the energy efficiencies related to Alternative 5B (preferred) would be almost identical to those for Alternative 5A.

4.21 Geology and Soils

4.21.1 No Build Alternative

The No Build Alternative would not cause additional impacts to the geology and soils within the project area.

4.21.1.1 Indirect Effects

Indirect effects on geology and soils are not expected with the No Build Alternative.

4.21.1.2 Mitigation

No geology and soils mitigation measures are proposed for the No Build Alternative.

4.21.2 Build Alternatives

Geology and soil impacts would be specific to each build alternative. Cut-and-fill sections would be designed to:

- Minimize soil disturbance and the volumes of required fill
- Reduce the probability of slope failures

Subsurface data collected at each proposed cut-slope location would be used to identify the material types underlying each cut slope to further revise recommended cut-slope angles.

General impacts associated with cut slopes might include erosion of materials exposed in the cut slopes, possible slope failures, instability hazards due to bentonite beds, and perched water at the gravel/shale contact, which might seep from exposed cut faces and degrade water quality. Erosion from the cut slopes could affect water quality in surface waters.

Embankment fills might be subject to erosion until properly stabilized.

Cut-and-fill activities would impact soil by using soil material for fill and removing soil through cuts. Use of soil for fill and removal for cuts precludes the use of this soil for other services such as crop production or native vegetation support.

4.21.2.1 Indirect Effects

Indirect effects of the proposed project on geology and soils would vary in scale depending on the alternative selected. Changes to soil in specific areas might affect soil-dependent species (vegetative and wildlife) and the productivity of agricultural lands.

4.21.2.2 Mitigation

No geology and soils mitigation measures are proposed for the build alternatives other than those discussed in *Section 4.10.2.2, Mitigation,* of the *Water Flow and Quality* section.

4.21.2.3 Alternative 1—Far West Bench

Alternative 1 includes several cuts in shale and sandstone bedrock and fills in intermittent drainages, which would result in minor topographic changes within the project area.

Alternatives 1 and 2 require the largest number of cut-slope excavations. Cuts would be concentrated mainly in the southern third of the Alternative 1 alignment and could be approximately 14 m (45.9 ft) in depth. General impacts associated with cut slopes as discussed in *Section 4.21.2, Build Alternatives,* apply to Alternative 1. Soil removal for cuts is anticipated to moderately impact the use of soils for crop production or native vegetation support.

Fill areas would be required throughout the southern third of the Alternative 1 alignment as well as within the northern section where embankment fills would be necessary for eroded gullies. Alternative 1 would require one of the largest amounts of fill, second only to Alternative 5B (preferred). Fill heights would range up to approximately 19.0 m (62.3 ft) in

height. Embankment fills might be subject to erosion until properly stabilized and might preclude the use of fill soil for other services, such as crop production or native vegetation support.

4.21.2.4 Alternative 2—Near West Bench

Alternative 2 includes cuts in shale and sandstone bedrock, and high fills in transverse drainages. Alternative 2 would require less earthwork than Alternative 1, but would have similar impacts. General impacts associated with cut slopes as discussed in *Section 4.21.2, Build Alternatives*, apply to Alternative 2. Alternative 2 would require a moderate volume of fill relative to the other alternatives. Soil removal and addition for cut and fill activities is anticipated to slightly impact the use of soils for crop production or native vegetation support relative to the other alternatives.

Alternative 2 climbs onto a bench in the southernmost section of the Alternative 2 alignment and requires cuts approximately 7.0-m (23.0-ft) deep and fills approximately 8.0-m (26.2-ft) high. The cuts would likely be excavated into gravels and bedrock. Cut slopes in saturated areas might act as drains or might have seeps and springs emanating from their faces. Additional cuts would be required in the vicinity of the Farewell Road crossing, including cuts approximately 10.0-m (32.8-ft) deep and fills approximately 22.0-m (72.2-ft) high. A 10.0-m (32.8-ft)-high embankment is proposed where the alignment descends from the bench and meets the existing alignment.

4.21.2.5 Alternative 3A—Near Existing Alignment

Alternative 3A closely parallels the existing highway alignment. Cuts and fills would be minimal and Alternative 3A would have the least impact based on cut-and-fill requirements. Project impacts to soils and geology differ from Alternatives 1 and 2 because the majority of cut-and-fill activities would be conducted within saturated soils instead of sloped landforms and benches. Given the greater area of farmland impacted by the Alternative 3A alignment, construction activities would likely result in a larger decrease in soil productivity due to loss of project soils for crop production or native vegetation support.

Within the southern third of the Alternative 3A alignment, road construction would require excavation into saturated soils near leaky canals and construction of embankments on saturated ground near leaky canals. Excavations could threaten the stability of the canals, especially if the excavations encounter zones that are saturated by canal leakage. A large embankment approximately 9.0-m (29.5-ft) high and a bridge are proposed in a portion of the alignment. Construction within saturated soils is also anticipated along the existing alignment (where irrigation water ponds) as well as near the railroad crossing and existing underpass (where shallow groundwater collects).

4.21.2.6 Alternative 3B—Near Existing Alignment

Impacts associated with Alternative 3B would be very similar to those described for Alternative 3A, but would require significantly fewer cut activities. Although a minimal amount of cut-and-fill activity would be associated with Alternative 3B, this alignment would require slightly more fill volume than Alternative 3A. Again, this is attributed to the

larger amount of cut activities associated with Alternative 3A. Alternative 3B is anticipated to slightly impact the use of soils for crop production or native vegetation support relative to the other alternatives.

4.21.2.7 Alternative 5A—Combined West Bench

Impacts to project soils and geology associated with Alternative 5A are likely to be similar in nature to Alternative 1. There would be areas of cut and fill throughout the southern portion of the alignment. In addition to general impacts associated with cut slopes as discussed in *Section 4.21.2, Build Alternatives*, project impacts within this area might cause erosion of materials exposed in the cut slopes, possible slope failures, instability hazards due to bentonite beds, and perched water at the gravel/shale contact, which might seep from exposed cut faces and degrade water quality. In particular, the area immediately northwest of Rockvale appears to be prone to high soil erosion; numerous erosional channels from seasonal runoff and barren slopes were observed. Alternative 5A would impact the largest amount of farmland and is anticipated to have larger impacts associated with reduced soil productivity relative to the other alternatives.

4.21.2.8 Alternative 5B—Combined West Bench (Preferred)

Impacts associated with Alternative 5B (preferred) would be similar to those described for Alternative 5A but might be a little greater due to a slightly longer alignment.

4.22 Construction Impacts Related to the Proposed Project

This section provides information about the following kinds of impacts related to constructing the build alternatives:

- Land Use
- Farmlands
- Social Conditions
- Transportation Right-of-Way and Relocations
- Economic Conditions
- Environmental Justice
- Pedestrian and Bicycle Considerations
- Air Quality
- Noise
- Water Flow and Quality
- Wetlands
- Water Bodies and Aquatic Resources
- Vegetation
- Wildlife Resources
- Threatened and Endangered Species and State Species of Concern
- Floodplains

- Cultural Resources
- Hazardous Materials
- Visual Resources
- Energy Consumption
- Geology and Soils
- Construction Schedule and Method

4.22.1 Land Use

Road closures or restrictions during construction phases of the build alternatives might temporarily inhibit development and growth within the project area.

Mitigation

MDT would keep the county commissioners informed about the project by providing updates to the commissioners at their request and by attending county commissioner meetings, if appropriate, to address community and business concerns. This would satisfy the *Carbon County Montana Growth Policy* (2003) (see *Section 3.1.4.1, Carbon County Montana Growth Policy*), which specifically requests that the County Commissioners be engaged in the development process. No other specific land use mitigation measures are proposed for the construction phases of the proposed project.

4.22.2 Farmlands

The displacement of farmlands during construction phases of the build alternatives would be the same as that discussed in *Section 4.2.2, Build Alternatives.*

Mitigation

No farmland mitigation measures are proposed for the construction phases of the proposed project.

4.22.3 Social Conditions

Roads might be closed or travel restrictions might apply on some roads during construction. Temporary impacts would include traffic safety, emergency response issues, and delays to the traveling public.

Traffic and emergency-response vehicles would experience the fewest delays with Alternatives 1 and 2 because, except where the new road leaves and re-enters the PTW, activities would be west of the existing alignment. Delays to traffic and emergency response teams with Alternatives 3A and 3B would be greater than with Alternatives 1 and 2 because much of the existing roadway would be reconstructed. This would create rough road conditions and require lane restrictions. It is anticipated that Alternatives 5A and 5B (preferred) would have more construction-related traffic congestion than with Alternatives 1 and 2, but less than with Alternatives 3A and 3B. Although much of Alternative 5A would be

west of the existing alignment, the southern portion would remain on the PTW longer than with Alternatives 1, 3A, and 5B (preferred). A section of the existing alignment would be used for the four-lane expansion and would cause traffic congestion, with lane restrictions similar to those for Alternatives 3A and 3B.

Mitigation

Social condition mitigation measures for the construction phases of the proposed project will include, if necessary:

- Having MDT keep the county commissioners informed about the project by providing updates to the commissioners at their request and by attending county commissioner meetings, if appropriate, to address community and business concerns. The county commissioners could then be responsive to their constituents and could help with problem solving.
- Requiring a traffic control plan with a response strategy for emergency vehicles needing to travel through the construction area.
  - The response strategy would include, if necessary, 911-dispatch communication with traffic control personnel.
  - The traffic control plan would have an option or alternate route for emergency responders to move along US 212 in an efficient and safe manner.
  - This emergency response strategy might need to be revised at different construction stages.
  - The strategy would need to be coordinated/communicated with emergency responders.
- For Alternatives 1 and 3A, providing flaggers and signs to reduce congestion at the locations where the new road leaves and reenters the existing alignment.
- For Alternatives 3A and 3B, using a pilot car during lane restrictions (if necessary) to maintain public safety.
- For Alternatives 5A and 5B (preferred), addressing traffic safety and minimizing traffic delays in the section of construction where the four-lane expansion would use the existing alignment and where traffic-turning activities would occur during construction at the US 310 interchange.

4.22.4 Transportation Right-of-Way and Relocations

During the various phases of construction, access to business, residence, and agricultural lands might be temporarily disrupted.

Mitigation

Transportation right-of-way and relocation mitigation measures to reduce impacts to businesses, residents, and farmers for the construction phases of the proposed project will include, if necessary:

- Making arrangements prior to the start of each phase of construction to maintain access
- Designating alternative access points for impacted businesses, residences, and farmlands

4.22.5 Economic Conditions

The budget for constructing the proposed project would be too small in size to cause direct measurable impacts on per capita income, employment rates, or various business sectors in the region. However, it should be recognized that construction of the proposed project would most likely employ skilled and unskilled construction laborers and use subcontractors located within the area, which would result in a temporary economic benefit for the region.

Temporary construction-related inconveniences might cause “through-traffic” travelers to stop at other, more convenient stores, restaurants, and gas locations outside the immediate construction zone. However, at the same time, many business establishments near and within the construction zone would experience new patronage from project workers.

It is expected that three restaurants and one convenience store within the project area that provide “daily-necessity” items would experience an overall increase in sales during construction of the proposed project. There might be additional minor positive impacts to local businesses associated with Alternative 1 because construction activities would occur west of the existing alignment. This would allow PTW “through” traffic and local traffic to continue accessing present roadside businesses.

Mitigation

Economic condition mitigation measures to reduce impacts to roadside business establishments during the construction phases of the proposed project will include, if necessary, creating a traffic control plan to:

- Maintain traffic safety
- Provide opportunities for vehicle patrons to leave and reenter the roadway from roadside business establishments

4.22.6 Environmental Justice

During construction phases of the build alternatives, there would be no disproportionate adverse environmental impacts to low-income or minority populations.

Mitigation

No environmental justice mitigation measures are proposed for the construction phases of the proposed project.

4.22.7 Pedestrian and Bicycle Considerations

During the various phases of construction, access to pedestrian and bicycle facilities might be temporarily disrupted.

Mitigation

Pedestrian and bicycle mitigation measures for the construction phases of the proposed project will include, if necessary, making arrangements prior to the start of each phase of construction to maintain access or to designate alternative access points for pedestrian and bicycle facilities.

4.22.8 Air Quality

Air quality issues related to construction activities would include gaseous combustion emissions (including sulfur dioxide) and particulate emissions, generally referred to as fugitive dust. Air emissions come from three general categories of sources: point, area, and mobile.

- **Point Sources.** Point sources generally represent fixed pieces of equipment that emit particulates and other criteria pollutants (nitrogen oxides, carbon monoxide, and sulfur dioxide) through stacks. Examples are asphalt plants and concrete-batch plants.
- **Area Sources.** Area or fugitive sources of particulates include wind-blown dust from material storage piles, handling construction materials, exposed soils, haul roads, and other sources. The quantity of emissions varies based on silt content, moisture content, and physical handling of the materials.
- **Mobile Sources.** Mobile sources of particulate and other criteria pollutants include automobiles, heavy equipment, and diesel portable generators and compressors.
- **Sulfur Dioxide.** A sulfur dioxide non-attainment area was identified near Laurel. Construction might introduce new emission sources, such as asphalt and concrete-batch plants, diesel engines, and other sources. These emission sources might increase sulfur dioxide in the air, further degrading the air quality within the non-attainment area.
- **Particulate Matter.** Haul trucks, concrete trucks, delivery trucks, and other earth-moving vehicles might generate construction-related particulate emissions when traveling over paved and unpaved roads or surfaces. Material might also be blown from stationary

sources such as stockpiles and unprotected soils, as well as from haul loads. The quantity of emissions would vary based on silt content, moisture content, and physical handling of these materials.

Mitigation

In accordance with MDT Standard Specifications, contractors are required to operate in compliance with applicable federal, state, and local air quality standards.

4.22.9 Noise

Construction activities would generate noise that could temporarily cause impacts to receptors near the construction zone. Construction-related sources of noise might include diesel-powered earth-moving equipment (such as dump trucks and bulldozers), vehicle back-up alarms, compressors, and other sources. Detoured traffic and vehicles transporting construction equipment and materials might also contribute to construction-related noise impacts.

Mitigation

In accordance with MDT Standard Specifications, contractors are required to adhere to applicable noise laws, which may include local ordinances.

4.22.10 Water Flow and Quality

Construction would cause temporary soil disturbances with the potential for siltation into the drainages at bridge and/or culvert replacement sites.

Mitigation

In accordance with MDT Standard Specifications, contractors are required to obtain and adhere to applicable permits and authorizations. Applicable permits and authorizations may include obtaining a 318 Authorization for short-term water quality standards for turbidity related to construction activity, preparing and maintaining an erosion control and sediment control plan for an MPDES permit, obtaining a CWA Section 404 permit for dredge and fill in Waters of the U.S., and obtaining a Stream Protection Act Notification (SPA 124). Contractors will be expected to re-establish permanent vegetation in disturbed areas within MDT right-of-way or easements. Areas will be seeded and/or planted with desirable plant species, as recommended by the MDT botanist and in accordance with MDT Standard Specifications. Contractors will be expected to adhere to MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003) through use of BMPs such as fiber mats, catch basins, silt fences, and sediment barriers.

4.22.11 Wetlands

The majority of the direct impacts on jurisdictional and non-jurisdictional wetland and riparian communities would be caused by the placement of fill materials required for highway construction. Refer to *Section 4.11.2.4, Wetland, Riparian, and Aquatic Areas*

Affected, for information about the environmental consequences to wetlands from constructing the proposed project. As mentioned in *Section 4.22.10, Water Flow and Quality,* work below the normal high-water mark would require a CWA Section 404 permit from COE for dredge and fill in Waters of the U.S.

Mitigation

During the construction phases of the proposed project, the mitigation measures described in *Section 4.22.10, Water Flow and Quality,* and the applicable mitigation measures outlined in *Section 4.11.2.6, Mitigation,* of the *Wetlands* section would be followed.

4.22.12 Water Bodies and Aquatic Resources

Soil disturbance, erosion, and runoff during bridge and culvert construction activities might increase sediment delivery to water bodies. Increased sediment delivery could degrade aquatic resources through the sedimentation of habitat and increased levels of turbidity and suspended sediment in the water column. These effects could:

- Reduce or eliminate local stream-bottom habitat used by aquatic insects.
- Reduce local aquatic insect abundance and diversity.
- Reduce the permeability among interstitial spaces within spawning gravels, which would inhibit the flow of well-oxygenated water and the removal of metabolic wastes. This would subsequently reduce spawning success, hatching success, and fish production.
- Reduce the interchange of surface and subsurface waters in the zone immediately beneath the stream channel (Nelson et al., 1991).

These effects could potentially occur in Rock Creek or in the Clarks Fork Yellowstone River via Rock Creek and/or Farewell Creek.

Accidental spills, leakage, and runoff or leaching of petroleum products and other potentially toxic substances used during construction can potentially contaminate surface water drainages and have acute and chronic effects on fish and their foods. The effects of such contamination are influenced by:

- The toxicity of the contaminant, including its persistence and fate
- The volume of the spill
- The distance from surface water and the likelihood of contaminant entry
- The volume and diluting ability of the receiving water
- The sensitivity of organisms exposed to the contaminant.

Direct effects might include mortality of aquatic organisms, while indirect effects might be exhibited through chemically induced changes in densities and community structures of aquatic organisms (Norris et al., 1991). Effects would be comparatively greater during low-flow periods rather than high-flow periods, and in smaller rather than larger water bodies. These effects could potentially occur in Rock Creek or in the Clarks Fork Yellowstone River via Rock Creek and/or Farewell Creek.

Mitigation

In accordance with MDT Standard Specifications, contractors are required to obtain and adhere to applicable permits and authorizations. Applicable permits and authorizations may include obtaining a 318 Authorization for short-term water quality standards for turbidity related to construction activity, preparing and maintaining an erosion control and sediment control plan for an MPDES permit, obtaining a CWA Section 404 permit for dredge and fill in Waters of the U.S., and obtaining a Stream Protection Act Notification (SPA 124). Contractors will be expected to re-establish permanent vegetation in disturbed areas within MDT right-of-way or easements. Areas will be seeded and/or planted with desirable plant species, as recommended by the MDT botanist and in accordance with MDT Standard Specifications. Contractors will be expected to adhere to MDT's *Erosion and Sediment Control Best Management Practices* Manuals (2003) through use of BMPs such as fiber mats, catch basins, silt fences, and sediment barriers.

4.22.12.1 Alternative 1—Far West Bench

Bridge construction and related activities might impact aquatic resources at the new US 310 Rock Creek bridge crossing. Possible direct and indirect effects on fish, aquatic invertebrates, and their habitats include the following:

- Loss of aquatic and riparian habitat at and immediately adjacent to the creek crossing
- Habitat degradation and loss from increased bank disturbance and erosion, sediment delivery, and sedimentation
- Altered spawning and seasonal migrations of fish from instream obstructions
- Direct loss of fish and aquatic invertebrates from accidental spills, leakage, and runoff of toxic substances into the creek

Construction of a new bridge over Rock Creek might result in the localized loss of aquatic and riparian habitat. Instream construction activities might also temporarily alter Rock Creek habitat characteristics (such as water depth, velocity, and habitat types) that are important to native and introduced fish species as well as to aquatic invertebrates. In addition, Alternative 1 would cross Farewell Creek, the Free Silver Ditch, Mason Canal, and White Horse Canal. It is not expected that the operation of the canals would be affected.

See *Section 4.12.2.5, Alternative 1—Far West Bench* of the *Water Bodies and Aquatic Resources* section for additional information related to the loss of riparian habitat adjacent to the new bridge.

Game fish species present in the vicinity of the US 310 crossing that could potentially be affected by construction activities are brown trout (*Salmo trutta),* mountain whitefish (*Prosopium williamsoni),* and brook trout (*Salvelinus fontinalus)* (all of which are fall spawners), and rainbow trout (*Oncorhynchus mykiss*), which spawn during spring. Fall-spawning fish species might potentially be at greater risk due to the very low flows and apparent limiting habitat conditions already occurring in this reach of Rock Creek in the fall.

The introduction of additional potentially limiting factors, such as increased sediment delivery and turbidity, sedimentation of potential spawning gravels, and filling of pools that provide cover for fish, could cause localized decreases in habitat suitability, survival rates of fish and insects, and fish densities. In addition, aquatic insects present among gravels and cobbles at the bridge crossing and downstream could be affected by construction activities. These effects would probably be temporary and subside once construction was completed. High spring flows would likely transport sediment downstream into the Clarks Fork Yellowstone River, re-establishing pool depths and flushing sediments that might have accumulated in Rock Creek gravels. Implementation of mitigation measures would minimize, avoid, or prevent the potential occurrence of the impacts described.

4.22.12.2 Alternatives 2, 3A, 3B, 5A, and 5B (Preferred)

Impacts to aquatic resources and water bodies would include potential introduction of sediment or contaminants into Farewell Creek during construction, as described earlier. Farewell Creek is an intermittent stream draining to the Clarks Fork Yellowstone River. Implementation of mitigation measures would minimize, avoid, or prevent the potential occurrence of these impacts. For example, design and construction of standard stormwater management BMPs would prevent contaminants from entering water bodies and avoid operational impacts.

4.22.13 Vegetation

Because of the direct relationship between wildlife habitat and vegetation, construction-related impacts to vegetation are addressed in *Section 4.22.14, Wildlife Resources*.

4.22.14 Wildlife Resources

Various contractor actions could have adverse impacts on wildlife habitat located on private lands, including:

- Storing or stockpiling equipment or materials
- Developing and operating borrow sites
- Developing construction staging and maintenance areas
- Establishing field offices
- Storing, handling, or transferring hazardous materials or fuel
- Building and using temporary access roads

Therefore, it is likely that some losses of upland, wetland, and riparian habitat in addition to those described below would occur with each of the build alternatives. The type and extent of these impacts cannot be determined exactly because the locations of the contractor activities on private lands are not known.

Construction activity could temporarily affect migration corridors if migrating animals take alternative routes to avoid the construction sites.

Direct impacts on wildlife could include mortality during construction. For example, during bridge construction, deer might move from crossing the road under the bridge to crossing directly over the road. This altered behavior could increase the risk that deer would be hit by

vehicles. This is a particular concern if construction began early in the morning and extended into the evening hours.

Mitigation

During the construction phases of the proposed project, in addition to the mitigation measures discussed in *Section 4.14.2.6, Mitigation,* of the *Wildlife Resources* section, proposed wildlife resource and habitat mitigation measures would include the following:

- Conducting searches for nests in accordance with MBT conventions required by the FWS.
- Timing construction or distractive measures to avoid disturbance of nests in order to comply with the MBTA.
- Not damaging or destroying vegetation that is not designated for removal.
- Making electrical facilities that are relocated within MDT right-of-way as a result of this project raptor-proof in accordance with MDT policy. MDT requires the utility company to submit a copy of the raptor-safe structure design that would be used for these relocated facilities.

4.22.15 Threatened and Endangered Species and State Species of Concern

Based on application of the conservation measures listed in the *Mitigation* section below and on existing levels of current human activity in the proposed project areas for Alternatives 1, 2, 3A, 5A, and 5B (preferred), construction of the proposed project would have "no effect" on wintering or nesting bald eagles. With Alternative 3B, construction would occur at a distance of about 1.20 km (0.75 mi) from the bald eagle nest near Silesia, where a few wintering birds also congregate. As long as typical construction-related timing restrictions and project-specific provisions required by regulatory agencies were followed (see the *Mitigation* section below), neither direct nor indirect impacts on this nesting pair are expected to occur.

Mitigation

Specific bald eagle mitigation measures for the construction phases of the proposed project would include the following:

- Prior to construction, MDT would contact and coordinate with FWS and MFWP to reconfirm the locations of known nests, roosts, or concentration areas occurring within 1.6 km (1 mi) of the project.
- MDT would discuss and coordinate construction restrictions with FWS and MFWP, as appropriate to the location, setting, and status of known or discovered nests, roosts, or concentration areas. These construction restrictions would apply to activities during the construction period. Although they would be site specific, typical construction restrictions would include, if necessary, the following:
  - Not conducting high intensity activities (gravel crushing, pavement milling, heavy-equipment operations, and so forth) or locating or placing staging areas, stockpile

sites, borrow sites, or production processing or mixing plants within 0.8 km (0.5 mi) of an active nest between March 1 and May 15.

– Not conducting high-intensity activities (gravel crushing, pavement milling, heavy equipment operations, and so forth) or locating or placing borrow sites, or production processing or mixing plants within 0.4 km (0.25 mi) of an active nest between May 15 and July 15.

– Applying temporal and spatial restrictions within 0.4 km (0.25 mi) of roost sites and concentration areas during the seasons that these were being actively used. Restrictions to work might be extended or modified in coordination with, and subject to approval by, FWS and MFWP.

4.22.16 Floodplains

Construction-related impacts to the Yellowstone River, Clarks Fork Yellowstone River, and Rock Creek 100-year floodplains might include temporary encroachment of construction vehicles and materials and the placement of fill. These impacts might reduce the capacity for floodwater storage.

Mitigation

The Montana Department of Natural Resources and Conservation or the local floodplain administrator regulates construction activities in a 100-year floodplain.

- If impacts to floodplains were unavoidable, a joint floodplain development permit application would be submitted to the Montana Department of Natural Resources and Conservation. That permit would have to be approved before construction activities began.
- The COE, FEMA, and floodplain agencies for the State of Montana, Carbon County, and Yellowstone County would be consulted prior to construction.

Since construction activities are not expected to increase water surface elevation from the base flood elevation greater than 0.15 m (0.50 ft), no other floodplain mitigation measures are proposed.

4.22.17 Cultural Resources

During construction, temporary effects from unsightly disturbed areas, construction vehicles, or material storage areas (visual resource); noise; and fugitive dust might affect the historic sites in the project area determined eligible for the NRHP. In addition, construction easements, detours, or road closures might affect access to these sites.

During ground-disturbing activities associated with road building, previously unidentified archaeological resources could be discovered.

Mitigation

If archeological resources were discovered during the construction phases of the proposed project, construction would cease immediately. To identify, evaluate the significance of, and determine appropriate future actions related to the archeological/historical resource(s), the MDT archeologist and/or historian would be consulted and would work with SHPO, as appropriate.

4.22.18 Hazardous Materials

Hazardous material impacts related to construction activities such as excavation and demolition would be specific to each build alternative. These impacts might include:

- Materials in the waste dumps that require special handling and disposal
- Buildings to be demolished that contain asbestos-containing-material or lead-based-paint wastes
- Home heating oil USTs and associated fuel lines or ASTs at residential displacements
- Contaminated soil (for example, creosote-stained soil in the railroad tie salvage business)
- Polychlorinated biphenyls (PCBs) in utility transformers
- PCBs in the electrical substation in Silesia

Table 4-17 summarizes some of the sites that potentially contain hazardous materials.

TABLE 4-17
Sites Potentially Containing Hazardous Materials

	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
Waste dumps	7	4	0	0	7	7
Buildings with potential asbestos-containing-material or potential lead-based-paint wastes	2	1	---	---	1	1
Storage tanks with heating fuels	---	---	Numerous	Numerous	---	---
Railroad tie salvage business (creosote-stained soil)	---	---	1	1	---	---
Electric pole transformers (PCBs)	3	---	---	---	2	2
Electrical substation (PCBs)	---	---	1	1	---	---
Other	---	1	---	---	1	---

In addition, various potentially hazardous materials are related to construction vehicles and equipment. If not dealt with in an appropriate, efficient manner, hydraulic or other hazardous material leaks from construction vehicles might adversely impact sensitive resources, such as wetlands, water bodies, and wildlife resources. There is also a potential for leaks and spills with onsite storage of hazardous materials related to construction activities.

Mitigation

During the construction phases of the proposed project, hazardous material mitigation measures would include:

- Handling and disposing of materials contained in the waste collection areas identified within the footprints in special ways such as the following:
  - The waste collection area would be evaluated to determine if special handling would be required.
  - Materials in the waste collection area would be deposited in landfills approved for those materials. Note: the waste collection areas would not be so extensive that re-routing of the alignment would be required.
- Determining if buildings to be demolished are contaminated with asbestos or other hazardous materials and, if so, properly disposing of the materials.
  - Asbestos and Hazardous Materials inspections would be conducted for all building structures demolished or relocated from the project corridor. The inspections would identify the location and quantity of asbestos-containing material, home-heating-oil systems, or other hazardous material, if any, which would be abated prior to demolition.
  - A remediation/reclamation plan would be developed, if needed, in consultation with MDEQ and the counties.
  - Regulated asbestos-containing materials containing more than 1 percent asbestos would be removed and properly disposed in approved locations prior to building demolition.
  - Structures slated for relocation would be inspected for asbestos-containing material by a state-licensed inspector and abated prior to relocation, if necessary.
  - The demolition contractor would be required to file a National Emissions Standards for Hazardous Air Pollutants Demolition/Renovation Notification form with MDEQ for relocated or demolished structures.
- Identifying and properly disposing of home heating oil storage tanks (underground and aboveground) and associated fuel lines that might exist at residences that would be displaced.
  - Site inspections would determine if any storage tanks exist on the property.
  - Removal and disposal of storage tanks and associated contaminated soil would be completed in accordance with applicable state and federal laws and regulations.
- Identifying and properly disposing of contaminated soil.
  - Preliminary site investigations (PSIs) would determine the level of soil contamination.
  - Disposal of contaminated soil, if needed, would be conducted in accordance with applicable state and federal laws and regulations.

- Identifying and properly disposing of PCBs.
  - PSIs would be performed to determine if PCBs were present in electrical transformers or in soils around electric utility facilities that would be impacted by the project. If PCBs were discovered, a remediation/disposal plan would be developed in consultation with MDEQ.
- Storing construction-related hazardous materials onsite in accordance with applicable guidelines (such as secondary containment, adequate labeling, and so forth).

4.22.18.1 Alternative 1—Far West Bench

Alternative 1 would likely encounter seven waste collection sites and three electric transformers on poles. Residences on two of the parcels that would be impacted might contain asbestos-containing materials or lead-based paints.

4.22.18.2 Alternative 2—Near West Bench

Alternative 2 would likely encounter four waste collection sites and an old foundation containing scrap material. One home that could be displaced might contain asbestos-containing materials or lead-based paints.

4.22.18.3 Alternative 3A—Near Existing Alignment

Alternative 3A would likely encounter soils at Klamert Railroad Salvage where stored railroad ties show signs of leaching creosote into the soil. The electrical substation owned by Yellowstone Valley Electric Co-Op in Silesia, which is located within Alternative 3A, might contain components with PCBs. Numerous ASTs and USTs are also located in the Alternative 3A alignment.

4.22.18.4 Alternative 3B—Near Existing Alignment

Hazardous material impacts for Alternative 3B would be the same as those described for Alternative 3A.

4.22.18.5 Alternative 5A—Combined West Bench

Alternative 5A would likely encounter seven waste collection sites, two utility pole transformers, and an area of silos and farm-equipment storage. One home that could be displaced might contain asbestos-containing materials or lead-based paints.

4.22.18.6 Alternative 5B—Combined West Bench (Preferred)

Hazardous material impacts for Alternative 5B (preferred) would be similar to those described for Alternative 5A.

4.22.19 Visual Resources

Temporary construction-related impacts to visual resources would be common until the construction was complete and the disturbed areas were restored. These impacts might include unsightly disturbed areas (such as cut and fill of slopes), construction vehicles, or material storage areas.

Mitigation

No visual resource mitigation measures are proposed for the construction phases of the proposed project.

4.22.20 Energy Consumption

The proposed new roadway facilities would be composed of construction materials that would require energy for fabrication. Energy would also be used to transport and place construction materials. The commitment of energy for construction activities would be primarily in the form of gasoline and diesel fuel. The amount of fuel that would be required is not expected to affect local fuel availability or to require additional energy sources. Additional energy would also be consumed by congested or slowed traffic during various phases of construction.

Mitigation

No specific energy consumption mitigation measures are proposed for the construction phases of the proposed project.

4.22.21 Geology and Soils

During construction phases of the build alternatives, soil and geology impacts would be the same as those discussed in *Section 4.21.2, Build Alternatives,* of the *Geology and Soils* section.

Mitigation

For the construction phases of the proposed project, the construction-related mitigation measures proposed in *Section 4.22.10, Water Flow and Quality* would be followed.

4.22.22 Construction Schedule and Method

The contractor would determine specific construction methods while bidding on the contract for the proposed project. These methods would be subject to MDT approval. In general, highway construction could involve the following types of actions, depending on the alternative chosen:

- Reconstruction and widening of the existing roadways
- Bridge construction and demolition

- Utility adjustments
- Construction of new roadways and approaches
- Grading
- Draining
- Irrigation adjustments
- Wetland mitigation
- Placement of retaining walls, curbs, gutters, and pavement

Because of weather constraints, the heavy construction season generally runs from April 15 to November 15.

The proposed project will probably be constructed in stages, depending on the availability of funding and the acquisition of needed right-of-way. The design and right-of-way acquisition phases for similar projects typically take from 2 to 3 years to complete, with the construction phase extending over two or more seasons.

4.23 Local Short-Term Uses and Long-Term Productivity

Local short-term uses of the human environment are related to the maintenance and enhancement of long-term productivity. Construction of the proposed improvements to US 212 would result in short-term impacts. These impacts would include traffic disruption during construction of the new alignment that could, in the short term, affect local traffic flow and access to residences, businesses, and farmlands.

Short-term impacts related to other resources would also be expected (see *Section 4.22, Construction Impacts Related to the Proposed Project*). Mitigation measures have been proposed and would be implemented to offset these impacts.

The proposed improvements to US 212 would be consistent with local and regional planning for land use and the transportation corridor. Benefits related to the support and contribution to the long-term viability of the towns within the study corridor, to Carbon and Yellowstone counties, and to Montana would outweigh the local short-term impacts anticipated from implementation of the proposed project.

4.24 Irreversible and Irretrievable Commitments of Resources

Construction of the proposed reconstruction of US 212 and associated project features would involve a commitment of many resources that would be permanently consumed or lost or that would most likely not revert to their previous uses. These resources include:

- Physical resources, such as construction materials and petroleum products
- Monetary resources, such as public funding used for construction

- Natural resources, such as land converted to highway uses from other uses
- Human resources, such as labor used to construct the new facilities

The benefits associated with the proposed project would outweigh the resources that would be irreversibly and irretrievably committed.

4.24.1 Physical Resources

Large quantities of highway construction materials, such as cement, bituminous materials, and aggregates, would be expended during construction of the proposed project. Large amounts of fossil fuel would also be expended. The fabrication and preparation of construction material would use a large quantity of natural resources. The use of these materials and natural resources would be irreversible and irretrievable. However, these materials are not in short supply. Using them to construct the proposed project would not have an adverse effect on the availability of these resources in the future.

4.24.2 Monetary Resources

A substantial commitment of federal and state funds would be required for constructing the proposed project, and these funds are not retrievable. However, the use of these funds is expected to provide benefits to the people of Montana, the region, and the country that outweigh the expenditure of the funds. These benefits would include improved safety, mobility, and accessibility. The increase in safety, mobility, and accessibility would reduce travel times by increasing the efficiency of travel. It is anticipated that these benefits would outweigh the commitment of funding resources.

4.24.3 Natural Resources

The commitment of land for the highway facility would represent an irreversible commitment during the time frame that the land was used for this purpose. Irrigated and non-irrigated farmlands and pasturelands, as well as wetlands, would be committed. If a greater need for the land arose in the future or the highway facility was no longer needed, the land could be converted to another use. However, it is believed that this conversion to another use would not be feasible or desirable.

4.24.4 Human Resources

The efforts of the people employed to construct the proposed project would not be retrievable. However, since laborers are available, employing them to construct the proposed project would not adversely affect the continued availability of the labor supply.

4.25 Cumulative Impacts

This section provides information about impacts resulting from other past, present, and reasonably foreseeable future actions, and a summary of cumulative impacts.

4.25.1 Past, Present, and Future Actions

Past actions in the project area that have contributed, in general, to the present environmental conditions in the project area include road and railroad development, ranching and livestock grazing, irrigation withdrawals, and residential, commercial, and light industrial development. Past development in the project area over the past 5 to 10 years has been limited to residential development discussed above and transportation projects identified below. Residential development and transportation projects are currently planned in the project area over the reasonably foreseeable future, but at this time no commercial development plans have been formally proposed within the study area.

The number of new housing units in the county increased by more than 17 percent from 1990 to 2000. During that time, the counties processed 270 subdivision applications. When visiting the project area, ongoing development is underway and very evident in the houses that have been constructed in the years that this project has been under evaluation. In addition to single-home construction, several planned or under-construction subdivision developments have been identified that might affect or be affected by the proposed project. These are considered in *Section 4.4, Transportation Right-of-Way and Relocations*. Residential and commercial development is expected to continue as the project area becomes a bedroom community to Laurel and Billings.

MDT has identified various transportation projects that have the potential for interaction with the Rockvale to Laurel project (Nelson, pers. comm., 2004; Neville, pers. comm., 2006; Neville, pers. comm., 2008). Each transportation project is briefly discussed in the following text, along with assessments of potential cumulative impacts. Ongoing, current, and past agricultural activities and residential development could interact with the transportation projects and have been included in the analysis.

1. **Corridor Study-Red Lodge North–STPP 28-2(25)70, CN 4375.** The Red Lodge US 212 road reconstruction project would be located approximately 19.3 km (12 mi) from the Rockvale to Laurel project area. This project's limits would extend from RP 70 to RP 90 on US 212. Funds have possibly become available to finish design and build the first 2 miles of the urban section of this project. Although no official date has been set in MDT's Tentative Construction Plan (Red Book), this project might begin around 2010. Although timing is uncertain, the Red Lodge US 212 project is considered in the cumulative impact assessment because of its location along Rock Creek, which flows through the Rockvale to Laurel project area, and the possibility that the two projects could occur within a similar time frame.
2. **Red Lodge-Northwest–STPP 78-1(11)0, CN 4890.** The Red Lodge State Highway 78 project would reconstruct Montana State Highway 78 from RP 0 to RP 5.1. This project would intersect US 212 at Red Lodge, about 53.1 km (33 mi) from the Rockvale to Laurel project area. Project limits are in proximity to Rock Creek and it is likely that sections of the construction area would drain into Rock Creek. The timing of this project is uncertain, and construction is not expected until 2012 or later. However, the Red Lodge State Highway 78 project is considered in the cumulative impact assessment

because of its proximity to Rock Creek and the possibility that the two projects could occur within a similar time frame.

3. **Bridger-South–NH 4-1(19)13 F, CN 3179.** This project would rehabilitate a portion of US 310 between RP 12.6 and RP 25.676. The project would be located south of Bridger along Bridger Jack Creek, a tributary to the Clarks Fork Yellowstone River. Sections of the roadway would be pulverized and a new surface applied. Other areas would be widened and resurfaced. The project is scheduled for 2012. This project is within the Clarks Fork Yellowstone River watershed and, therefore, has the potential to interact with the Rockvale to Laurel Project.
4. **Wyoming Line-Belfry–STPP 72-1(8)0, CN 4065.** The Wyoming Line-Belfry project reconstructed MT 72 between the Wyoming State Line and the Town of Belfry (RP 0 to 10.54). The entire roadway was reconstructed, which included widening, a new overlay, and correction of horizontal- and vertical-alignment deficiencies. The project has been completed. The project parallels the Clarks Fork Yellowstone River, sometimes very closely, and includes a bridge over the river. The Wyoming Line-Belfry project is not likely to interact with the Rockvale to Laurel project because any potential water quality effects would be over prior to construction of the Rockvale to Laurel project. A Categorical Exclusion is being prepared for this project, indicating that minimal impacts are expected from the project.
5. **Belfry-North–STPP 72-1(5)10, CN 1016.** With the Belfry-North project, approximately 16.3 km (10.1 mi) of MT 72 would be reconstructed between Belfry and US 310 to the south (RP 10.54 to RP 21.42). Sidewalks and other improvements would be constructed in the town portion. Shoulder widening, horizontal and vertical improvements, clear zone improvements, and side-slope flattening would be constructed in the rural portion. Several bridges of the Clarks Fork Yellowstone River would be improved, as would bridges on several tributaries to the Clarks Fork Yellowstone River. This project, because of cost, will be split into two projects. The first part is 2.3 miles, starting at Belfry with a new alignment and ending where it connects back into the old alignment after a new river crossing. The expected cost is $5,000,000 in 2008. The project is scheduled for 2011. The Belfry-North project might interact with the Rockvale to Laurel project since it would be in the same watershed.
6. **Clarks Fork-Fromberg–BR 9005(25), CN4243.** A three-span, single-lane bridge over the Clarks Fork Yellowstone River was replaced. The new bridge is a three-span, two-lane bridge. The bridge is on Carbon County Local Route 307 (locally known as East River Street) about 1 km (0.6 mi) east of Fromberg. Impacts to wetland or aquatic species did not occur during construction. The bridge is on the NRHP, so a marker that included photographs of the current structure and text would be placed near the new structure. Construction has been completed on this project.
7. **8th Ave-Main to 9th-Laurel–STPU 6905(2), CN 3927.** This project will reconstruct 8th Avenue in the City of Laurel. It is scheduled for 2012. There might be some air emissions from this project that could combine with air emissions from the proposed Rockvale to Laurel project if construction occurred simultaneously.
8. **Bridger-Fromberg–NH 4-1(40)26, MT 72 (N-4), CN 5725000.** This is a surfacing rehabilitation project on MT 72 from RP 26.2 to RP 33.80. It is scheduled for 2010.

Project limits are in proximity to Rock Creek and would have the potential to accidentally discharge pollutants into Rock Creek.

4.25.2 Summary of Cumulative Impacts

In accordance with 40 CFR 1508.7, MDT and FHWA have evaluated cumulative impacts in the project area. Cumulative impacts are the impacts on the environment that result from incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes those other actions. This section describes the cumulative impact analysis. The cumulative impacts addressed include the following:

- Land Use
- Farmlands
- Social Conditions
- Economic Conditions
- Water Quality
- Wetlands
- Water Bodies and Aquatic Resources
- Vegetation and Wildlife Resources
- Floodplains
- Carbon Dioxide (CO_2)

The proposed project is not expected to contribute to cumulative effects for the following resources: transportation right-of-way and relocations; environmental justice; pedestrian and bicycle considerations; air quality; noise; threatened and endangered species and state species of concern; cultural resources; hazardous materials; visual resources; energy consumption; and geology and soils. Some of the reasons why these resources are not considered include the following:

- Other than the proposed US 212 project, none of the actions identified in *Section 4.25.1, Past, Present, and Future Actions*, would contribute to displacements within the proposed US 212 project corridor.
- Since the proposed project includes wider shoulders, rectifying past actions that have limited bicyclist and pedestrian use of US 212, no cumulative impacts are expected.
- In the project area, since ambient noise levels are low and air quality is good, noise and air quality are not likely to become issues of concern. It is not expected that traffic levels with the proposed project would increase beyond those predicted for regional growth with the No Build Alternative. Therefore, the proposed project is not expected to contribute to cumulative impacts on noise or air quality in the project area.
- Since neither threatened and endangered species nor state species of concern would be adversely affected in the project corridor, no cumulative impacts are expected.
- Potential cumulative impacts on public services and utilities would be eliminated by coordination of the project with utility companies.

- Since the proposed project area does not contain known or documented release sites, past actions, future actions, and the proposed project are not expected to contribute to cumulative impacts from hazardous materials in the project corridor.
- Since they would occur in developed areas, both present and future actions are not expected to contribute to additional impacts on the visual quality of the roadway corridor.
- Energy consumption would improve with implementation of the proposed project and, therefore, would not contribute to cumulative energy impacts.
- The proposed project would not result in disproportionately high and adverse effects on minority or low-income populations. Therefore, there would be no cumulative environmental justice impacts.
- No cultural or historic resource impacts would result from the proposed project and, therefore, there would be no adverse cumulative impacts.
- Implementation of BMPs would avoid impacts to geology or soils and, therefore, there would be no cumulative geology or soils impacts.

4.25.2.1 Land Use

The past (see *Section 4.1.2, Build Alternatives* of the *Land Use* section), current, and expected trend of conversion of agricultural uses to residential development could be facilitated somewhat by the proposed project, but the cumulative effect is likely to be small. Planning activities by Yellowstone and Carbon Counties may result in land use policies that direct land development toward the same improved intersections that would attract development as a result of the roadway improvements. Together these actions make it more likely than either action alone that land development would shift to certain locations.

The above-stated transportation projects, for the most part, are located within Carbon County (except for a small portion of the Rockvale to Laurel Project, the 8th Avenue Project in Laurel, and one new residence and one new subdivision), and will be expected to comply with the general policies and objectives outlined in the *Carbon County Montana Growth Policy* (2003). It is anticipated that the above-stated projects will require additional rights-of-way and that some agricultural lands, rangelands, and open space will be converted to different uses.

4.25.2.2 Farmlands

Past development in the project area has resulted in both the agricultural use and loss of some designated farmland soils because of the conversion to residential, commercial, light industrial development, and transportation facilities. Although no specific calculation of past conversion of farmland soil has been made, a very small percentage of the area's designated farmland soils of all types has been converted as a result of past non-agricultural development. Because of the prevalence of agricultural lands within the areas of the various transportation projects, it is likely that some designated Prime if Irrigated Farmland and Farmland of Statewide Importance, as well as other agricultural lands, would be impacted. The larger projects, such as the Red Lodge North, the Wyoming Line–Belfry, and the Belfry–North projects, would probably impact more agricultural land than smaller projects like the Red Lodge–Northwest project or urban projects like the Laurel 8th Avenue project.

New subdivisions and residences may also affect farmland as farmland is converted to other uses. Based upon growth trends, it is anticipated that large-scale urban development is not likely and rural farmland will, to a larger extent, remain intact. Even though lost farmland is a concern throughout both counties, MDT is committed to minimize farmland impacts throughout the concept and design of the project, and no adverse cumulative effects are expected.

4.25.2.3 Social Conditions

The proposed project would improve operations by providing passing opportunities and would reduce accidents, contributing to cumulative benefits to traffic operations and safety in a broader area. Traffic patterns are not expected to change as a result of this project when viewed in conjunction with other proposed transportation projects, with past and new proposed subdivisions, and with other residential growth that will likely continue. Through traffic will continue to travel through the area on new or improved routes, and local traffic will access businesses, properties, and services in the same manner as they currently do. Cumulative traffic impacts are not expected with the other projects or the continued growth in housing development.

Most recreational use of the limited facilities in the project area, including Riverside Park in Laurel, is probably by the residents of the general area south of Billings. Overall, past effects on recreation resources in the project area have been positive with the development of Riverside Park and public access to wildlife areas. Past actions such as land development and agriculture have had little effect on recreation.

The proposed project would have limited effect on parks and recreation. Continued development in the project area is unlikely to result in substantial direct effects on parks and recreation opportunities, although continuing increases in the region's population is likely to create additional demand on existing facilities and may over time modify the character of the recreational experience at these facilities.

4.25.2.4 Economic Conditions

Negative impacts on the regional economy associated with the listed cumulative projects are not anticipated because of the small size of the projects. Several positive impacts include temporary benefits (because of the demand for subcontractors and skilled and unskilled laborers within the area); improvements to the state's transportation infrastructure and transportation-based businesses; and increased tourist traffic through the area, especially in the summer months. Past and current growth has also benefited the economic conditions in the project area. Growth in residential and commercial development would continue with or without the proposed project and contribute to the economic conditions. Therefore, beneficial cumulative economic impacts are expected.

4.25.2.5 Water Quality

Past, present, and future residential and commercial development could be expected to contribute to degradation of water quality because of increased pollutant loads in runoff. Future residential and commercial development would be subject to permitting by regulatory

agencies and best management practices which would minimize impacts. Construction and maintenance activities associated with the transportation projects listed could directly and indirectly affect water quality in the Clarks Fork Yellowstone River and Rock Creek, as well as associated canals, ditches, and tributaries. It is anticipated that construction has the potential to temporarily cause both soil disturbances and siltation of the drainages at bridge and culvert replacement sites. However, with implementation of measures to avoid water quality impacts during transportation construction projects, water quality impacts related to these projects would be minimal when compared to water quality effects from agricultural practices and rural development. Because long-term detrimental water quality impacts are not generally expected from commercial and residential development or the proposed project, only minor associated cumulative effects are anticipated.

4.25.2.6 Wetlands

Most past actions have contributed to some degree to loss of wetland area and decreases in wetland functions. There is no known quantitative study of historic wetland loss in the project area. However, it is apparent that some wetlands have been lost to filling or drainage, largely as a result of agricultural conversion and of residential and infrastructure development.

Present and future residential and commercial development activities would also likely result in incremental losses in wetland habitat in the project area. Although the proposed transportation projects are only in the planning stages, it is unlikely that impacts on jurisdictional and non-jurisdictional wetlands and riparian areas could be totally avoided, with the exception of the Clarks Fork–Fromberg project, the Wyoming Line–Belfry project, and the Laurel 8th Avenue project. Current regulatory policy requires mitigation of impacts to jurisdictional wetlands from transportation and other projects, so there should be no net loss of wetland functions and values in the cumulative effects project area. Because each project individually would not result in uncompensated wetland impacts, cumulative wetland impacts are not expected. The proposed project would contribute to cumulative effects on wetlands; however, adverse impacts on wetlands would be mitigated through wetland compensation to restore or create additional wetland acreage.

4.25.2.7 Water Bodies and Aquatic Resources

Since many of the past and future residential and commercial developments, and planned transportation projects, would be constructed near water bodies, they would have the potential to affect water bodies and aquatic resources. Future residential and commercial development would be subject to permitting by regulatory agencies and best management practices which would minimize impacts. However, the increase in impervious surfaces resulting from implementation of these projects would be negligible relative to the size of the area in which these projects are located. Therefore, minimal or no effects on water bodies and aquatic resources would be expected. In addition, implementation of BMPs and mitigation measures, including erosion control, would avoid or minimize impacts. Because minimal or no effects are expected on aquatic resources or water bodies by the other projects or by the build alternatives, associated cumulative impacts to aquatic resources or water bodies are expected to be minor.

4.25.2.8 Vegetation and Wildlife Resources

Most past actions have contributed to the loss of wildlife habitat and fragmentation of habitat. Because agricultural activities together with residential and commercial development occur throughout the project area, past development has modified most of the original wildlife habitat and vegetation in the area. The proposed action, and other development projects, would contribute incrementally to the cumulative loss of wildlife habitat in the project area.

Habitat for wildlife would be avoided or protected through BMPs on MDT projects. If an impact could not be avoided, mitigation is proposed for compensation. Since avoidance and mitigation would be coupled with the distance to the other projects from the Rockvale to Laurel project, cumulative impacts to wildlife resources from other transportation projects are not expected. However, the increasing pace of housing development in the project area puts additional strain on wildlife resources from increased human presence. Wildlife avoidance and mitigation measures for the proposed project will reduce cumulative effects—due to interaction with new developments—to a less-than-significant level.

Habitat for sensitive species would be avoided or protected through BMPs on MDT projects. If an impact could not be avoided, mitigation is proposed for compensation. Since avoidance and mitigation measures would minimize impacts, cumulative impacts to sensitive species are not expected.

4.25.2.9 Floodplains

Past actions, including historic development and early road building activities, have led to development and filling of floodplains in the project area.

With the implementation of modern floodplain regulations, significant impacts in floodplains are now prohibited by law. Therefore, the projects identified in the cumulative impacts assessment, including the proposed action and the future land development activities, would be designed in a manner to avoid floodplain impacts that would result in a significant increase in flood levels. Therefore, negligible cumulative impacts would be expected as a result of constructing the Rockvale to Laurel project.

4.25.2.10 Carbon Dioxide (CO_2)

The transportation sector is the second largest source of total greenhouse gases (GHGs) in the United States, and the greatest source of carbon dioxide (CO_2) emissions, a predominant GHG. In 2004, the transportation sector was responsible for approximately 31 percent of all United States CO_2 emissions. The principal anthropogenic (human-made) source of CO_2 emissions is the combustion of fossil fuels, which accounts for approximately 80 percent of anthropogenic emissions of carbon worldwide. Almost all (98 percent) of transportation-sector emissions result from the consumption of petroleum products such as gasoline, diesel fuel, and aviation fuel (EPA, 2008) (http://www.epa.gov/climatechange/emissions/usinventoryreport.html).

Recognizing this concern, FHWA is working nationally with other modal administrations through the DOT Center for Climate Change and Environmental Forecasting to develop strategies to reduce transportation's contribution to greenhouse gases—particularly CO_2

emissions—and to assess the risks to transportation systems and services from climate changes. At this time, CO_2 emissions are not regulated at the federal or Montana state level; however, based on recent developments, this may be regulated in the future.

Climate change is a global issue, and the emissions changes resulting from the project alternatives are expected to be negligible as compared to total global GHG. GHG emissions, including CO_2, are directly related to energy consumption. The changes in GHG emissions are expected to be similar to the changes in energy consumption presented in *Section 4.20, Energy Consumption*. That section evaluates energy consumption and conservation potential for each alternative and concludes that the build alternatives will yield improved traffic flow and vehicle fuel efficiency. These improvements are associated with reduced GHG emissions. As a result, it is expected that the build alternatives would result in fewer GHG emissions than the No Build Alternative.

4.26 Major Unresolved Issues

Based on the analyses in this chapter, no major unresolved issues were identified.

CHAPTER 5 LIST OF PREPARERS

The responsibilities and qualifications of the consultant and the subconsultant team that prepared the environmental impact statement are listed below.

Preparer/Affiliation	Role	Education and Experience
Steve Alters, P.E. CH2M HILL	Project Management, Alternatives Development	B.S., Civil Engineering; 33 years of experience.
Kath Althen CH2M HILL	Editor	M.A., Economics; B.A., Economics; 25 years of experience.
David Baker, P.E. CH2M HILL	Alternatives Development, Engineering Support, Conceptual Design	B.S., Civil Engineering; 12 years of experience.
Gloria Beattie, P.E. CH2M HILL	Floodplains	M.S., Civil Engineering; B. S., Civil Engineering; 17 years of experience.
Chuck Blair CH2M HILL	Biological Resources	M.S., Wildlife Biology; B.S., Wildlife Ecology; 28 years of experience.
Doug Bradley CH2M HILL	Water Quality, Biological Resources, Economic, Social	M.S., Biology (Aquatic Ecology); B.S., Environmental Biology; 10 years of experience.
Maria Dudash CH2M HILL	Water Quality, Floodplain, Visual Resources, Hazardous Materials, Soils and Geology, Cultural Resources, Land Use, Transportation, Energy	B.S., Environmental Resource Management; 9 years of experience.
Jody Fagan CH2M HILL	Graphics	B.F.A., Associate Applied Science; 29 years of experience.
Judy Ferguson CH2M HILL	Biological Resources	M.S., Rangeland Ecology; B.S., Range Resources; B.S., Wildlife Biology; 11 years of experience.
Joseph Guenther CH2M HILL	Land Use, Farmland	M.S., Resource Analysis; B.A., Environmental Biology; 8 years of experience.
Jonathan Matthews CH2M HILL	Air Quality, Water Quality, Pedestrian and Bicycle, Social, Economic, Farmland, Land Use, Transportation, Relocation	B.S., Environmental Biology; A.A., Forestry; 18 years of experience.
Denny Mengel, Ph.D. CH2M HILL	EIS Team Leader	Ph.D., Soil Sciences; M.S., Forestry; B.S., Wildlife Resources; 23 years of experience.
Eric Wolin CH2M HILL	Energy, Land Use, Hazardous Substances, Geology	B.A., Planning and Environmental Policy; 5 years of experience.
Sean Connolly Big Sky Acoustics	Noise Analysis	M.S., Mechanical Engineering; B.S., Mechanical Engineering; 11 years of experience.
Lynn Peterson Ethnoscience, Inc.	Cultural/ Historic Resources, Native Consultation	M.S., Anthropology; 14 years of experience.
James Strait Ethnoscience, Inc.	Cultural/ Historic Resources, Native Consultation	M.A., Archaeology; B.A., Archaeology; 11 years of experience.

Preparer/Affiliation	Role	Education and Experience
Sandy Fischer Fischer & Associates	Visual Analysis, Public Participation	29 years of experience.
Sue Kutzler Fischer & Associates	Visual Analysis, Public Participation	28 years of experience.
Sylvia Medina North Wind Environmental	Hazardous Waste	M.S., Waste Management (Chemical Engineering); B.S., Environmental Engineering; B.S., Biology; 18 years of experience.

Additional reviewers from the Federal Highway Administration and the Montana Department of Transportation are listed below:

Carl D. James, P.E., P.L.S., (CO) Transportation Specialist, Federal Highway Administration
Theodore G. Burch, P.E., Program Development Engineer, Federal Highway Administration, Montana Division, Helena
Alan C. Woodmansey, P.E., Operations Engineer, Federal Highway Administration, Billings District
Stefan Streeter, P.E., Billings District Administrator, Montana Department of Transportation
Gary Neville, Engineering Services Supervisor and EIS Reviewer, Billings District, Montana Department of Transportation
Bill Semmens, Biologist, Environmental Services Bureau, Montana Department of Transportation
Tom S. Martin, P.E., Environmental Services Bureau Chief, Montana Department of Transportation
Heidy Bruner, P.E., Engineering Section Supervisor, Environmental Services, Montana Department of Transportation
Tom Gocksch, P.E., Environmental Project Development Engineer, Environmental Services, Montana Department of Transportation
Mark J. Studt, P.E., Consultant Project Engineer and EIS Reviewer, Montana Department of Transportation

CHAPTER 6 DISTRIBUTION LIST

This chapter provides information about distribution lists for:

- Federal agencies
- State agencies
- Local agencies
- Public copies

6.1 Federal Agencies

U.S. Department of Agriculture
Natural Resources Conservation Service
Joliet Field Office
606 W. Front
Joliet, MT 59041
Attn: Gordy Hill, District Resource Conservationist

U.S. Department of Agriculture
Natural Resources Conservation Service
1629 Avenue D, #2
Billings, MT 59102
Attn: Shad Webber, District Resource Conservationist

U.S. Army Corps of Engineers
Omaha District Planning Division
106 S. 15th Street
Omaha, NE 68102-1618
Attn: Environmental and Economic Section

Helena Regulatory Office
10 W. 15th, Suite 2200
Helena, MT 59626
Attn: Montana Program Manager
Also to be distributed by FHWA:

U.S. Department of the Interior
Washington, DC
Fish and Wildlife Service
Lou Hanebury, Biologist
Fish and Wildlife Service, Montana Field Office
R. Mark Wilson, Field Supervisor

U.S. Environmental Protection Agency
Washington, DC

6.2 State Agencies

Montana Department of Environmental Quality
1520 E. 6th Ave.
P.O. Box 200901
Helena, MT 59620-0901
Attn: Tom Ellerhoff, Administration Officer

Montana Department of Natural Resources and Conservation
1625 11th Ave.
P.O. Box 201601
Helena, MT 59620-1601
Attn: Mary Sexton, Director

Southern Land Office
Airport Park, Building IP9
1371 Rimtop Drive
Billings, MT 59105
Attn: Richard Moore, Area Manager

Montana Environmental Quality Council
Legislative Environmental Policy Office
P.O. Box 201704
Helena, MT 59620-1704

Montana Fish, Wildlife & Parks
1420 E. 6th Ave.
P.O. Box 200701
Helena, MT 59620-0701
Attn:Joe Maurier, Director
Jim Darling, Chief of Habitat and Protection Bureau Fisheries Division

2300 Lake Elmo Drive
Billings, MT 59105
Attn: Gary Hammond, Regional Supervisor

Montana State Library
1515 E. 6th Ave.
P.O. Box 201800
Helena, MT 59620-1800
Attn: Roberta Gebhardt, Collections Management Librarian

Montana State Historic Preservation Office
1410 8th Avenue
P.O. Box 201202
Helena, MT 59620-1202
Attn: Dr. Mark Baumler, Historian

6.3 Local Agencies

Crow Tribal Council
Crow Tribal Headquarters
P.O. Box 159
Crow Agency, MT 59022-0159
Attn: Sedric Black Eagle, Tribal Council Chairman
Alvin Not Afraid, Transportation Planning and Roads Director
Roberta Fitch, Environmental Protection Program Director

Yellowstone County Commissioners
P.O. Box 35000
Billings, MT 59101-5000
Attn: Bill Kennedy
John Ostlund
Jim Reno

Carbon County Commissioners
P.O. Box 887
Red Lodge, MT 59068-0887
Attn: John Prinkki
Doug Tucker
David Davidson

6.4 Public Copies

Copies of this document will be available at the following Montana locations:

Billings: MDT Billings District Office
424 Morey

Parmly Billings Library
510 N. Broadway

Yellowstone County Commissioners Office
217 North 27th Street, Room 403

Helena: Montana State Library
1515 E. 6th Avenue

Joliet: Joliet Community Library
300 N. Park Street

Laurel: Laurel Public Library
720 W. Third Street

Red Lodge: Carbon County Commissioners' Office
17 W. Eleventh Street

Carnegie Library
3 West 8th

CHAPTER 7 COMMENTS AND COORDINATION

The procedures for preparing a final environmental impact statement emphasize continuing the cooperative consultation that began during the early scoping phase among agencies, and the continued involvement of people who may either be interested in or affected by the proposed project. This chapter documents the specific elements for the public and agency involvement program, including:

- Agencies Contacted
- Cooperating Agencies
- Pre-Draft EIS Publication Coordination
- Post-Draft EIS Publication Coordination
- Future Public Involvement and Information Activities

7.1 Agencies Contacted

This section provides information about agencies with jurisdiction and/or permitting authority and other agencies, groups, or persons that have been contacted or that have contributed information.

7.1.1 Agencies with Jurisdiction and/or Permitting Authority

The following agencies have jurisdiction and/or permitting authority:

- Advisory Council on Historic Preservation (Review "Determination of Effect")
- Carbon County (FEMA Floodplain Development Permit)
- Federal Highway Administration
- Montana Department of Environmental Quality (MPDES authorization)
- Montana Fish, Wildlife and Parks (SPA 124)
- Montana Department of Natural Resources and Conservation
- Montana Department of Transportation
- Montana Environmental Quality Council
- Montana Governor's Office
- Montana Highway Commissioners
- Montana State Historic Preservation Office (Concur with "Determination of Effects")
- U.S. Army Corps of Engineers (CWA Section 404 Permit)
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service (Section 7, ESA Consultation)

7.1.2 Other Agencies, Groups, or Persons

Other agencies, groups, or persons that have been contacted or that have contributed information include the following:

- Beartooth Resource Conservation and Development, Carbon County
- Billings Planning Department
- Carbon County Clerks and Tax Assessors Office
- Carbon County Commissioners
- Carbon County Planning Department
- Carbon County Public Assistance
- Haus of Realty
- Laurel Administrative Office
- Laurel Ambulance Service
- Laurel Chamber of Commerce
- Laurel Planning Department
- Laurel Public Works
- Montana Bureau of Mines
- Montana Dakota Utility
- Montana Fish, Wildlife and Parks
- Montana State Historic Preservation Office
- Montana Power
- U.S. Fish and Wildlife Service
- USDA Natural Resources Conservation Service, Carbon County
- USDA Natural Resources Conservation Service, Yellowstone County
- Yellowstone County Planning Department
- Yellowstone Valley Electric

7.2 Cooperating Agencies

7.2.1 Agency Involvement

Agencies with jurisdiction within the proposed project's study area were contacted during the public scoping period to be cooperating agencies. The agencies that responded and indicated their commitment as cooperators are Montana Fish, Wildlife and Parks; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; and U.S. Department of Agriculture Natural Resources Conservation Service. The U.S. Environmental Protection Agency did not commit to being a cooperating agency, but it did express interest in being kept updated with the proposed project's progress and would provide comments when requested. Agency response letters are included in *Appendix G*. The Montana Department of Environmental Quality declined to be a cooperating agency.

7.2.2 Cooperating Agency Meeting

A meeting was held May 2, 2001, with the cooperating agencies, to provide information about the proposed US 212 project and to discuss the Biological Resources Work Plan. Since a field review had been conducted on November 1, 2000, during the Agency Scoping Meeting (see *Section 7.3.1.5, Agency Scoping Meeting*), a field review was not held. The alternatives under consideration were discussed to inform the agencies about the proposed project. Alternatives that were dropped were also described, along with the reasons for their removal from the subsequent EIS process. A variety of issues were raised and are part of the project's administrative record.

7.3 Pre-Draft EIS Publication Coordination

7.3.1 Public Scoping Meetings

Planning for the three public scoping meetings included determining appropriate locations for the meetings, providing widespread notification of the meetings in the project area, and conducting the meetings in a manner that would provide information about the proposed project and an opportunity for people to identify issues to be addressed in the EIS. Table 7-1 summarizes meeting locations, times, and attendance at the public scoping meetings.

TABLE 7-1
Public Scoping Meetings for the Rockvale to Laurel US 212 Reconstruction Project

Location	Date	Time	Attendance*
Graff Elementary School Laurel, Montana	August 30, 2000	4:30 to 8:30 p.m.	108
South Elementary School Laurel, Montana	November 13, 2000	4:30 to 9:00 p.m.	130
Graff Elementary School Laurel, Montana	December 12, 2001	4:30 to 8:30 p.m.	132

*Attendance includes project sponsors and staff

7.3.1.1 Notification Process Used

Public outreach activities were conducted to inform the community that the public scoping meetings would be held. News releases were sent to print and broadcast media to promote the meetings. Advertisements were placed in local papers several days before the meetings. In addition, the local media assisted by airing public service announcements and placing notices of the meetings in various community calendars. Fliers were also posted throughout the local community. A local television news station covered the second meeting. Postcards announcing the public meetings were sent to businesses; local agencies and governments; landowners in the project area; and residents expressing interest in the proposed project.

Table 7-2 lists public relations notices and media coverage for the first two public scoping meetings held in 2000.

TABLE 7-2
Public Relations Notices for Public Scoping Meetings Held in 2000—US 212 Reconstruction, Rockvale to Laurel EIS Project

Media Name	Announcement Type; Date
Advertisements	
Laurel Outlook	Advertisement; August and November 2000
Billings Gazette	Advertisement; August and November 2000
Carbon County News	Advertisement; November 2000
Public Service Announcements	
KTVQ, Channel 2	Meeting Announcements
KULR, Channel 8	Meeting Announcements
KSVI, Channel 6	Meeting Announcements
KBLG	Meeting Announcements
Media Coverage	
Carbon County News	Story; Friday, November 3, 2000
Carbon County News	Story; Wednesday, November 8, 2000
Billings Gazette	Story; Tuesday, November 14, 2000
Laurel Outlook	Story; Tuesday, November 14, 2000
Carbon County News	Story; Wednesday, November 29, 2000
KTVQ-2	Story; Monday, November 13, 2000; 10 p.m.
KTVQ-2	Story; Tuesday, November 14, 2000; 6 a.m.

For the third public scoping meeting, which was held on December 12, 2001, meeting advertisements were developed by the consultant and forwarded to the Montana Department of Transportation (MDT) for placement. Press releases were sent to local newspapers as well as to television and radio stations.

7.3.1.2 Public Scoping Meeting 1 (August 30, 2000)

The first public scoping meeting, held on August 30, 2000, from 4:30 p.m. to 8:30 p.m., was conducted in an open-house format. The purpose of the meeting was to invite comments from the public on the scope of the issues to be addressed in the EIS. This meeting was also used to assist in the development of a mailing list of interested individuals and organizations. Advertisements indicated this to the public prior to the meeting. Details can be found in the project's administrative record.

7.3.1.3 Public Scoping Meeting 2 (November 13, 2000)

The second public scoping meeting, held on November 13, 2000, from 4:30 p.m. to 9:00 p.m., was conducted in an open-house format. The objective of this public meeting was to solicit public comment on the alternatives that were developed based on input from the first public meeting. Consensus was also sought on which issues and alternatives were significant enough to

warrant full discussion or analysis in the EIS. Details can be found in the project's administrative record.

7.3.1.4 Public Scoping Meeting 3 (December 12, 2001)

The third public scoping meeting to discuss the proposed reconstruction of US 212 between Rockvale and Laurel was held on December 12, 2001, from 4:30 p.m. to 8:30 p.m. in an open-house format with informational displays. This meeting followed up on the November 13, 2000, meeting, which had updated the public and solicited comments on preliminary alternative road locations. The purpose of the meeting, hosted by MDT, was to update the public, solicit additional comments on preliminary alternative road locations, and review Technical Reports. Attendees were asked to review displays and comment on three alternative alignments. Details can be found in the project's administrative record.

7.3.1.5 Agency Scoping Meeting

A scoping meeting for state and federal natural resource and regulatory agencies was conducted on November 1, 2000, at MDT's Billings office. The objectives of the meeting included determining the needs and regulatory requirements of the agencies; allocation assignments; coordinating review and consultation requirements and schedules; identifying permitting requirements; and discussing additional meetings. The meeting was attended by representatives from the U.S. Environmental Protection Agency; the U.S. Fish and Wildlife Service; Montana Fish, Wildlife and Parks; the U.S. Army Corps of Engineers; and the U.S. Department of Agriculture Natural Resources Conservation Service. The proposed project alignments were presented to the agencies and an opportunity to comment was provided. A field tour to visit the project area was conducted. Comments made during the meeting and tour were recorded.

7.3.2 Pre-Draft EIS Publication Comments

Comments from the public and agency scoping meetings can be found in the project's administrative record. Additional comments were received at small group meetings.

7.3.2.1 Small Group Meetings

Three small group meetings were conducted during preparation of the Draft EIS that were related to the proposed project.

- **December 12, 2001**. During Public Meeting 3, a one-on-one policymaker meeting was held with The Honorable William E. Glaser, Representative SD 08, Montana. The following issues were discussed: the National Environmental Policy Act (NEPA) process, Alternative 4, and long-term social impacts.
- **January 30, 2002**. This small group meeting was attended by the Carbon County Commissioners, private landowners, MDT, and CH2M HILL. The purpose of the meeting was to present the project alternatives to the Commissioners and gain their support. The following issues were discussed: project alternatives to date, the project schedule, the NEPA process, typical sections, and the comparison matrix.

- **October 17, 2002**. The purpose of this small group meeting, held from 4 p.m. to 7 p.m., was to gain feedback from the landowners affected by the new alignment portions of Alternative 5A and Alternative 5B (preferred). The following landowners attended the meeting: Ray, Sharon, and Doug Kramer; Audrey Waddell; Jim Grewell; Mona Nutting; Kathy Wood; and Bill Hanna.

  During the meeting, the following issues were discussed: Alternative 5A and Alternative 5B (preferred); moving Alternative 5B (preferred) further south; intersections and further adjustments; the project schedule; irrigation; stock movement; access; and, especially, right-of-way acquisition.

  With the exception of Bill Hanna (who had previously received a map), the landowners who attended requested small versions of the maps presented at the meeting. At the end of the meeting, a large color rollout map was given to the Kramers. Black-and-white 11-inch by 17-inch maps were mailed to the other landowners. Two written comments were received at the meeting.

7.4 Post-Draft EIS Publication Coordination

7.4.1 Draft EIS Public Hearing (December 11, 2007)

The public hearing was held to receive formal public input on the Draft EIS that disclosed environmental effects of the proposed reconstruction of US 212 between Rockvale and Laurel. The public hearing was held on December 11, 2007, from 6:30 p.m. to 9:00 p.m. at the Laurel High School, Laurel, Montana. The meeting began as an open house with informational displays with MDT, FHWA, and CH2M HILL staff present to answer questions. A formal public hearing was conducted following the open house. The public hearing was recorded by a court recorder and an official transcript was prepared.

The following topics are discussed in this section:

- Meeting Attendees
- Materials Available
- Presentations
- Public Hearing
- Formats for Public Comment
- Notification Process Used
- Meeting Results
- Draft EIS Comments
- Small Group Meetings
- Other Public Involvement Media

7.4.1.1 Meeting Attendees

Approximately 165 members of the public and agency representatives attended the meeting, including residents, property owners, local government representatives from Yellowstone and Carbon counties, and representatives from the cities of Laurel, Red Lodge, Silesia, Fort

Rockvale, Boyd, Joliet, and Roberts. MDT representatives were from the local district office and from Helena. MDT representatives included Bruce Barrett, MDT Billings District Administrator; Stefan Streeter, the incoming MDT Billings District Administrator; Mark Studt, MDT's Consultant Design Engineer; Gary Neville, MDT District Engineer Services Supervisor; Brent McCann, MDT Right-of-Way Supervisor; Robert Padnos and Eric Bunstrum, MDT's Billings office; and Bill Semmens, MDT's Billings District Environmental Coordinator. The CH2M HILL consultant team was represented by the following team members: Steve Alters, Project Manager; Denny Mengel, EIS Principal Author; and David Baker, Project Engineer. Susan Shanstrom, Transcript Recorder, was also present. FHWA's representative was Alan Woodmansey.

7.4.1.2 Materials Available

Materials displayed at the meeting included welcoming displays, aerial maps of the project area, the NEPA process, project purpose and need, alternatives considered, and typical cross-sections.

7.4.1.3 Presentations

Formal presentations by project sponsors and staff to describe the proposed project were made from 7:00 p.m. to 8:00 p.m. Speakers included Bruce Barrett, MDT Billings District Administrator, and Steve Alters, CH2M HILL Project Manager. Following the presentations, a question-and-answer session provided attendees an opportunity to ask questions. Bruce Barrett and Steve Alters answered the questions.

Bruce Barrett began the presentation by giving a history of the activities that have preceded the public hearing. Steve Alters followed with a Microsoft® Office PowerPoint® presentation that described the NEPA process, presented the purpose and need for the project, and described how the alternatives were developed, revised, and evaluated in the Draft EIS. A question-and-answer session followed the presentations.

7.4.1.4 Public Hearing

A formal public hearing was held from 8:00 p.m. to 9:00 p.m. Bruce Barrett moderated the session. Formal public comments were received. *Appendix I* contains the transcript of the public hearing.

7.4.1.5 Formats for Public Comment

The meeting was designed to allow several formats and opportunities for public comment. These commenting opportunities included the following:

- Attendees were encouraged to sign in at the public hearing registration table. The registrants' names were added to the master mailing list, if they had not previously been included, so they would be able to receive future meeting notices and newsletters.
- Members of the design team and MDT staffed displays dispersed throughout the front of the auditorium. Comments were incorporated into the comment record.

- A Draft EIS comment form was provided at the meeting and a court recorder prepared a transcript of the entire meeting. Recorded comments were incorporated into the comment record.

7.4.1.6 Notification Process Used

Public outreach activities were conducted to inform the community that the public meeting and formal public hearing would be held. News releases were sent to print and broadcast media to promote the meeting and hearing. Advertisements were placed in local papers several days before the meeting and hearing. In addition, the local media assisted by airing public service announcements and placing notices of the meeting and hearing in various community calendars. Fliers were also posted throughout the local community. Local print and other public media covered the meeting and hearing. Postcards announcing the meeting and hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project.

Table 7-3 lists public relations notices and media coverage for the public hearing held in 2007.

TABLE 7-3
Public Relations Notices Announcing the Availability of the Draft EIS and Advertising the Public Hearing—US 212 Reconstruction, Rockvale to Laurel EIS Project

Media Name	Date
Notice of Availability	
News Release	
Laurel Outlook	November 2007
Billings Gazette	November 2007
Carbon County News	November 2007
Display Ads	
Laurel Outlook	November 2007
Billings Gazette	November 2007
Carbon County News	November 2007
Public Hearing Announcement	
News Release	
Laurel Outlook	November 2007
Billings Gazette	December 2007
Carbon County News	November 2007
Display Ads	
Laurel Outlook	November and December 2007
Billings Gazette	November and December 2007
Carbon County News	November and December 2007

7.4.1.7 Meeting Results

Products of the public meeting and hearing included the comment record, an expanded mailing list, the meeting record, and responses to questions.

MDT made the following commitments at the public scoping meeting:

- New information will be posted on the website.
- Attendees will be notified of future meetings.
- An official transcript record of the public hearing will be prepared.
- The public will have an opportunity to comment on the Final EIS.
- MDT will conduct a public meeting after the Final EIS is published.

7.4.1.8 Draft EIS Comments

A variety of comments was collected relating to the Draft EIS. Comments were received in the form of email, return of comment forms in the mail, comment forms turned in at the public hearing, letters, and verbally during the public hearing. The comments are displayed in *Appendix I*, along with MDT's response to each comment.

7.4.1.9 Small Group Meeting

One small group meeting was conducted related to the proposed project between the Draft EIS and the Final EIS. The meeting was held on February 20, 2008, from 3:00 p.m. to 6:00 p.m. at the Joliet Community Center. The purpose of the meeting was to meet with and hear comments from business owners in the town of Rockvale. Comments were heard concerning the Rockvale to Laurel EIS project, including impacts of modifications to the intersection of US 212 with US 310.

Four out of the five Rockvale businesses were represented. The only invitee who was not present was Todd Bell who owns the Rockvale Restaurant and Casino.

Mark Studt, MDT, and David Baker, CH2M HILL, explained the status of the project, the purpose of the meeting, and the environmental process. It was emphasized that the intersection figures shown in the Draft EIS are conceptual and, as such, many of the design details, such as specific access locations, would be determined during preliminary design after the development of a project access management plan.

The business owners were, in general, opposed to limiting access to the businesses to the north of the intersection. They were also opposed to a raised median, which would be one means of limiting access. The owners preferred a flush, continuous left-turn bay in the Rockvale area and unlimited business access. The owners were also opposed to an access road to the rear of the businesses and were concerned that trucks would not be able to negotiate the access road. It was explained that unrestricted access reduced the safety of a roadway.

7.4.1.10 Other Public Involvement Media

The proposed project has a website at http://projects.ch2m.com/Rockvale. On this website, people can view project information, as it becomes available, find out about upcoming meetings and hearings, browse project documents as they are released to the public, and contact project sponsors and staff to comment or ask questions.

7.5 Future Public Involvement and Information Activities

This section provides information about:

- Notice of Availability of Final Environmental Impact Statement
- Final EIS Availability

7.5.1 Notice of Availability of Final Environmental Impact Statement

The notice announcing the availability of the Final EIS will indicate the date, place, and time of a public hearing and where to forward comments and questions regarding the proposed project.

7.5.2 Final EIS Availability

Public availability notices will be sent to those on the mailing list. Copies of the Final EIS will be available at the following locations for public review:

Billings: MDT Billings District Office
424 Morey

Parmly Billings Library
510 N. Broadway

Yellowstone County Commissioners Office
217 North 27th Street, Room 403

Helena: Montana State Library
1515 E. 6th Avenue

Joliet: Joliet Community Library
300 N. Park Street

Laurel: Laurel Public Library
720 W. Third Street

Red Lodge: Carbon County Commissioners' Office
17 W. Eleventh Street

Carnegie Library
3 West 8th

In addition, a copy of the Final EIS will be available on the MDT website at http://www.mdt.mt.gov/pubinvolve/eis_ea.shtml.

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Appendixes

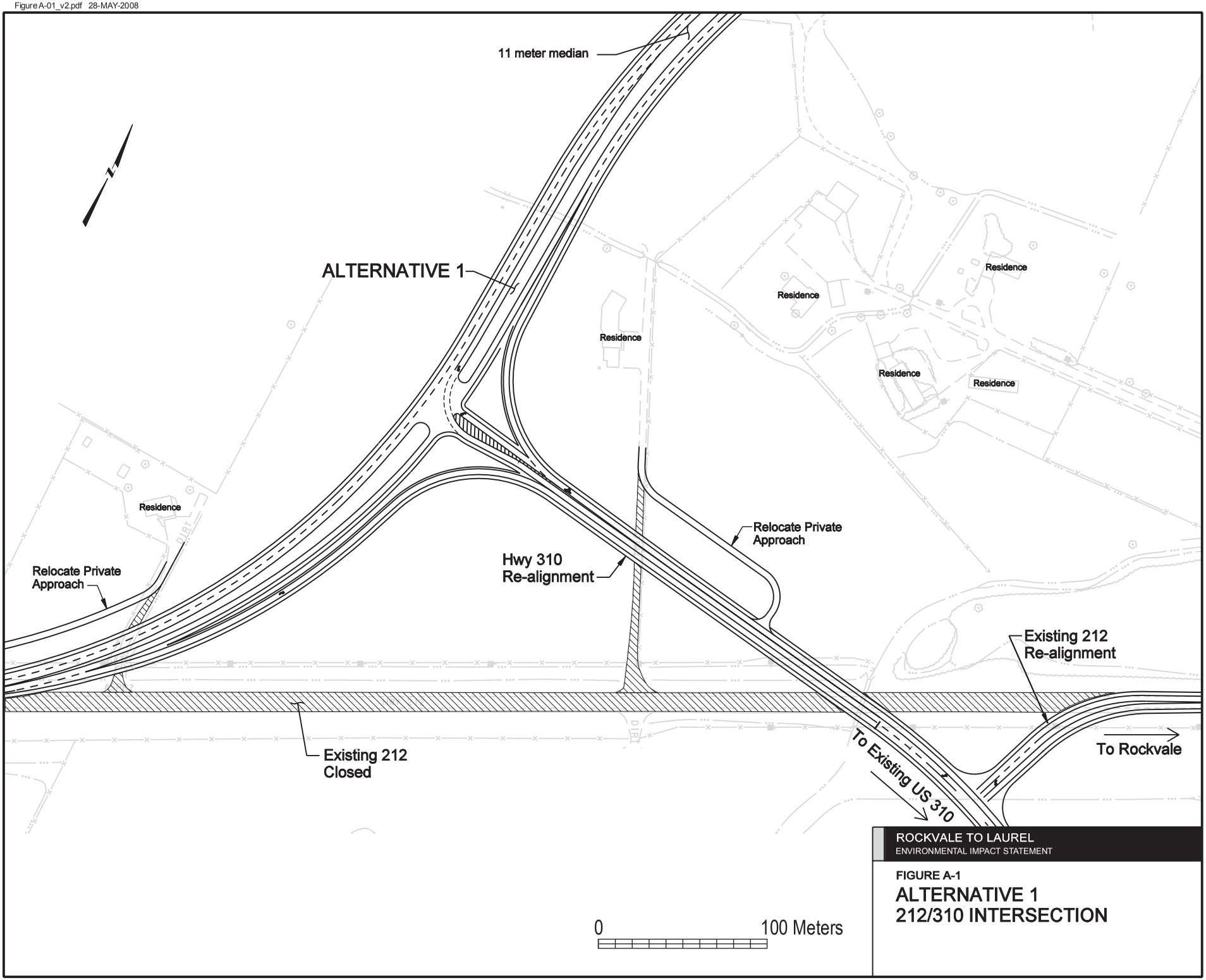
A: Intersection Alternatives
B: Species Information
C: Farmland Conversion Impact Rating for Corridor Type Projects
D: Noise Figures
E: Clean Water Act Section 404(b)(1) Evaluation
F: Glossary
G: Coordination Letters
H: Section 106 Determination of Effect
I: Draft EIS Comments and Responses

Appendix A: Intersection Alternatives

TABLE A-1
Key to Intersection Alternatives Figures

Figure No.	Description	Alt. 1	Alt. 2	Alt. 3A	Alt. 3B	Alt. 5A	Alt. 5B (Preferred)
A-1	212/310	X					
A-2	212/Farewell Road	X				X	X
A-3	212/White Horse Bench Road	X				X	X
A-4	212/North White Horse Bench Road	X				X	X
A-5a	212/PTW, Option 1	X				X	X
A-5b	212/PTW, Option 2	X				X	X
A-5c	212/PTW, Option 3	X				X	X
A-5d	212/PTW, Option 4	X				X	X
A-6	212/310		X		X	X	X
A-7	212/PTW		X				
A-8	212/Farewell Road		X				
A-9	212/South White Horse Bench Road		X				
A-10	212/North White Horse Bench Road		X				
A-11	212/PTW		X				
A-12	212/310			X			
A-13	212/PTW South			X			
A-14	212/Farewell Road			X			
A-15	212/PTW North			X	X		
A-16	212/Farewell Road				X		
A-17	212/PTW South					X	
A-18	212/PTW South						X
A-19	Railroad Crossing RP 47.9			X	X		
A-20	Railroad Crossing RP 48.9			X	X		
A-21	Railroad Crossing RP 50.2			X	X		
A-22	Railroad Crossing Byam Road			X	X		

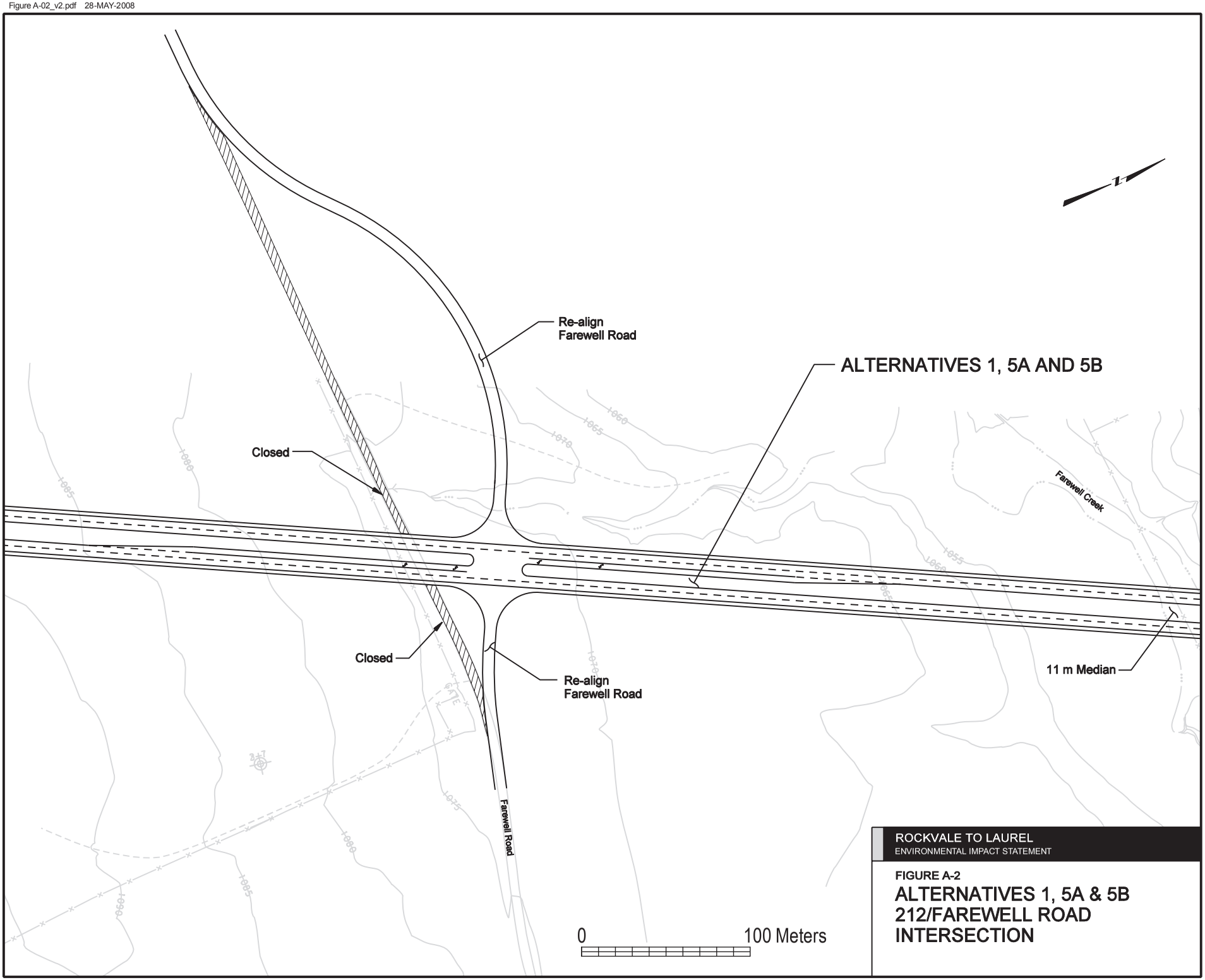
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-1
ALTERNATIVE 1
212/310 INTERSECTION

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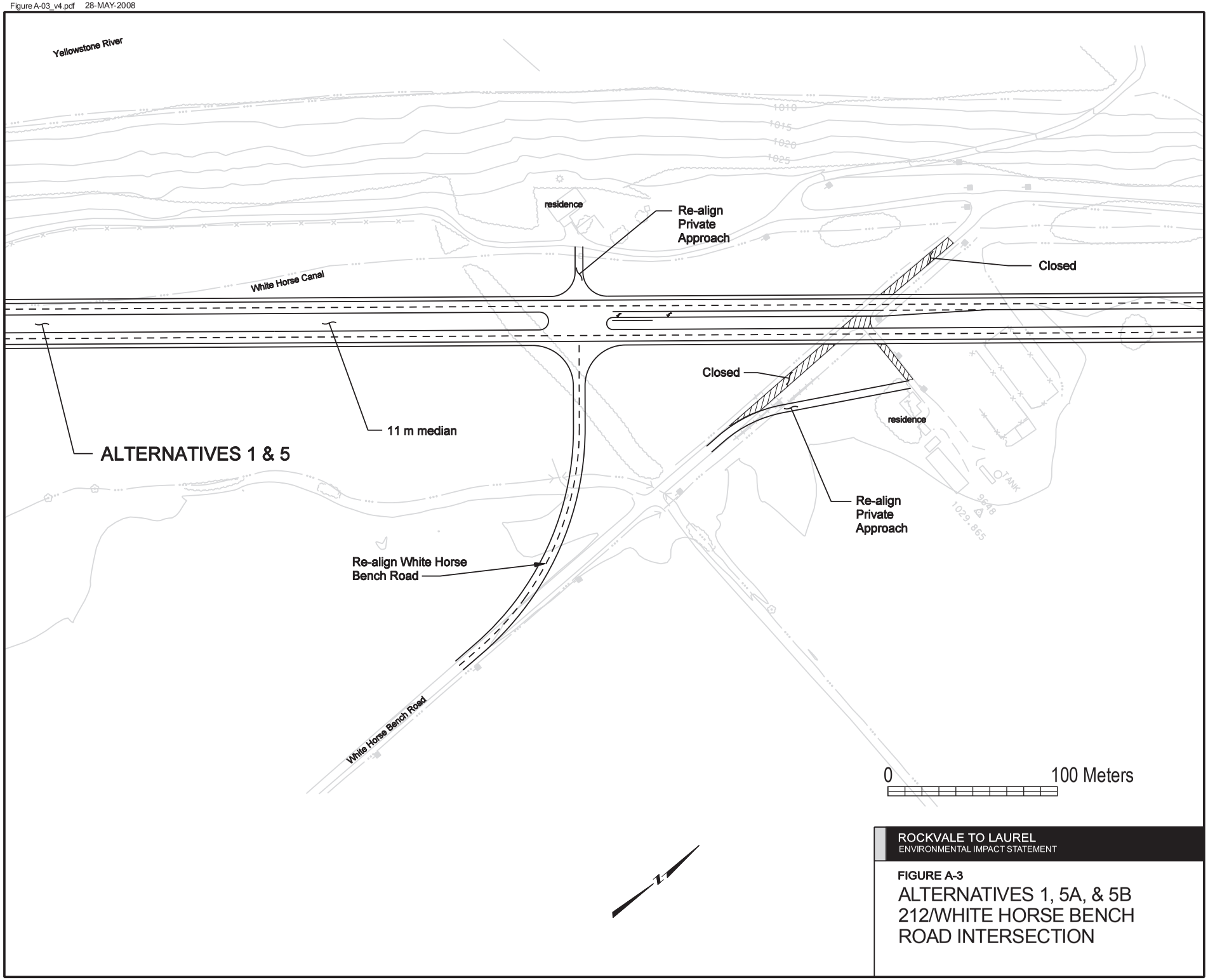


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-2

ALTERNATIVES 1, 5A & 5B 212/FAREWELL ROAD INTERSECTION

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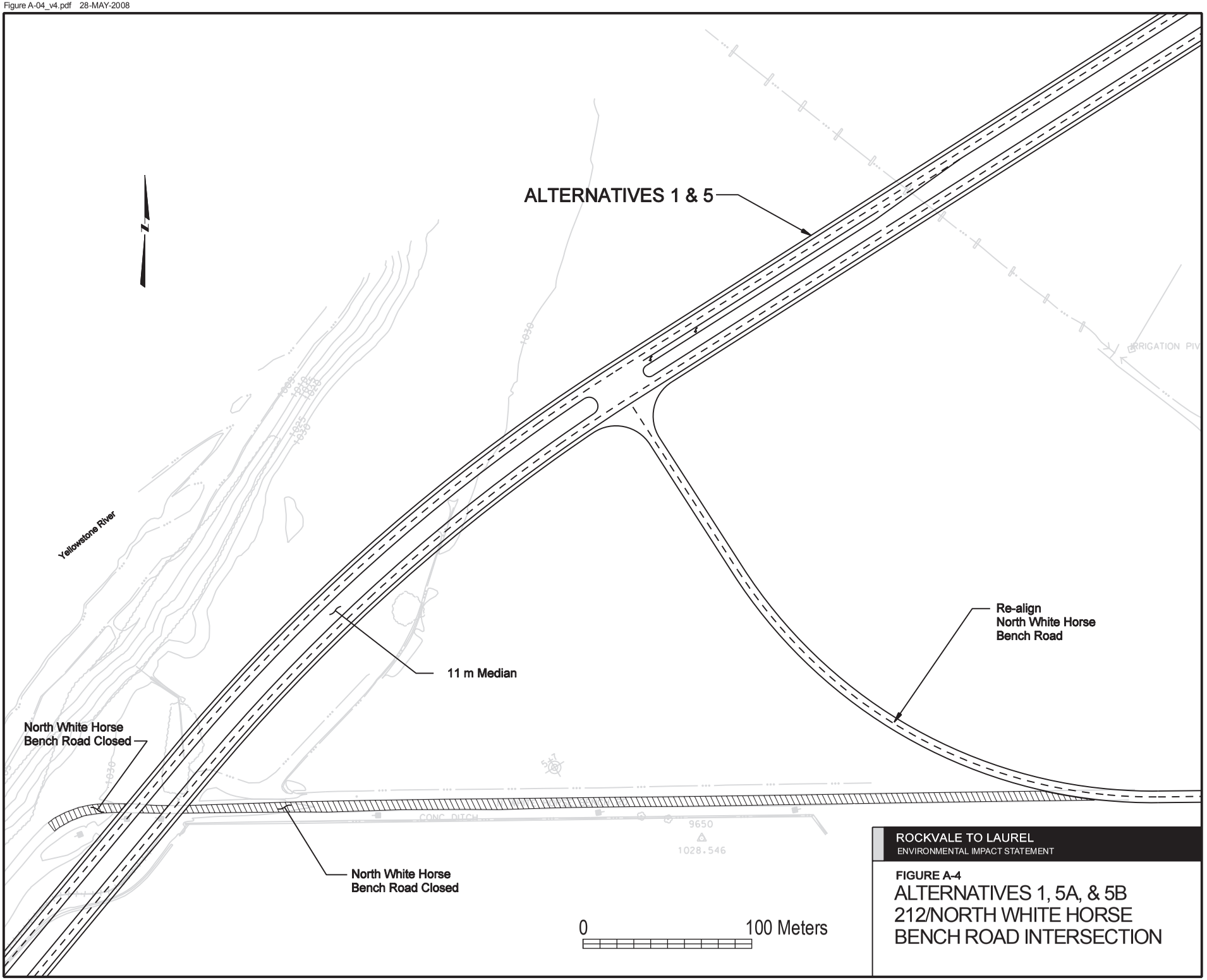


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-3

ALTERNATIVES 1, 5A, & 5B 212/WHITE HORSE BENCH ROAD INTERSECTION

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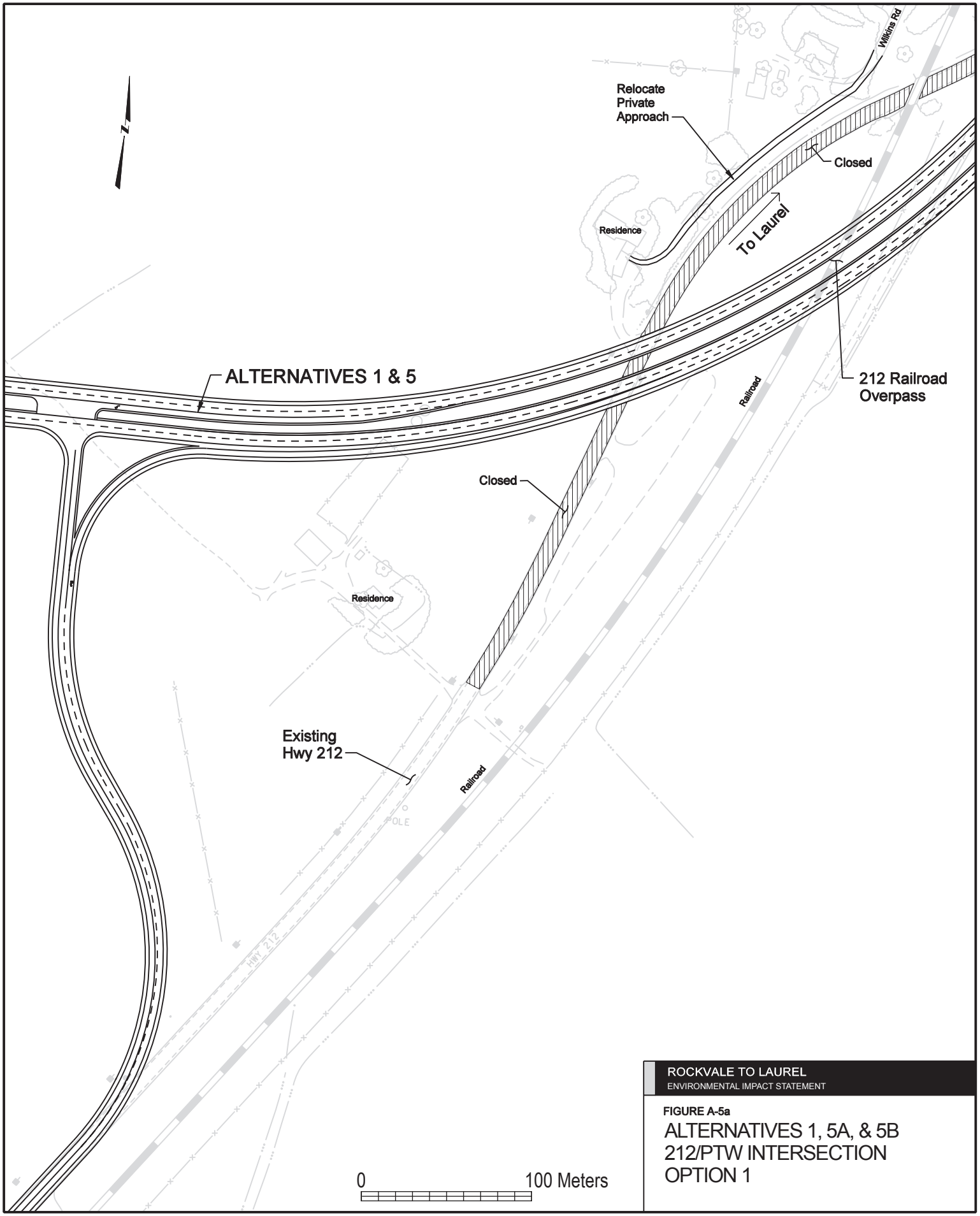


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-4

ALTERNATIVES 1, 5A, & 5B 212/NORTH WHITE HORSE BENCH ROAD INTERSECTION

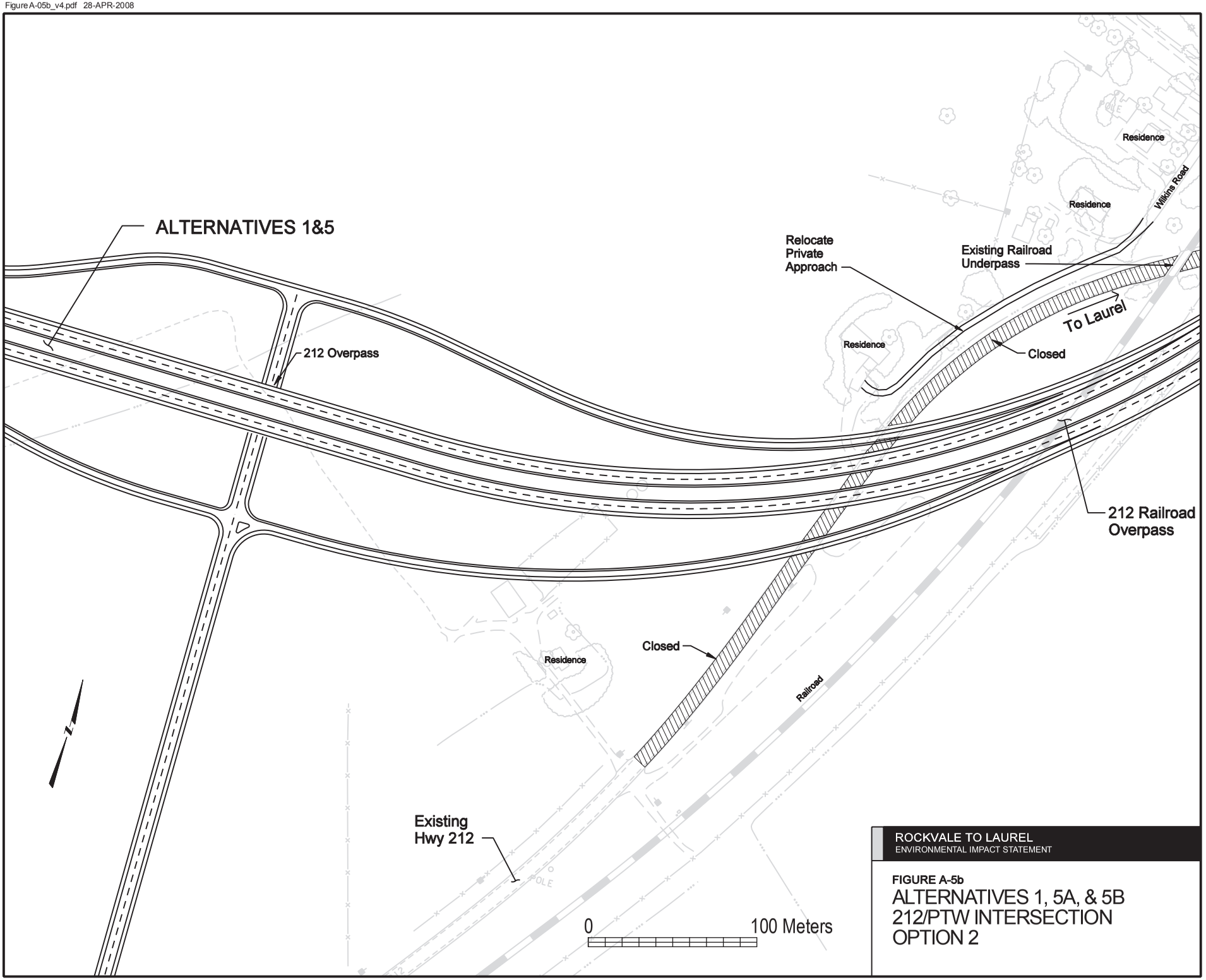
Figure A-05a_v4.pdf 28-MAY-2008



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-5a

ALTERNATIVES 1, 5A, & 5B
212/PTW INTERSECTION
OPTION 1

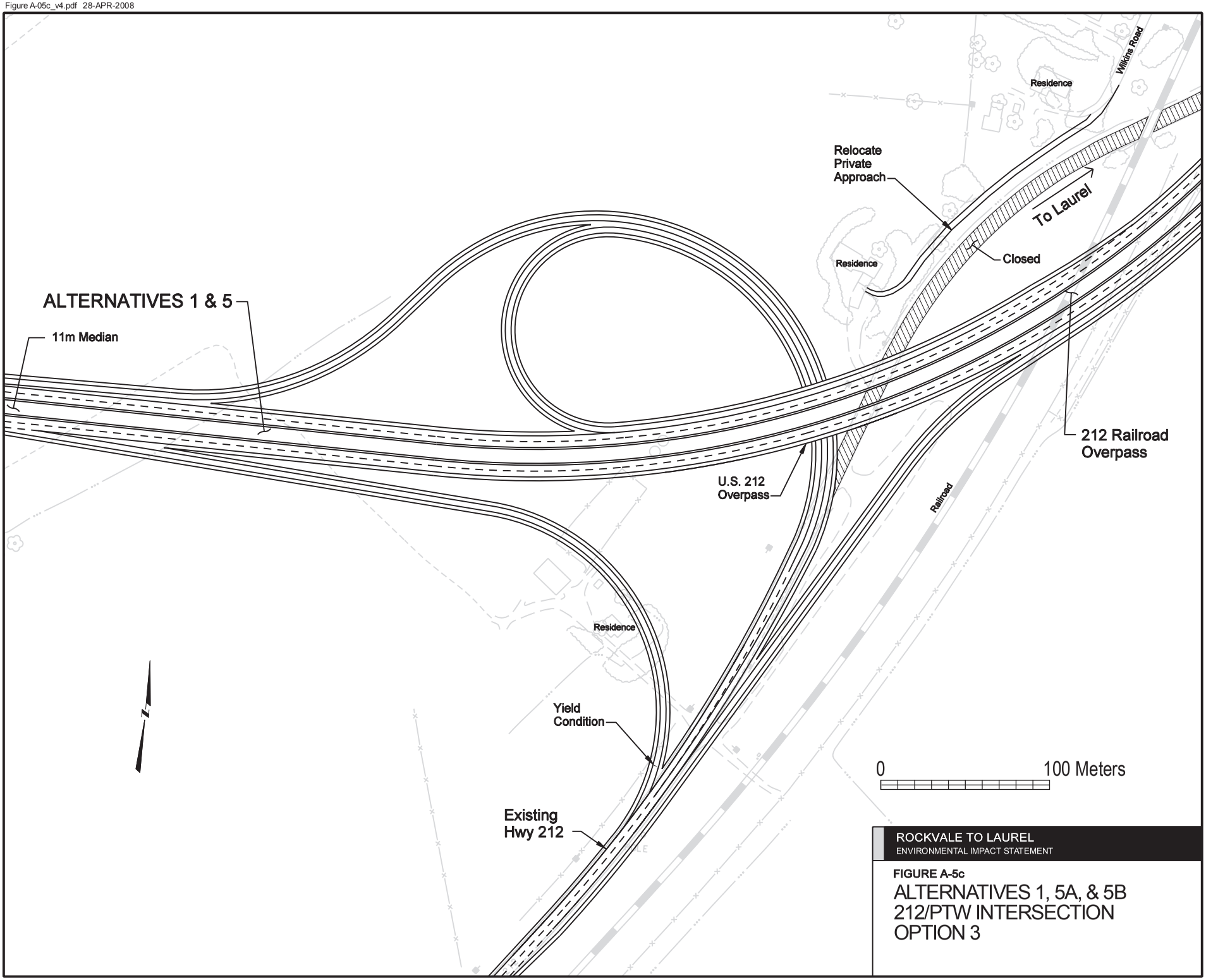


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-5b

ALTERNATIVES 1, 5A, & 5B
212/PTW INTERSECTION
OPTION 2

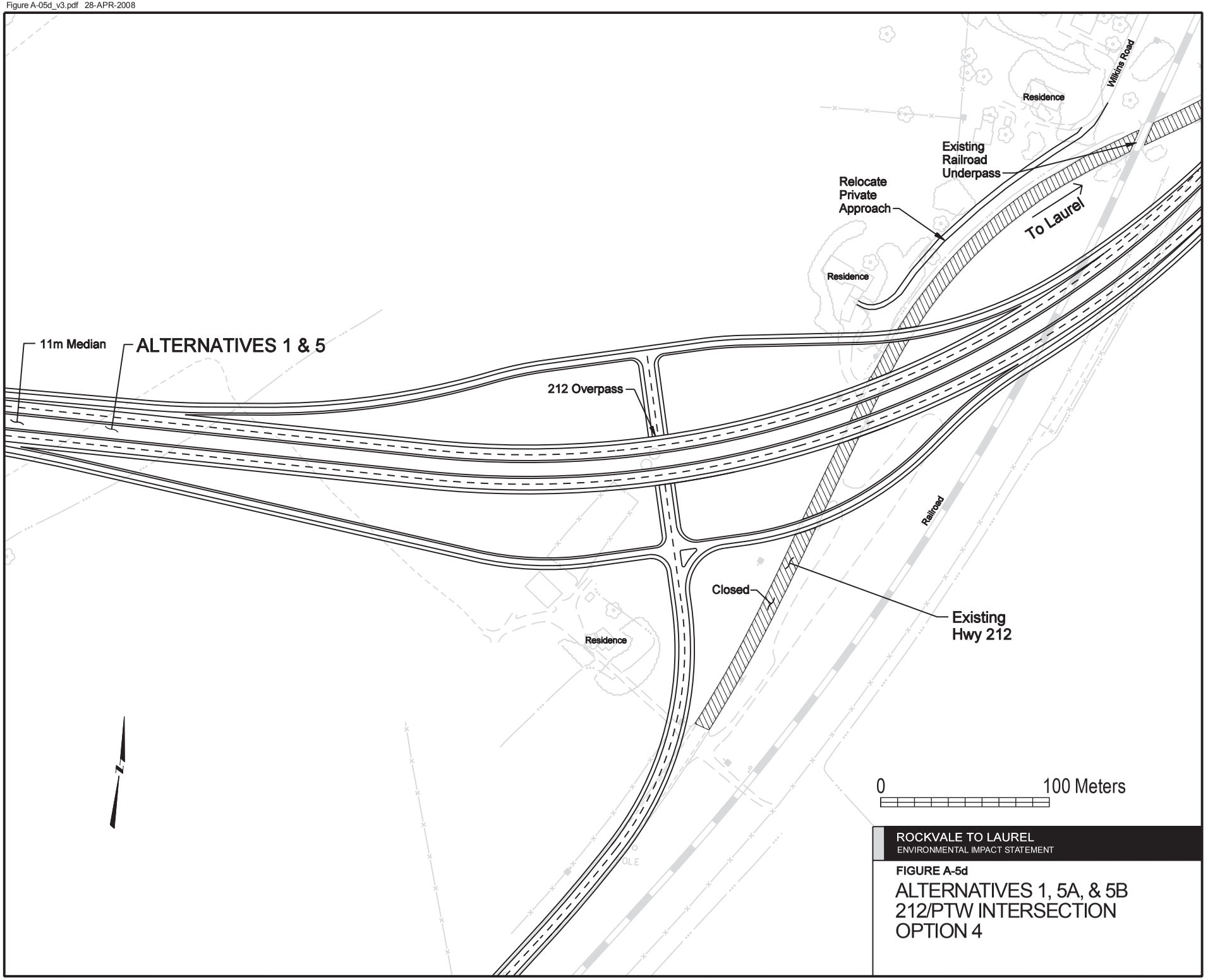
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-5c

ALTERNATIVES 1, 5A, & 5B
212/PTW INTERSECTION
OPTION 3

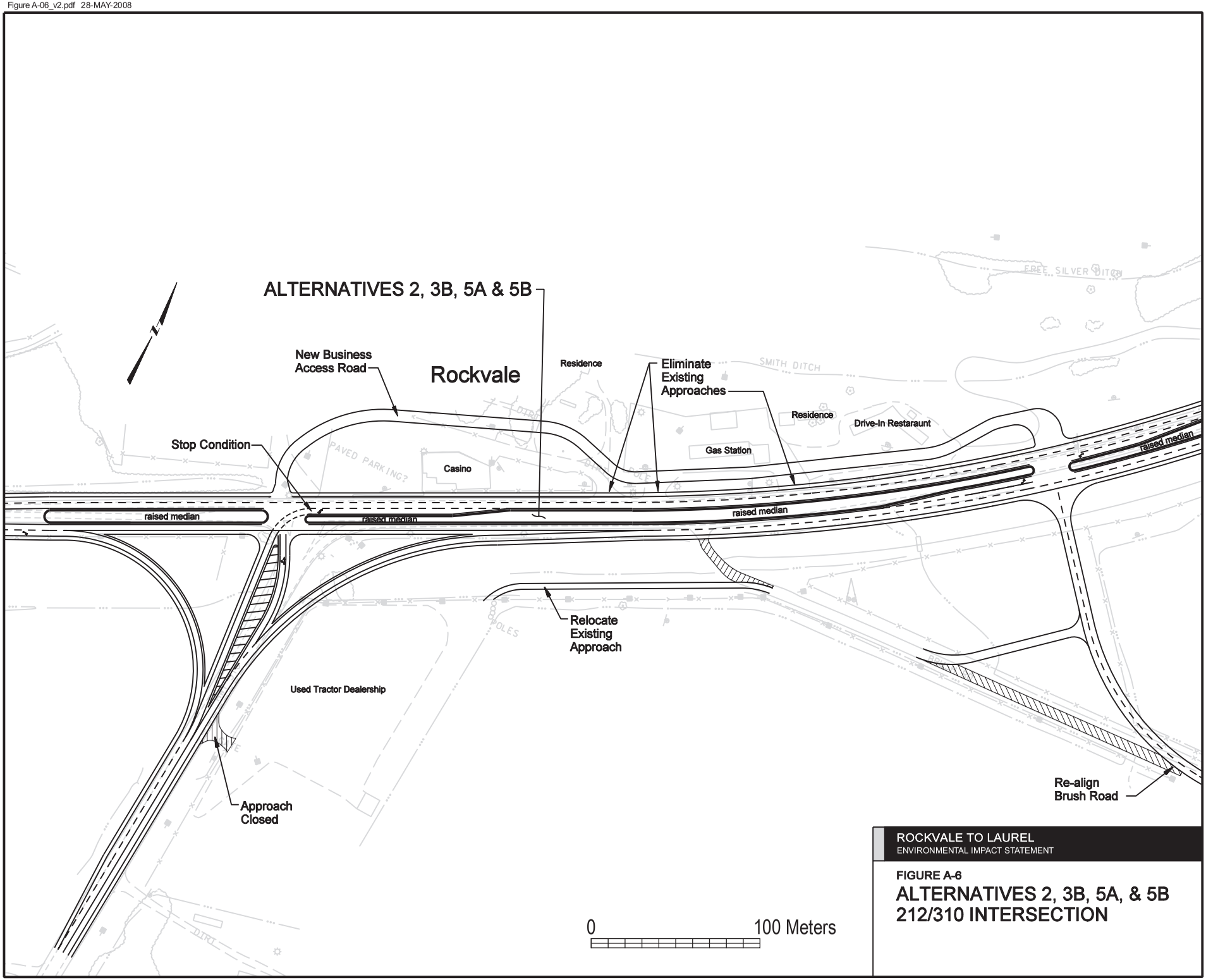


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-5d

ALTERNATIVES 1, 5A, & 5B 212/PTW INTERSECTION OPTION 4

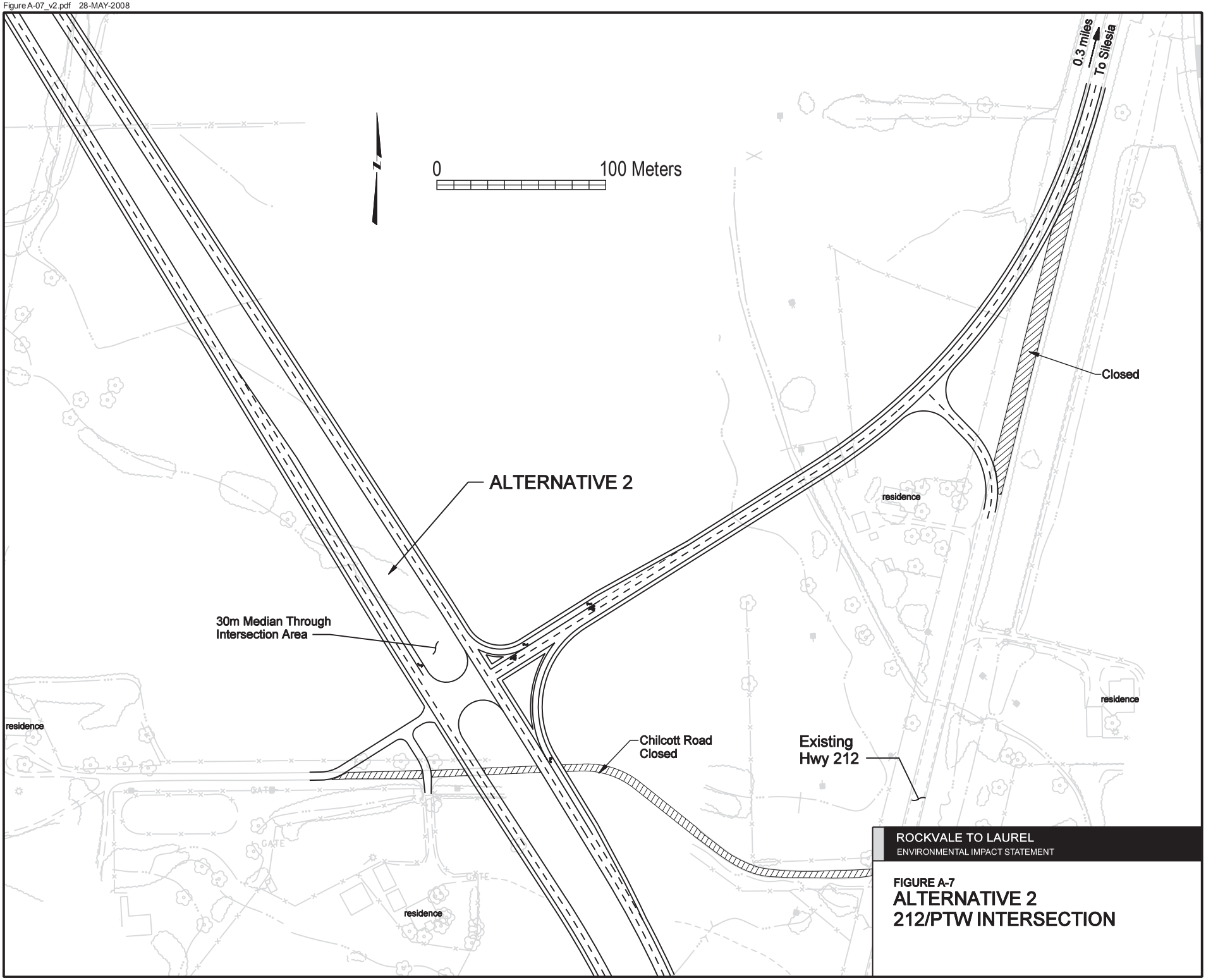
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-6

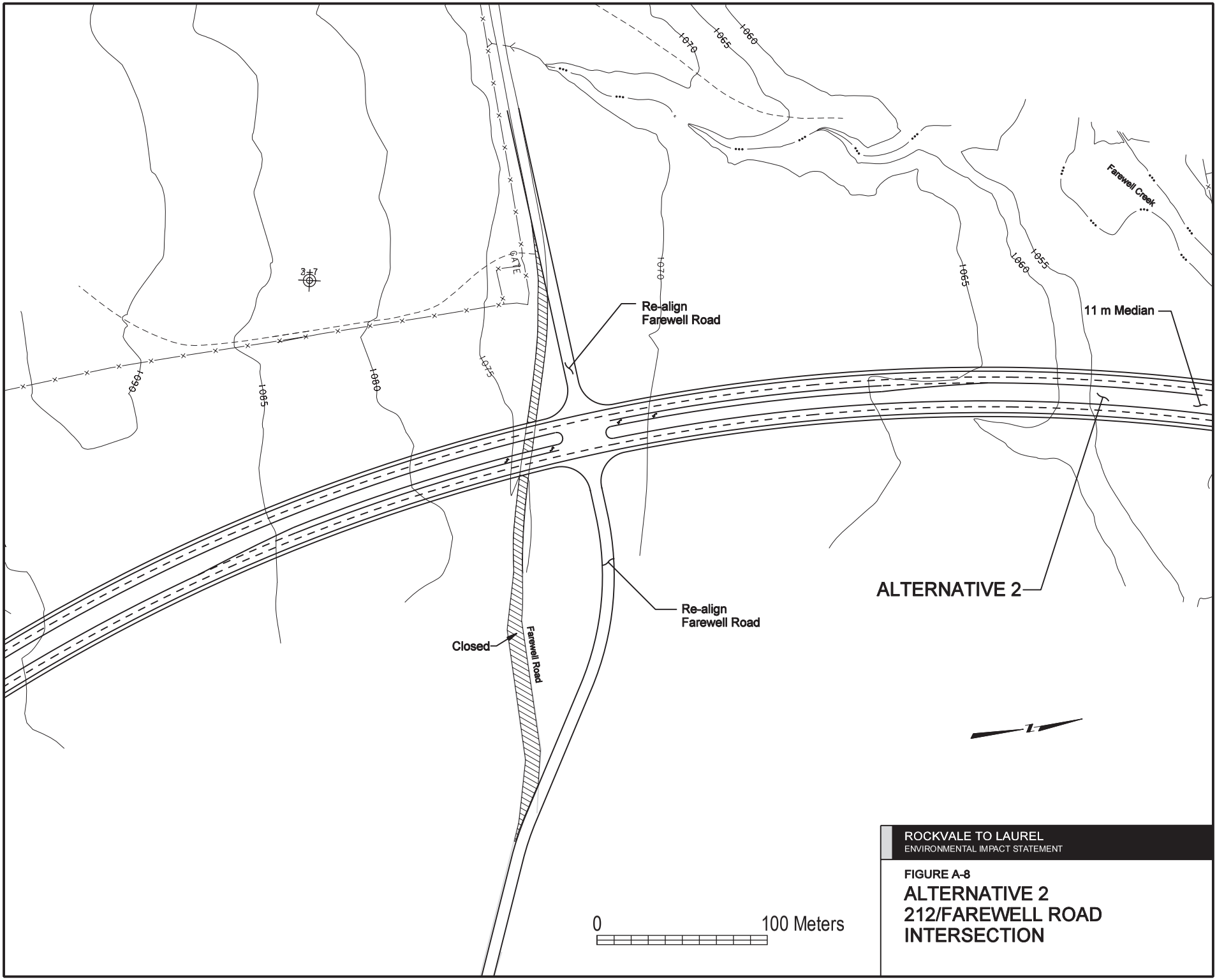
ALTERNATIVES 2, 3B, 5A, & 5B 212/310 INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-7
ALTERNATIVE 2
212/PTW INTERSECTION

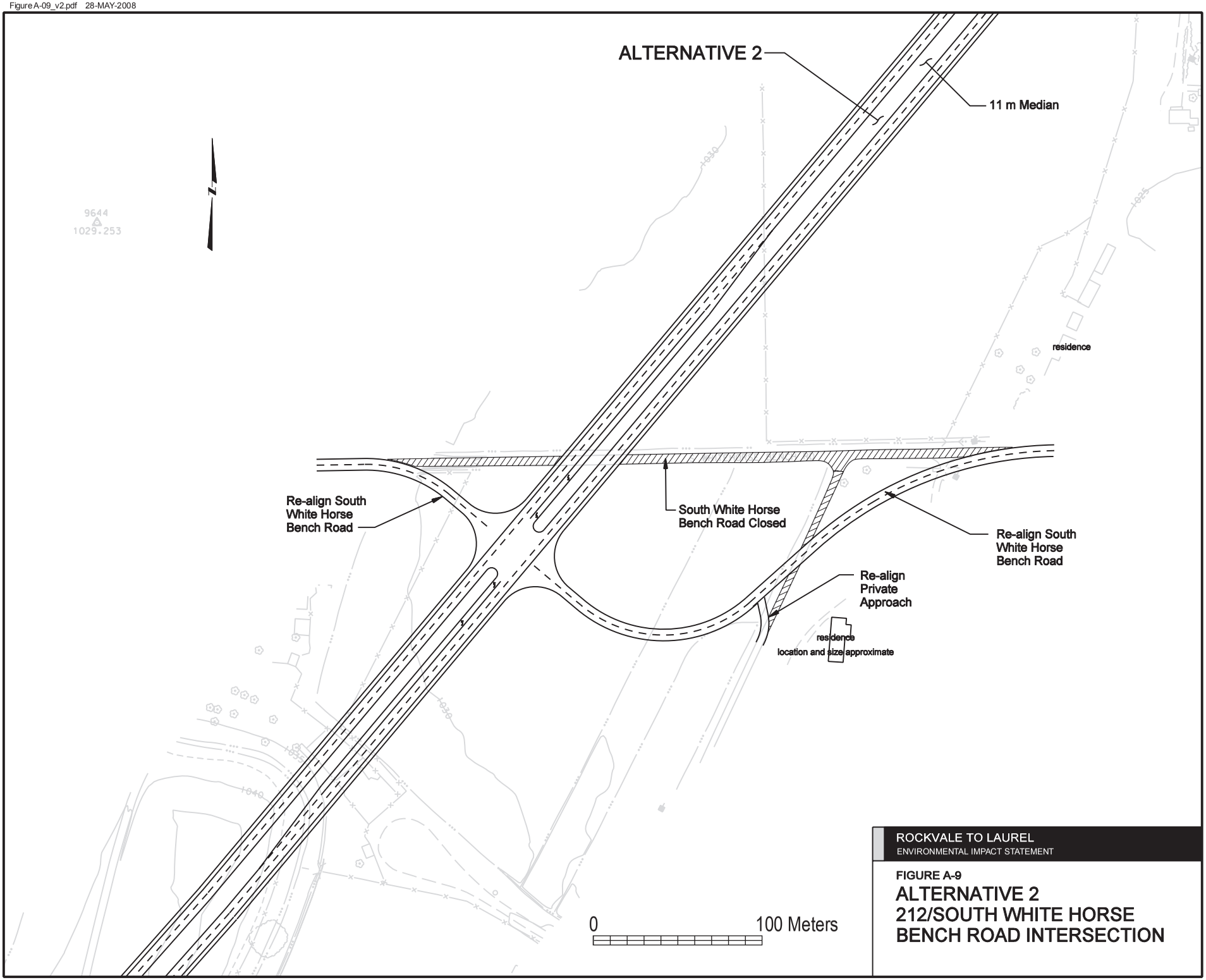
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-8

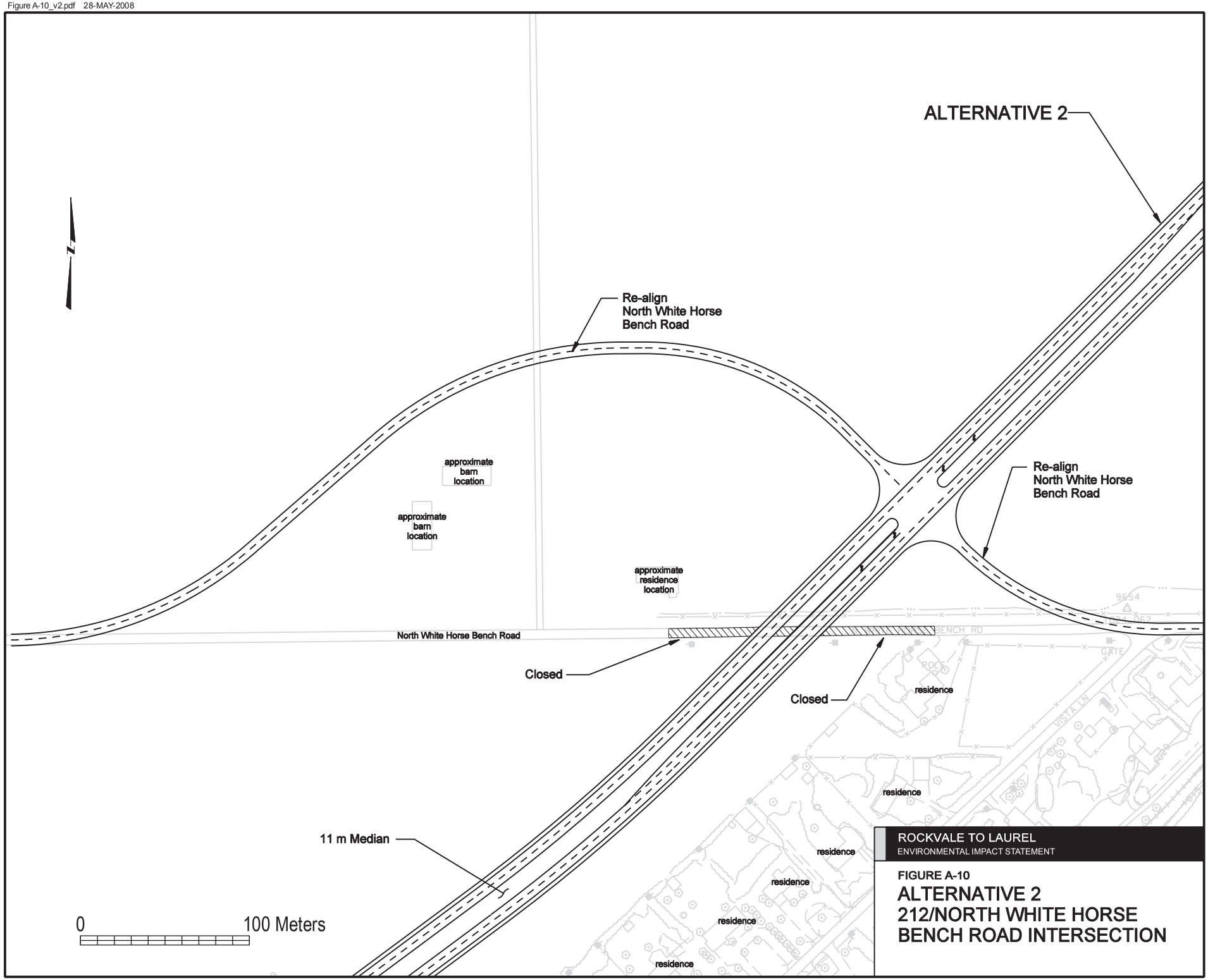
ALTERNATIVE 2 212/FAREWELL ROAD INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

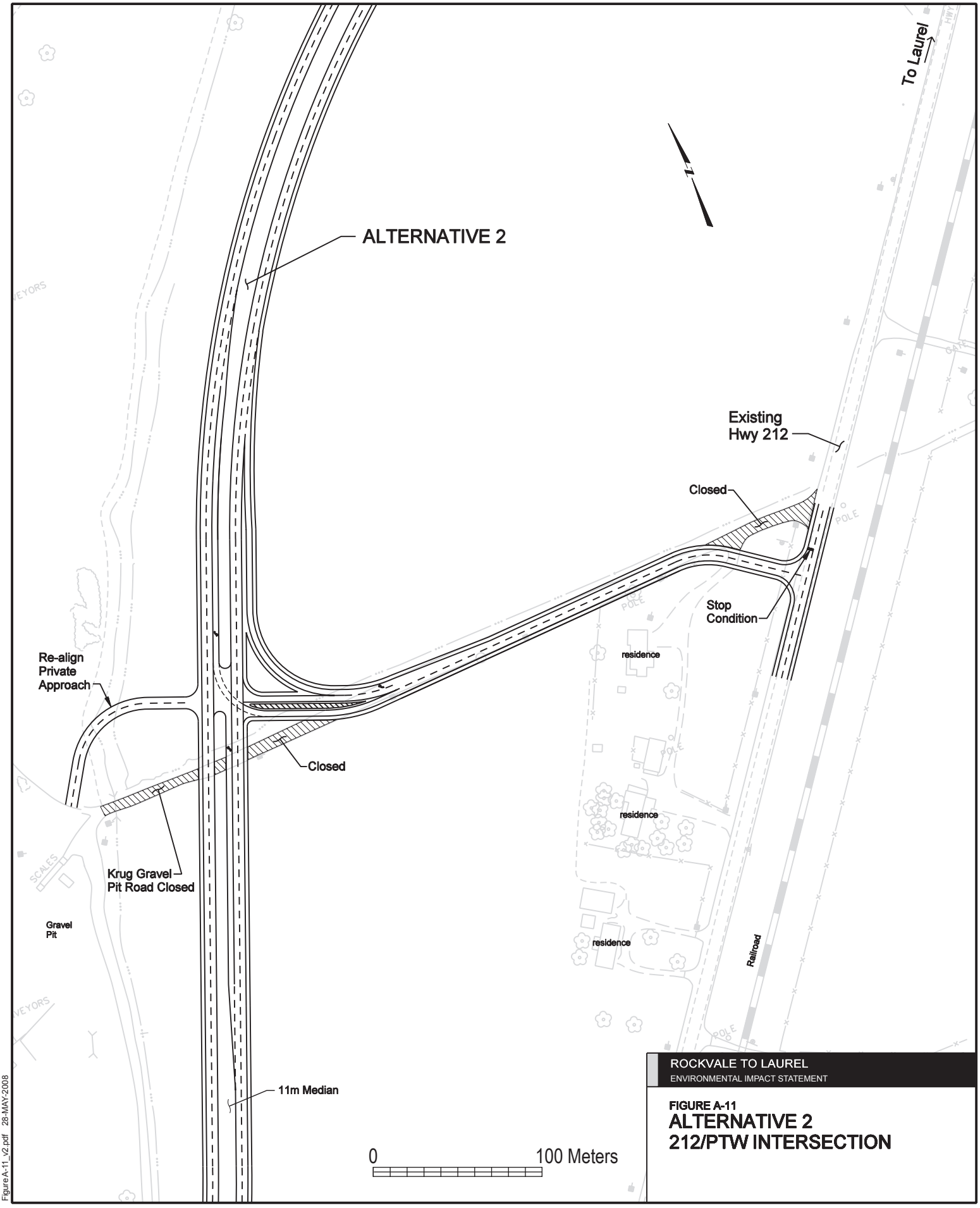
FIGURE A-9

ALTERNATIVE 2 212/SOUTH WHITE HORSE BENCH ROAD INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

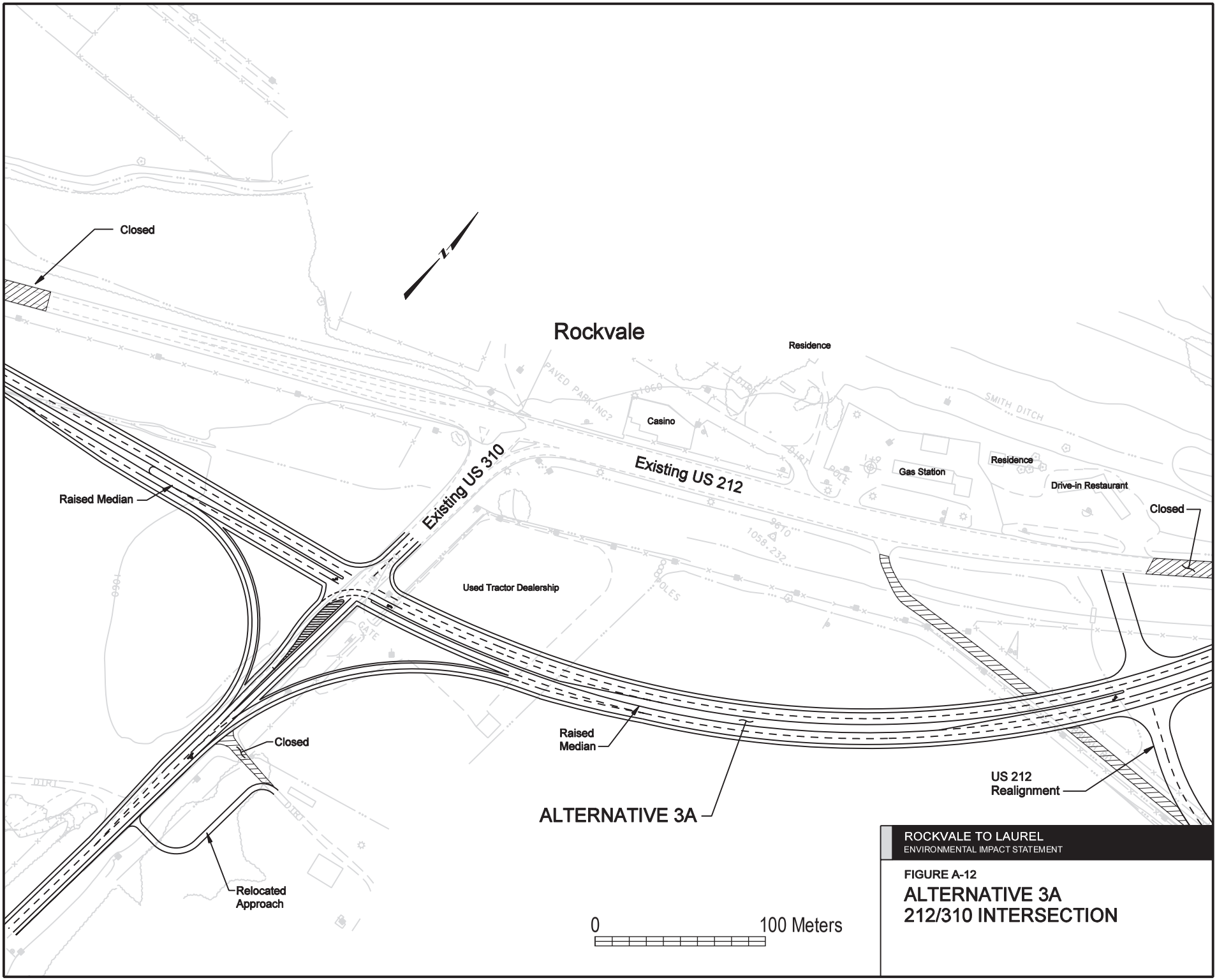
FIGURE A-10
ALTERNATIVE 2
212/NORTH WHITE HORSE
BENCH ROAD INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-11
ALTERNATIVE 2
212/PTW INTERSECTION

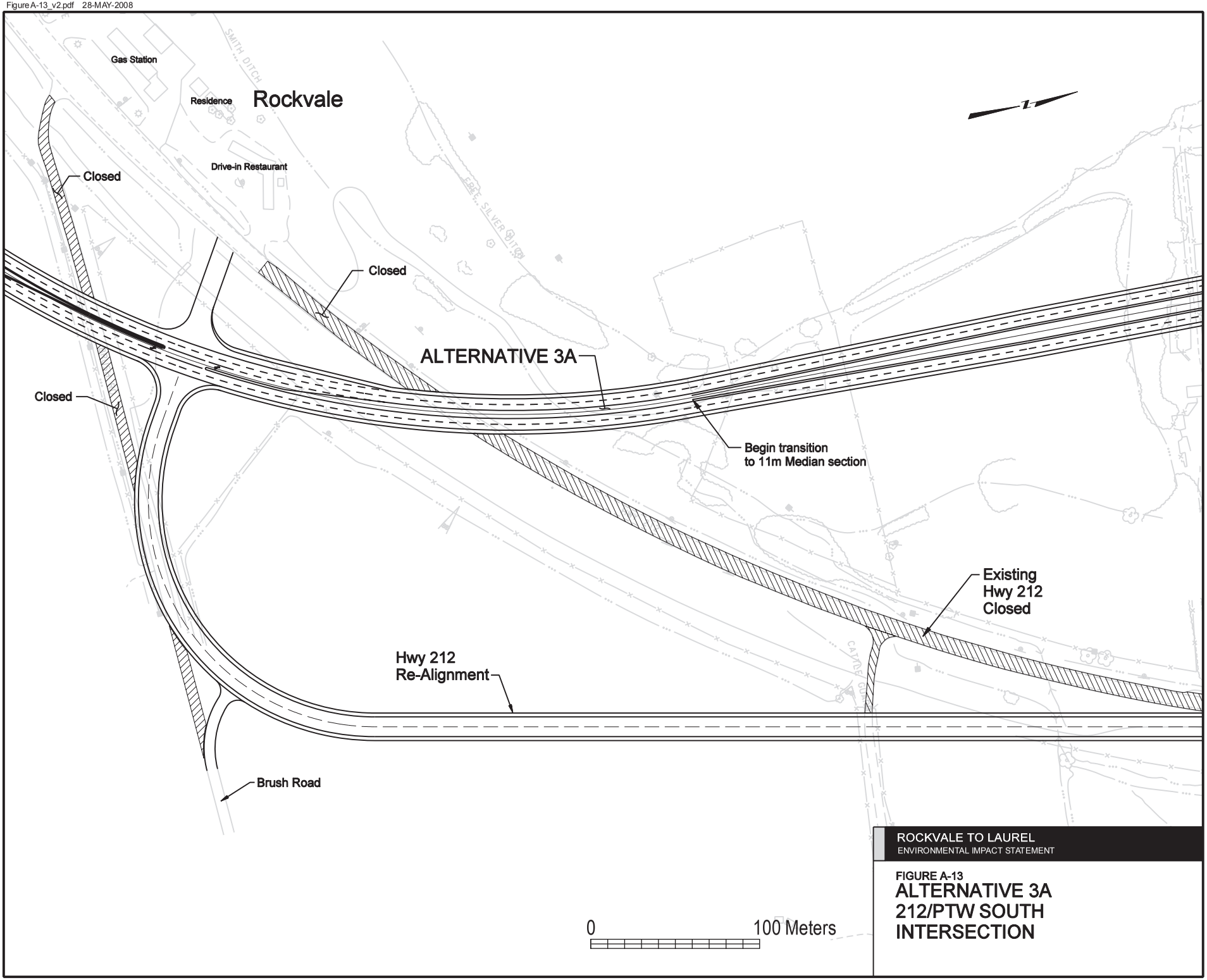
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

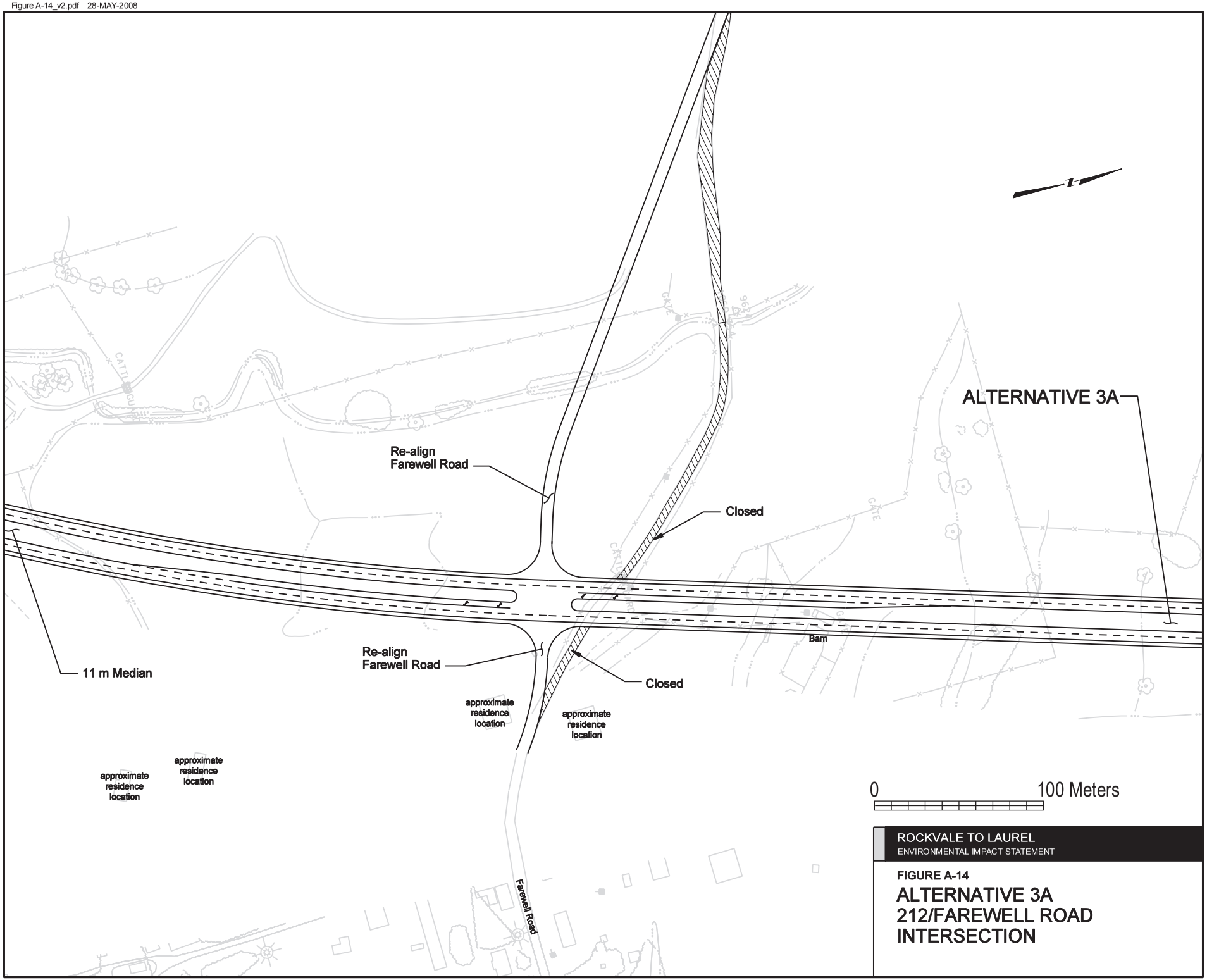
FIGURE A-12

ALTERNATIVE 3A 212/310 INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

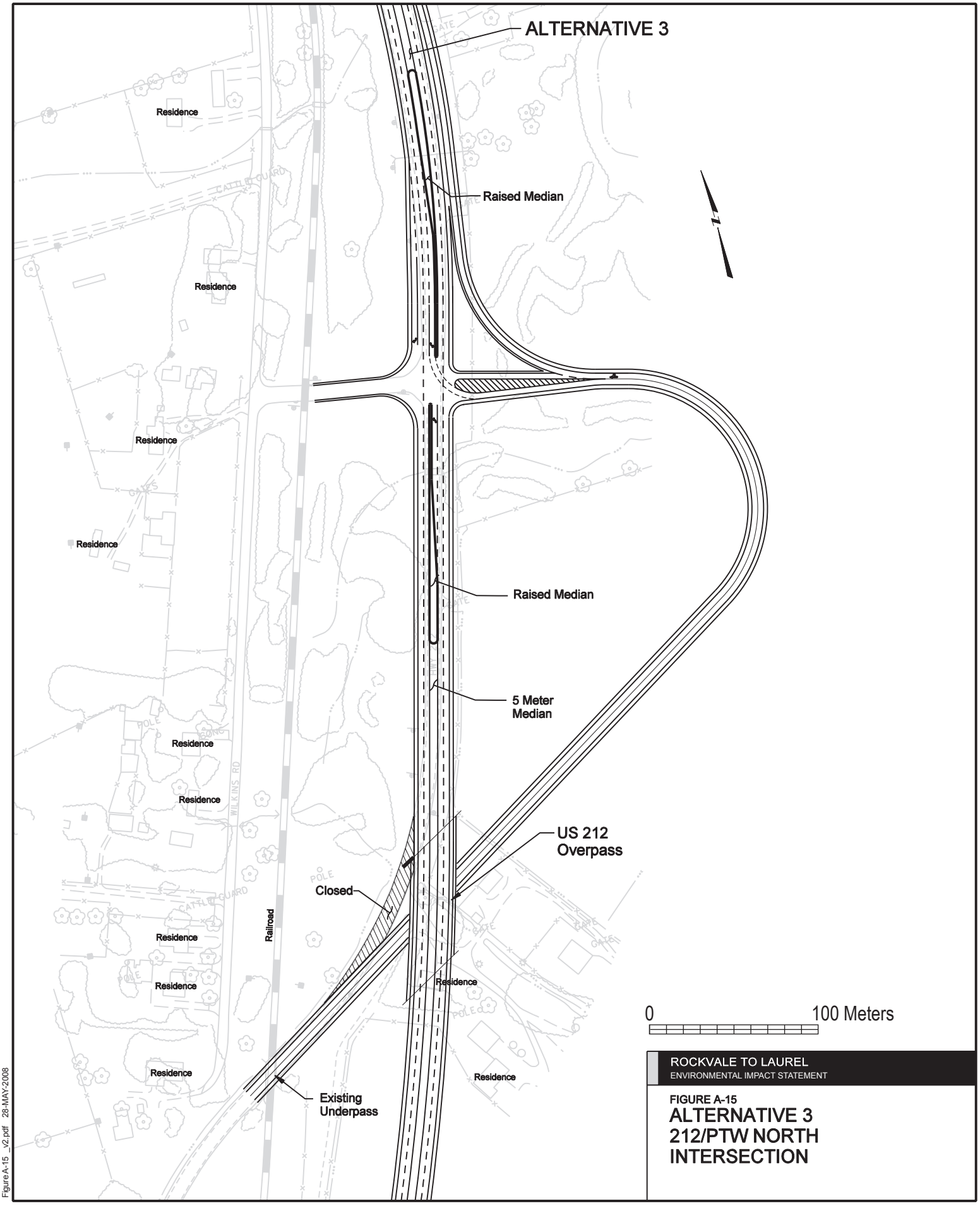
FIGURE A-13
ALTERNATIVE 3A
212/PTW SOUTH
INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-14

ALTERNATIVE 3A 212/FAREWELL ROAD INTERSECTION

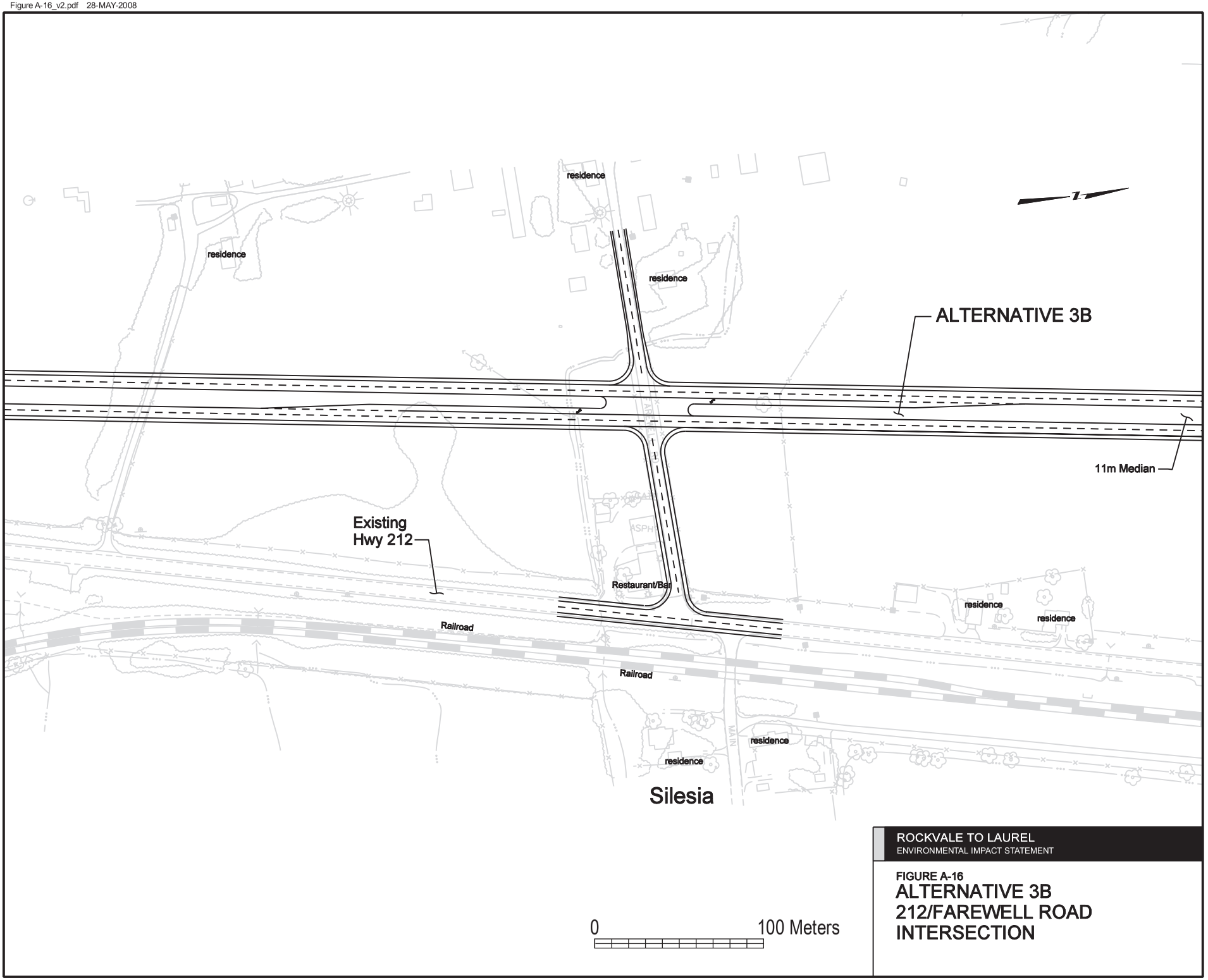


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-15
ALTERNATIVE 3
212/PTW NORTH
INTERSECTION

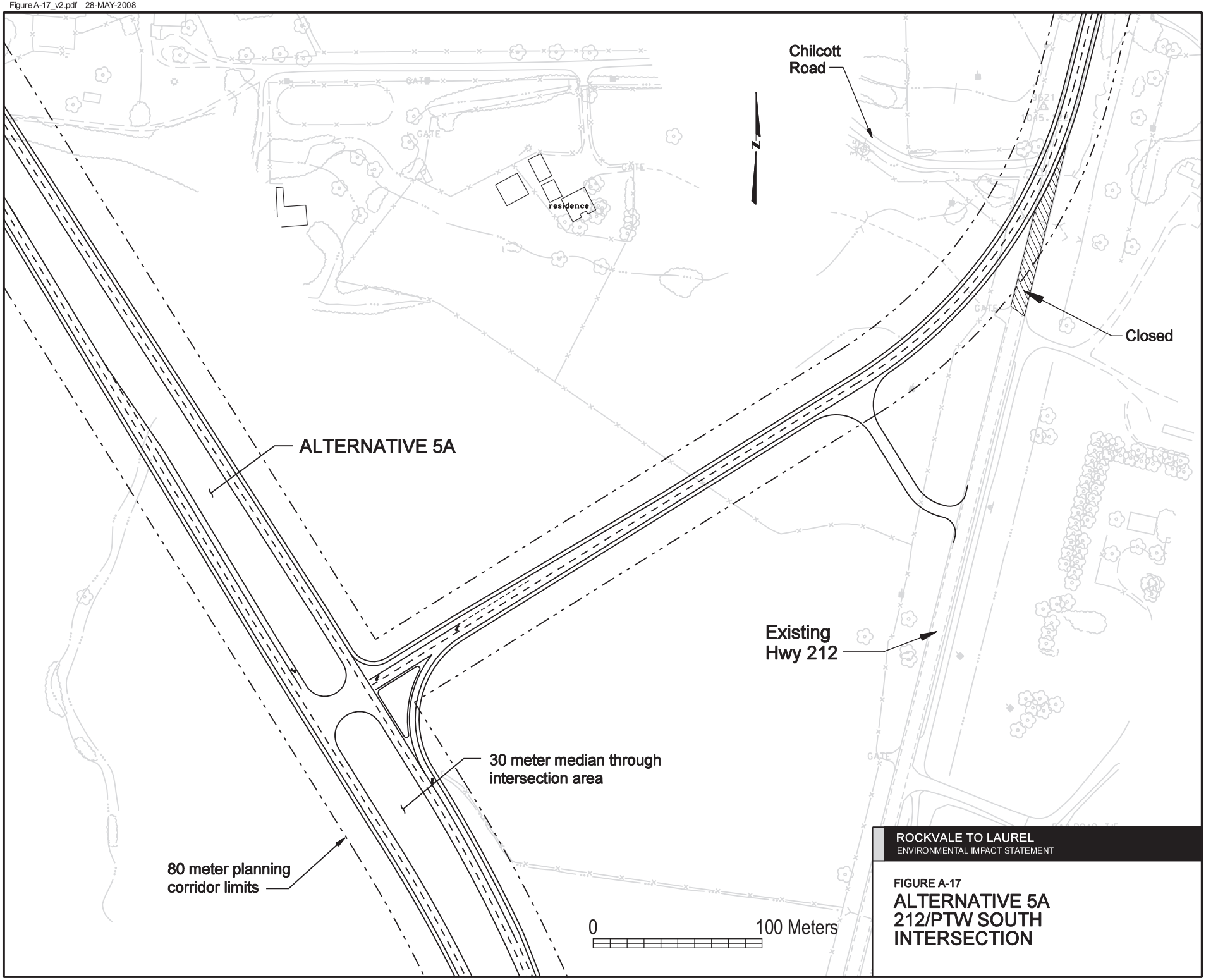
Figure A-15 _v2.pdf 28-MAY-2008

Figure A-16_v2.pdf 28-MAY-2008



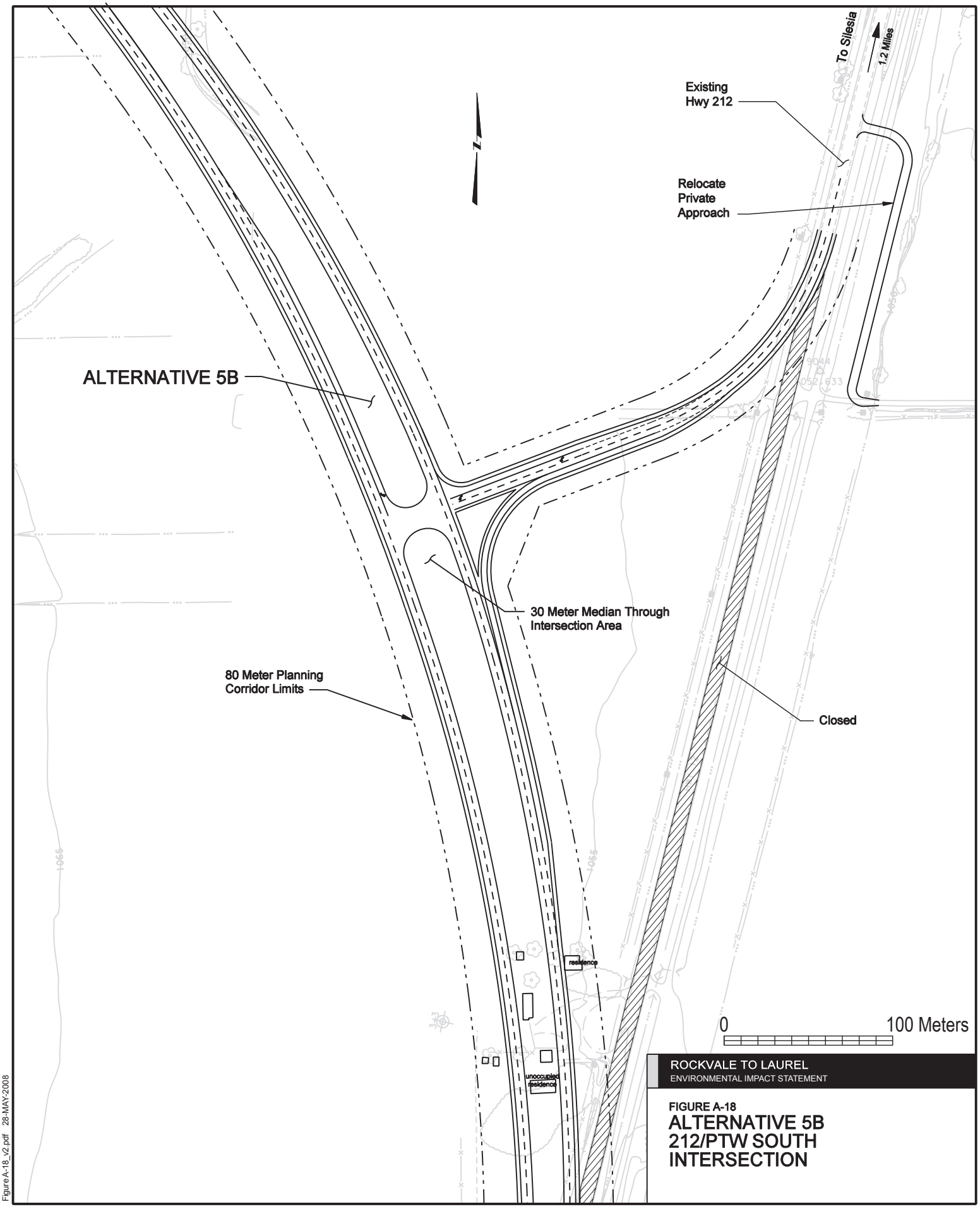
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-16
ALTERNATIVE 3B
212/FAREWELL ROAD
INTERSECTION



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-17
ALTERNATIVE 5A
212/PTW SOUTH
INTERSECTION

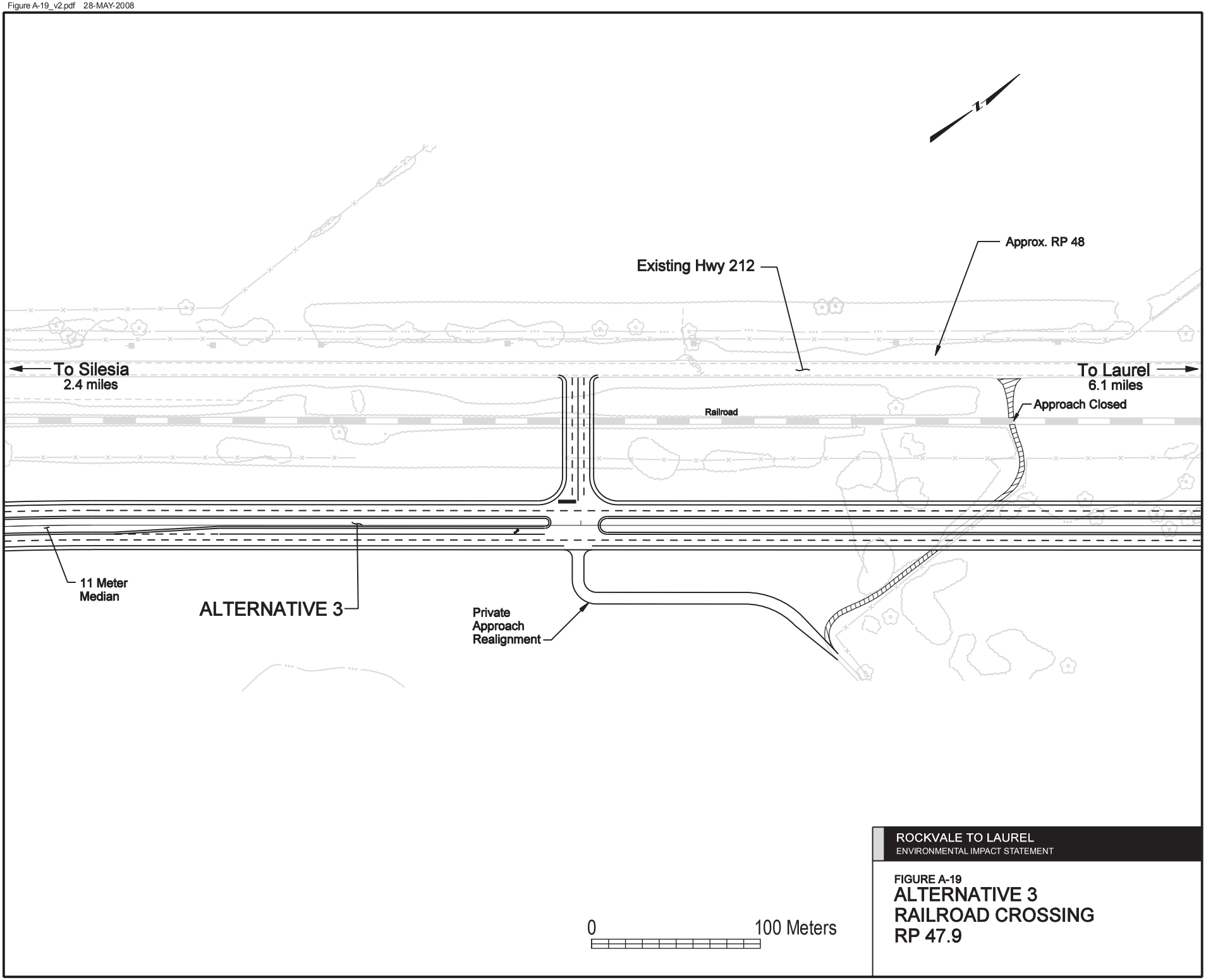


ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-18
ALTERNATIVE 5B
212/PTW SOUTH
INTERSECTION

Figure A-18_v2.pdf 28-MAY-2008

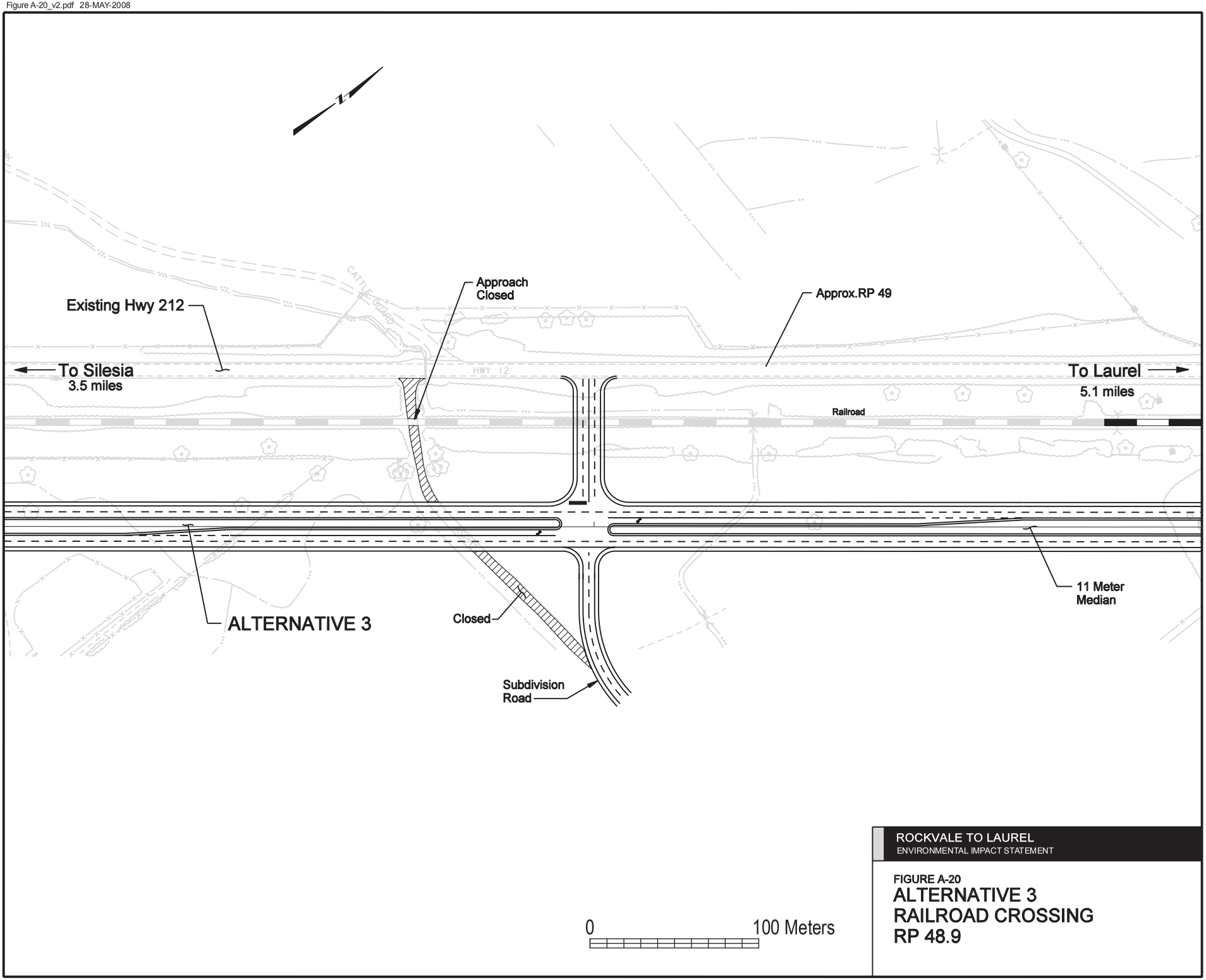
Figure A-19_v2.pdf 28-MAY-2008



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-19
ALTERNATIVE 3
RAILROAD CROSSING
RP 47.9

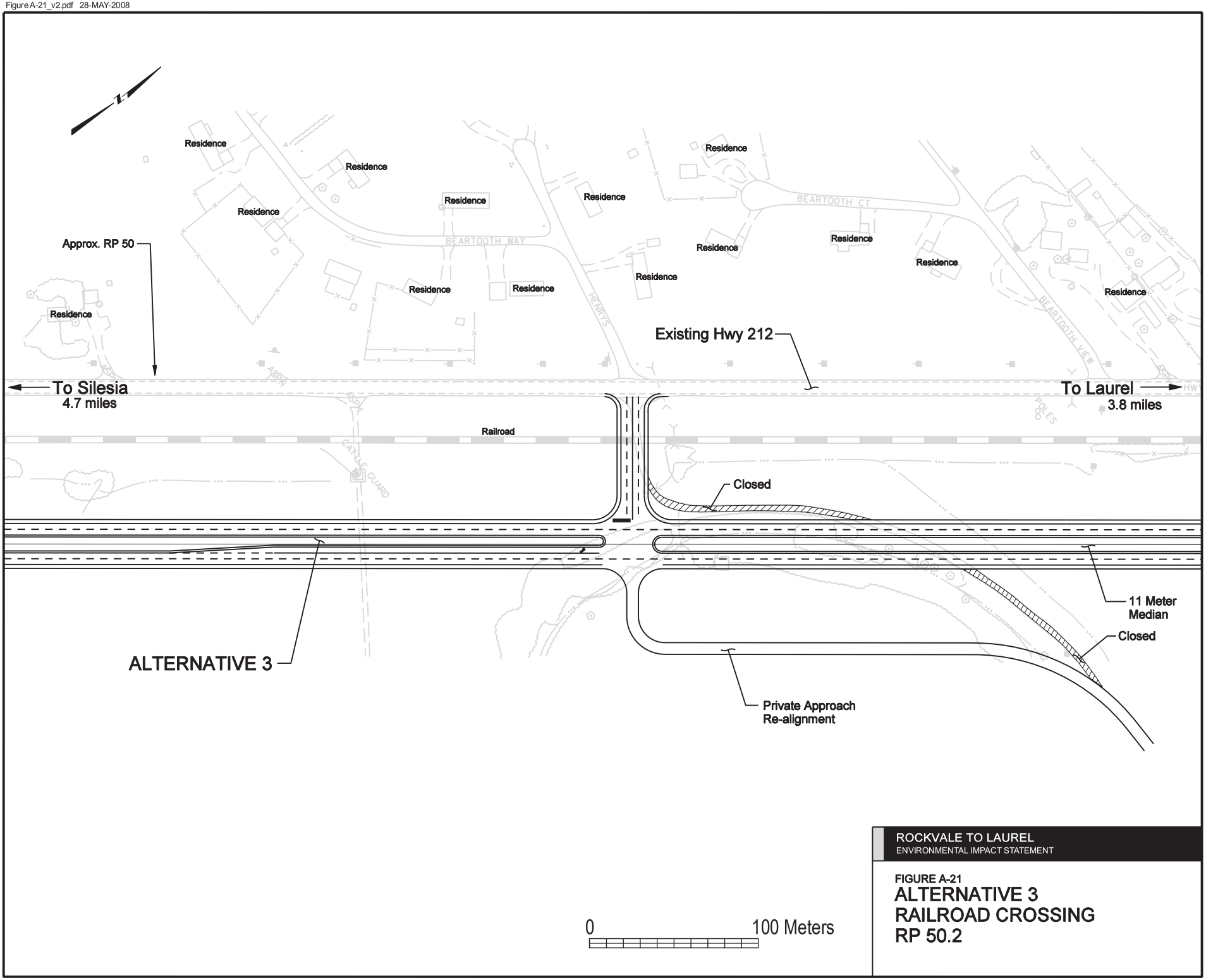
Figure A-20_v2.pdf 28-MAY-2008



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-20
ALTERNATIVE 3
RAILROAD CROSSING
RP 48.9

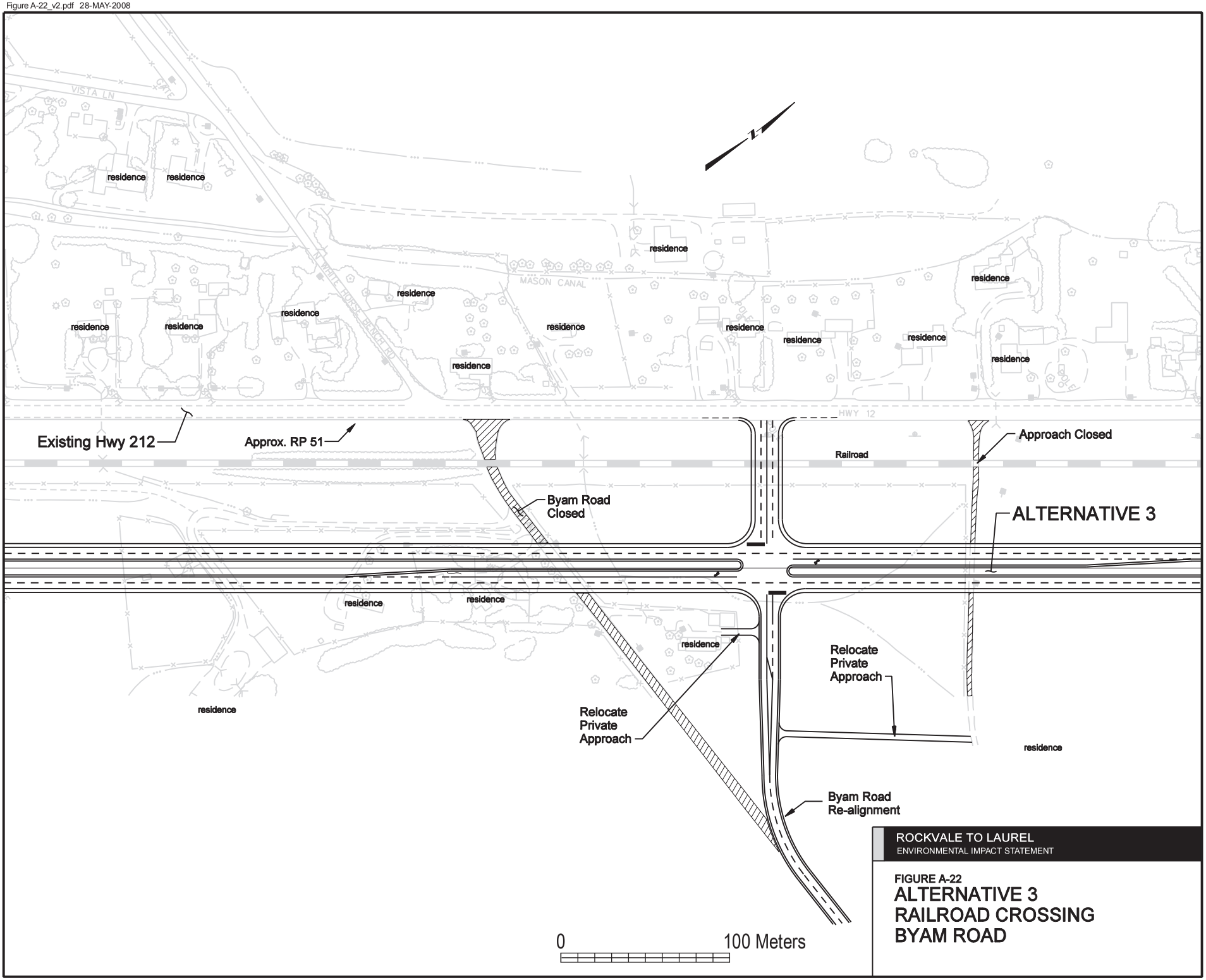
Figure A-21_v2.pdf 28-MAY-2008



ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE A-21
ALTERNATIVE 3
RAILROAD CROSSING
RP 50.2

Figure A-22_v2.pdf 28-MAY-2008


VISTA LN
residence
residence
MASON CANAL
WHITE HORSE BENCH RD
residence
residence
residence

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Appendix B: Species Information

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
MONTANA FIELD OFFICE
585 SHEPARD WAY
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

M.17 FHWA (Rockvale - Laurel)

September 11, 2007

Charles Blair
CH2M HILL
322 East Front Street, Suite 200
Boise, Idaho 83702-7359

Dear Mr. Blair:

This is in response to your letter dated July 17, 2007, regarding a proposal by the Montana Department of Transportation and the Federal Highway Administration to reconstruct U.S. Highway 212 between Rockvale and Laurel in Carbon and Yellowstone Counties in Montana. As your letter indicated, there have been delays associated with the draft environmental impact statement for this project, so you have requested an updated list of threatened, endangered, proposed and candidate species that may occur in the vicinity of this proposed project. In response to earlier such requests, the U.S. Fish and Wildlife Service (Service) has previously provided lists for this project in letters to your firm dated April 11, 2001, December 7, 2001, and January 25, 2005. The most recent list included endangered black-footed ferrets (*Mustela nigripes*) and threatened bald eagles (*Haliaeetus leucocephalus*).

Within areas encompassing the proposed project there have been a few recent changes relative to the status and distribution of listed species. As you know, on July 9, 2007, the Final Rule removing bald eagles in the lower 48 states from the list of endangered and threatened wildlife was published in the Federal Register. This delisting took effect on August 8, 2007. Although no longer covered by the Endangered Species Act (ESA), bald eagles will continue to be protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. So, while consultation pursuant to section 7 of ESA will be no longer be necessary for bald eagles, it is recommended that coordination with the Service occur if it is determined that this project is likely to disturb bald eagles. In addition, endangered whooping cranes (*Grus americana*) have recently been sighted utilizing wetland habitats in nearby portions of Yellowstone County. Therefore, the federally-listed species that may occur in the vicinity of this proposed project that you should now consider in the biological assessment for this project are black-footed ferrets and whooping cranes.

Thank you for your continued coordination of the biological assessment for this project. If you have questions regarding this letter, please contact Scott Jackson, of my staff, at (406)449-5225, extension 201.

Sincerely,

R. Mark Wilson
Field Supervisor

Copy to: Lou Hanebury, FWS, Billings Suboffice

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
MONTANA FIELD OFFICE
100 N. PARK, SUITE 320
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

M.17 FHWA (Rockvale - Laurel) January 25, 2005

Denny Mengel
CH2M HILL
700 Clearwater Lane
Boise, Idaho 83712-7708

Dear Dr. Mengel:

This is in response to your letter dated December 13, 2004, regarding a proposal by the Montana Department of Transportation and the Federal Highway Administration to reconstruct U.S. Highway 212 between Rockvale and Laurel in Carbon and Yellowstone Counties in Montana. As your letter indicated, there have been delays associated with this project, but you are now preparing the draft environmental impact statement for release this year. In response to an earlier request, the U.S. Fish and Wildlife Service (Service) provided you with a list of federally-listed species that may be present in the vicinity of this project in a letter dated April 11, 2001. A validation of that list was sent in a letter dated December 7, 2001. Because much time has elapsed since the last list was approved, your most recent letter requests an updated list of threatened, endangered, proposed and candidate species that may occur in the vicinity of this proposed project. The Service's Montana Field Office received your request on December 16, 2004.

Within areas encompassing the proposed project, there have been a few recent changes to species proposed for listing and species that are candidates for listing. The proposal to list mountain plovers (*Charadrius montanus*) as threatened was withdrawn by the Service on September 9, 2003. Black-tailed prairie dogs (*Cynomys ludovicianus*) were removed from the list of candidate species on August 12, 2004. Therefore, the species that may occur in the vicinity of this proposed project that you should consider in the biological assessment are the threatened bald eagle (*Haliaeetus leucocephalus*) and the endangered black-footed ferret (*Mustela nigripes*).

Thank you for your continued coordination of the biological assessment for this project. If you have questions regarding this letter, please contact Scott Jackson, of my staff, at (406)449-5225, extension 201.

Sincerely,

R. Mark Wilson
Field Supervisor

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York, Jenni/BOI

From: Mengel, Denny/BOI
Sent: February 16, 2003 11:51 AM
To: Alters, Steve/HMT; Bruce Barrett (Bruce Barrett); Studt, Mark
Cc: York, Jenni/BOI
Subject: FW: Hwy. 212; Rockvale - Laurel; EIS

Updated T&E species list.

Denny Mengel, Ph.D., CPSS
Senior Ecologist
CH2M HILL
Boise, Idaho
208/345-5310
208/841-0733 (Cell)

-----Original Message-----
From: Scott_Jackson@fws.gov [mailto:Scott_Jackson@fws.gov]
Sent: February 15, 2003 2:42 PM
To: Mengel, Denny/BOI
Cc: Mark_Wilson@fws.gov; lou_hanebury@fws.gov; npettit@state.mt.us
Subject: Hwy. 212; Rockvale - Laurel; EIS

Hello Denny,

In response to your phone request this week regarding an updated species list relative to the subject highway reconstruction project, I offer the following. The Service issued a list of threatened, endangered, proposed, and candidate species that may occur in the vicinity of U.S. Highway 212 between Rockvale and Laurel in Carbon and Yellowstone counties, Montana in a letter to you dated April 11, 2001. That list included threatened bald eagles, endangered black-footed ferrets, proposed as threatened mountain plovers, and candidate black-tailed prairie dogs. In a subsequent letter to you dated December 7, 2001, the Service responded to your request for an updated species list, indicating that no changes had occurred in the project corridor with respect to listed species or their known distribution, so the list provided on April 11, 2001 remained valid. More time has now passed without the biological assessment for this project being completed, so you now have appropriately requested notification of any recent changes to this species list. No changes in listed species occurrence or status have recently occurred within this project corridor. Therefore, the list of species provided to you in our letter dated April 11, 2001, and reaffirmed on December 7, 2001, remains current and up to date.

Thank you for your inquiry. It was nice to visit with you again the other day. I hope this project is progressing and that all is going well for you.

Scott Jackson, Wildlife Biologist
U.S. Fish and Wildlife Service
100 North Park Avenue, Suite 320
Helena, Montana 59601
(406)449-5225, ext. 201
scott_jackson@fws.gov

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
MONTANA FIELD OFFICE
100 N. PARK, SUITE 320
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

RECEIVED
APR 16 2001
CH2M HILL
BOISE

M.17 FHWA (Rockvale - Laurel)

April 11, 2001

Denny Mengel
CH2M HILL
700 Clearwater Lane
Boise, Idaho 83712-7708

Dear Dr. Mengel:

This is in response to your March 16 letter regarding a proposal by the Montana Department of Transportation and the Federal Highway Administration to reconstruct US Highway 212 between Rockvale and Laurel in Carbon and Yellowstone counties in Montana. Your letter requested information the US Fish and Wildlife Service (Service) may have pertaining to threatened and endangered (T/E) species that may occur in the vicinity of the proposed project. The Service received your letter on March 22. These comments have been prepared under the authority of, and in accordance with, the provisions of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et.seq.) and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.).

In accordance with section 7(c) of the Act, the Service has determined that the following threatened, endangered, proposed and candidate species may be present in the project area:

Listed Species	Expected Occurrence
bald eagle (*Haliaeetus leucocephalus*); threatened	spring or fall migrant; winter resident; nesting
black-footed ferret (*Mustela nigripes*); endangered	potential occurrence associated with prairie dog complexes
Proposed Species	**Expected Occurrence**
mountain plover (*Charadrius montanus*); proposed as threatened	potential occurrence in shortgrass prairie habitat
Candidate Species	**Expected Occurrence**
black-tailed prairie dog (*Cynomys ludovicianus*)	potential occurrence in shortgrass prairie habitat

Section 7(c) of the Act requires that Federal agencies proposing major construction activities complete a biological assessment to determine the effects of the proposed actions on listed and proposed species and use the biological assessment to determine whether formal consultation is required. A major construction activity is defined as "a construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act (NEPA)" (50 CFR Part 402). If a biological assessment is not required (i.e. all other actions), the Federal agency is still required to review their proposed activities to determine whether listed species may be affected. If such a determination is made, formal consultation with the Service is required.

For those actions wherein a biological assessment is required, the assessment should be completed within 180 days of initiation. This time frame can be extended by mutual agreement between the Federal agency or its designated non-Federal representative and the Service. If an assessment is not initiated within 90 days, this list of threatened and endangered species should be verified with the Service prior to initiation of the assessment. The biological assessment may be undertaken as part of the Federal agency's compliance of section 102 of NEPA and incorporated into the NEPA documents. We recommend that biological assessments include the following:

1. A description of the project.
2. A description of the specific area that may be affected by the action.
3. The current status, habitat use, and behavior of T/E species in the project area.
4. Discussion of the methods used to determine the information in Item 3.
5. An analysis of the affects of the action on listed species and proposed species and their habitats, including an analysis of any cumulative effects.
6. Coordination/mitigation measures that will reduce/eliminate adverse impacts to T/E species.
7. The expected status of T/E species in the future (short and long term) during and after project completion.
8. A determination of "is likely to adversely affect" or "is not likely to adversely affect" for listed species.
9. A determination of "is likely to jeopardize" or "is not likely to jeopardize" for proposed species.
10. Citation of literature and personal contacts used in developing the assessment.

If it is determined that a proposed program or project "is likely to adversely affect" any listed species, formal consultation should be initiated with this office. If it is concluded that the project "is not likely to adversely affect" listed species, the Service should be asked to review the assessment and concur with the determination of no adverse effect.

Pursuant to section 7(a) (4) of the Act, if it is determined that any proposed species may be jeopardized, the Federal agency should initiate a conference with the Service to discuss

conservation measures for those species. For more information regarding species of concern occurring in the project area, including proposed and candidate species, please contact the Montana Natural Heritage Program, 1515 East 6th Ave., Helena, 59601, (406) 444-3009.

A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare biological assessments. However, the ultimate responsibility for Section 7 compliance remains with the Federal agency and written notice should be provided to the Service upon such a designation. We recommend that Federal agencies provide their non-Federal representatives with proper guidance and oversight during preparation of biological assessments and evaluation of potential impacts to listed species.

Section 7(d) of the Act requires that the Federal agency and permit/applicant shall not make any irreversible or irretrievable commitment of resources which would preclude the formulation of reasonable and prudent alternatives until consultation on listed species is completed.

Any power lines in the vicinity, if not properly constructed, could pose electrocution hazards for bald eagles. To conserve this species, and other large raptors protected by Federal law, we urge that any power lines that need to be modified or reconstructed as a result of this project be raptor-proofed following the criteria and techniques outlined in the publication, "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996." A copy may be obtained from: Jim Fitzpatrick, Treasurer, Carpenter Nature Center, 12805 St. Croix Trail South, Hastings, MN 55033. The use of such techniques would likely be most beneficial adjacent to expected raptor foraging areas (i.e. stream crossings or wetlands that support populations of waterfowl).

Your letter does not mention whether wetlands might be impacted by the proposed construction project. If so, Corps of Engineers (Corps) Section 404 permits may eventually be required. In that event, depending on permit type and other factors, the Service may be required to review permit applications and will recommend any protection or mitigation measures to the Corps as may appear reasonable and prudent based on the information available at that time.

If you have questions regarding this letter, please contact Mr. Scott Jackson, of my staff, at the address above or by phone at (406) 449-5225, ext. 201.

Sincerely,

R. Mark Wilson

R. Mark Wilson
Field Supervisor

Copies to: - Dave Hill, Environmental Services, MT Dept. of Transportation, Helena
- FWS-ES; Billings Suboffice

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MONTANA
Natural Heritage
Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0581 • tel 406.444.5354 • http://mtnhp.org

July 19, 2007

Chuck Blair
Senior Wildlife Ecologist
CH2M HILL
322 East Front Street, Suite 200
Boise, ID 83702

Dear Chuck,

I am writing in response to your recent request regarding species of concern in the vicinity of U.S. Highway 212 from Rockvale to Laurel, including T02S, R23E, Section 36; T02S, R24E, Sections 15, 16, 21, 22, 27, 28, 29, 31, 32 and 33; T03S, R23E, Sections 1, 2, 11, 12, 13, 14, 22, 23, 24, 25, 26, 27, 34 and 35; T03S, R24E, Sections 5, 6 and 7;and, T04S, R23E, Sections 2 and 3. We checked our databases for information in this general area and have enclosed 9 species of concern reports, 4 animal inferred extent reports, 2 ecological site reports, one map and explanatory material.

Please keep in mind the following when using and interpreting the enclosed information and maps:

(1) These materials are the result of a search of our database for species of concern that occur in an area defined by requested township, range and sections with an additional one-mile buffer surrounding the requested area. This is done to provide a more inclusive set of records and to capture records that may be immediately adjacent to the requested area. Reports are provided for the species of concern that are located in your requested area with a one-mile buffer. Species of concern outside of this area may be depicted on the map but are not reported.

(2) On the map, polygons represent one or more source features as well as the locational uncertainty associated with the source features. A source feature is a point, line, or polygon that is the basic mapping unit of an EO Representation. The recorded location of the occurrence may vary from its true location due to many factors, including the level of expertise of the data collector, differences in survey techniques and equipment used, and the amount and type of information obtained. Therefore, this inaccuracy is characterized as locational uncertainty, and is now incorporated in the representation of an EO. If you have a question concerning a specific EO, please do not hesitate to contact us.

(3) This report may include sensitive data, and is not intended for general distribution, publication or for use outside of your agency. In particular, public release of specific location information may jeopardize the welfare of threatened, endangered, or sensitive species or communities.

(4) The accompanying map(s) display management status, which may differ from ownership. Also, this report may include data from privately owned lands, and approval by the landowner is advisable if specific location information is considered for distribution. Features shown on this map do not imply public access to any lands.

(5) Additional biological data for the search area(s) may be available from other sources. We suggest you contact the U.S. Fish and Wildlife Service for any additional information on threatened and endangered species (406-449-5225). Also, significant gaps exist in the Heritage Program's fisheries data, and we suggest you contact the Montana Rivers Information System for information related to your area of interest (406-444-3345).

(6) Additional information on species habitat, ecology and management is available on our web site in the Plant and Animal Field Guides, which we encourage you to consult for valuable information. You can access these guides at http://mtnhp.org. General information on any species can be found by accessing the link to NatureServe Explorer.

The results of a data search by the Montana Natural Heritage Program reflect the current status of our data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys, which may be required for environmental assessments. The information is intended for project screening only with respect to species of concern, and not as a determination of environmental impacts, which should be gained in consultation with appropriate agencies and authorities.

I hope the enclosed information is helpful to you. Please feel free to contact me at (406) 444-3290 or via my e-mail address, below, should you have any questions or require additional information.

Sincerely,

Martin P. Miller
Montana Natural Heritage Program
martinm@mt.gov

Montana Species of Concern
US HWY 212
Rockvale to Laurel

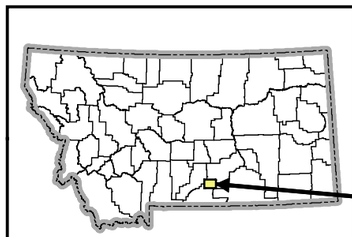
Species of Concern

- Vascular Plant
- Nonvascular Plant
- Other Botanical
- Vertebrate Animal
- Invertebrate Animal
- Other Zoological
- Animal Inferred Extent
- Ecological Sites

SPECIES OF CONCERN: A polygon feature representing only what is known from direct observation with a defined level of certainty regarding the spatial location of the feature.

INFERRED EXTENT: Areas that can be inferred to be probable occupied habitat based on the spatial location of the direct observation of a species and general information available for the foraging area and home range size of the species.

SITES: Ecological information that may be useful in assessing biological values and interpreting Species of Concern data.



- Special Designations
- Conservation Easements

Public Lands

- BLM
- Bureau of Reclamation
- US Fish and Wildlife Service
- National Park Service
- US Forest Service
- Other USDA (ag research stations)
- Army Corps of Engineers
- Other Department of Defense
- Undifferentiated state
- DNRC (state trust lands)
- Montana Fish, Wildlife & Parks
- University, Institutions, MDT
- DNRC (water project lands)
- Local Government
- Bureau of Indian Affairs Trust
- Tribal Lands
- Plum Creek
- Private Land Trusts

Not all legend items may occur on the map.

Features shown on this map do not imply public access to any lands.

This map displays management status, which may vary from ownership.

MONTANA Natural Heritage Program

Natural Resource Information System, Montana State Library
1515 East Sixth Ave., Helena, MT 59620-1800

406 444-5354 http://mtnhp.org mtnhp@mt.gov

0 0.5 1 2 3 4 5 Miles

Map Document: (K:\Requests\08\PRVT\08prvt0021\08prvt0021.mxd) 7/19/2007

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MONTANA Natural Heritage Program

Montana Natural Heritage Program

1515 East Sixth Ave., Helena, Montana 59620-1800
(406) 444-5354 http://mtnhp.org

Explanation of Species of Concern Reports

Since 1985, the Montana Natural Heritage Program (MTNHP) has been compiling and maintaining an inventory of elements of biological diversity in Montana. This inventory includes plant species, animal species, plant communities, and other biological features that are rare, endemic, disjunct, threatened, or endangered throughout their range in Montana, vulnerable to extirpation from Montana, or in need of further research.

Element Occurrences: Individual species, communities, or biological features are referred to as "elements." An "**Element Occurrence**" (**EO**) is an area depicting only what is known from direct observation with a defined level of certainty regarding the spatial location of the feature. If an observation can be associated with a map feature that can be tracked (e.g., a wetland) then this polygon feature is used to represent the EO. No inferences beyond the direct observation, and associated uncertainty, can be made and still called an Element Occurrence. An "Element Occurrence" generally falls into one of the following three categories:

Plants: A documented location of a specimen collection or observed plant population. In some instances, adjacent, spatially separated clusters are considered subpopulations and are grouped as one occurrence (e.g., the subpopulations occur in ecologically similar habitats, and are within approximately one air mile of one another).

Animals: The location of a specimen collection or of a verified sighting; assumed to represent a breeding population. Additional collections or sightings are often appended to the original record.

Other: Significant biological features not included in the above categories, such as bird rookeries, peatlands, or state champion trees.

Inferred Extents: Areas that can be inferred as probable occupied habitat based on direct observation of a species location and what is known about the foraging area or home range size of the species.

Ecological Information: Areas for which we have ecological information are represented on the map as either shaded polygons (where small and/or well defined) or simply as map labels (where they are large generally-defined landscapes). Descriptive information about these areas is contained in the associated report. Such information can be useful in assessing biological values and interpreting Species of Concern data.

The quantity and quality of data contained in MTNHP reports is dependent on the research and observations of the many individuals and organizations that contribute information to the program. Please keep in mind that the absence of information for an area does not mean the absence of significant biological features, since no surveys may have been conducted there. Reports produced by the Montana Natural Heritage Program summarize information documented in our databases at the time of a request. These reports are not intended as a final statement on the elements or areas being considered, nor are they a substitute for on-site surveys, which may be required for environmental assessments.

As a user of MTNHP, your contributions of data are essential to maintaining the accuracy of our databases. New or updated location information for all species of concern is always welcome.

We encourage you to visit our website at http://**mtnhp.org.** On-line tools include species lists, an electronic version of *Montana Bird Distribution*, and *Montana Rare Plant* and *Animal Field Guides*, which contain photos, illustrations, and supporting information on Montana's species of concern. Additional data are available on most species and ecological areas identified in our reports.

If you have questions or need further assistance, please contact us either by phone at (406/444-5354), e-mail (mtnhp@mt.gov) or at the mailing address above.

Revision Date: 7/7/2006

Data Descriptions

The section below lists the names and definitions for descriptions of the data fields used in the reports. Certain codes and abbreviations are used in Element Occurrence reports. Although many of these are very straightforward, the following explanations should answer most questions.

Map Label: The label for the element occurrence as it appears on the map.

Inferred Extent Map Label: The label for the inferred extent that is related to the element occurrence. An Inferred Extent is an area that can be inferred to be probable occupied habitat based on the observed location of a species and what is known about the foraging area and home range size of the species.

Element Subnational ID: The unique code used by the state or province to identify a specific element.

EO Number: Number that identifies the particular occurrence of the element.

Scientific Name: Latin (scientific) name.

Common Name: Commonly recognized name.

Species of Concern/Potential Concern: This value indicates whether the species is a "Species of Concern" (Y) or of "Potential Concern" (W).

Last Observation Date: The date the Element Occurrence was last observed extant at the site (not necessarily the date the site was last visited).

First Observation Date: The date the Element Occurrence was first reported at the site.

EO Rank: indicates the relative value of the Element Occurrence (EO) with respect to other occurrences of the Element, based on an assessment of estimated viability (species).

Values:

A - Excellent estimated viability/ecological integrity
A? - Possibly excellent estimated viability/ecological integrity
AB - Excellent or good estimated viability/ecological integrity
AC - Excellent, good, or fair estimated viability/ecological integrity
B - Good estimated viability/ecological integrity
B? - Possibly good estimated viability/ecological integrity
BC - Good or fair estimated viability/ecological integrity
BD - Good, fair, or poor estimated viability/ecological integrity
C - Fair estimated viability/ecological integrity
C? - Possibly fair estimated viability/ecological integrity
CD - Fair or poor estimated viability/ecological integrity
D - Poor estimated viability/ecological integrity
D? - Possibly poor estimated viability/ecological integrity
E - Verified extant (viability/ecological integrity not assessed)
F - Failed to find
F? - Possibly failed to find
H - Historical
H? - Possibly historical
X - Extirpated
X? - Possibly extirpated
U - Unrankable
NR - Not ranked

EO Data: Data collected on the biology of this Element Occurrence. Specific information may include number of individuals, vigor, habitat, soils, associated species, and other characteristics.

Natural Heritage Rank Definitions

G1/S1 At high risk because of extremely limited and/or rapidly declining numbers, range, and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
G2/S2 At risk because of very limited and/or declining numbers, range, and/or habitat, making it vulnerable to global extinction or extirpation in the state.
G3/S3 Potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas.
G4/S4 Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.
G5/S5 Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.
GU/SU Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GH/SH **H**istorically occurred; may be rediscovered.
GX / SX Believed to be extinct; historical records only.
Other codes and rank modifiers:

B/N State rank modifiers indicating the breeding status for a migratory species; B = Breeding, N = Non-breeding.
HYB A global rank denoting a hybrid.
M A state rank modifier indicating migratory stopover status for a species.
Q A global rank modifier indicating that there are taxonomic questions or problems.
T Denotes the rank for a subspecific taxon (subspecies or population); appended to the global rank for the full species. The S Rank following applies to the subspecific taxon.
S Denotes inexactness or uncertainty.

Federal Status Designations

Current federal agency status designations are also provided, including legal status under the U.S. Endangered Species Act, and administrative designations of the U.S. Forest Service and Bureau of Land Management. Where the ESA listing status has changed since 2003, the new status is bolded and underlined.

U.S. Fish and Wildlife Service

This value indicates status under the federal Endangered Species Act of 1973 based on categories defined by the U.S. Fish and Wildlife Service (16 U.S.C.A. §1531-1543 (Supp. 1996)).

E Listed Endangered
T Listed Threatened
PE Proposed Endangered
PT Proposed Threatened
XN Experimental Nonessential
C Candidate (species for which the U.S. Fish and Wildlife Service has sufficient information on biological status and threats to propose listing as threatened or endangered)
PDL Proposed for delisting - Any species for which a final rule has been published in the Federal Register to delist the species.

U.S. Forest Service

The U.S. Forest Service Manual (2670.22) defines the status of Sensitive species on Forest Service lands. The Regional Forester (Northern Region) designates Sensitive species on National Forests in Montana. This designation applies only on USFS-administered lands.

S Sensitive; animal and plant species identified by the Regional Forester for which population viability is a concern as evidenced by significant downward trend in population or a significant downward trend in habitat capacity.

U.S. Bureau of Land Management

The BLM 6840 Manual defines the status of species on Bureau of Land Management lands. They apply only on BLM-administered lands.

S Sensitive; species that are proven imperiled in at least part of their ranges and are documented to occur on BLM lands.

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Species of Concern Data Report

Thursday, July 19, 2007

Visit http://mtnhp.org for additional information.

Inferred Extent Report

Inferred Extents are areas that can be inferred to be probable occupied habitat based on the spatial location of the direct observation of a species and general information available for the foraging area or home range size of the species.

EO_ID

Inferred Extent For: Centrocercus urophasianus

Common Name: Greater Sage-grouse

Inferred Extent Map Label: IE- 39,051

Inferred Extent For: Centrocercus urophasianus

Common Name: Greater Sage-grouse

Inferred Extent Map Label: IE- 39,052

Inferred Extent For: Haliaeetus leucocephalus

Common Name: Bald Eagle

Inferred Extent Map Label: IE- 35,192

Inferred Extent For: Haliaeetus leucocephalus

Common Name: Bald Eagle

Inferred Extent Map Label: IE- 35,195

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Species of Concern Data Report

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Centrocercus urophasianus

Element Occurence Map Label: 39051 **Element Subnational ID:** 10626 **EO Number:** 720779

Common Name: Greater Sage-grouse
Species of Concern (Y) / Potential Concern (W): Y **First Observation Date:**
Description: Vertebrate Animal **Last Observation Date:**

Natural Heritage Ranks:

State: S3
Global: G4

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

EO Rank:
EO Data

Bird Rookery

Element Occurence Map Label: 691 **Element Subnational ID:** 14825 **EO Number:** 9

Common Name: Bird Rookery
Species of Concern (Y) / Potential Concern (W): W **First Observation Date:** 1988
Description: Animal Assemblage **Last Observation Date:** 1988-06-15

Natural Heritage Ranks:

State: SNR
Global: GNR

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

EO Rank:
EO Data
Great blue heron: Largest in state - approximately 200 nests. Double-crested cormorant: Approximately 40 nests in the southwest corner of the rookery.

Centrocercus urophasianus

Element Occurence Map Label: 39052 **Element Subnational ID:** 10626 **EO Number:** 720780

Common Name: Greater Sage-grouse
Species of Concern (Y) / Potential Concern (W): Y **First Observation Date:**
Description: Vertebrate Animal **Last Observation Date:**

Natural Heritage Ranks:

State: S3
Global: G4

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

EO Rank:
EO Data

Hemicarpha drummondii

Element Occurence Map Label: 4171 **Element Subnational ID:** 13381 **EO Number:** 1

Common Name: Drummond's Hemicarpha
Species of Concern (Y) / Potential Concern (W): Y **First Observation Date:** 1941-08-03
Description: Vascular Plant **Last Observation Date:** 1941-08-03

Natural Heritage Ranks:

State: SH
Global: G4G5

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

EO Rank: H
EO Data
NOT ABUNDANT; 3-6 INCHES TALL.

Lampropeltis triangulum

Element Occurence Map Label: 35043 **Element Subnational ID:** 14060 **EO Number:** 20871

Common Name: Milksnake
Species of Concern (Y) / Potential Concern (W): Y **First Observation Date:**
Description: Vertebrate Animal **Last Observation Date:**

Natural Heritage Ranks:

State: S2
Global: G5

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

EO Rank:
EO Data

Haliaeetus leucocephalus

Element Occurence Map Label: 35195 **Element Subnational ID:** 11331 **EO Number:** 417074

Common Name: Bald Eagle
Species of Concern (Y) / Potential Concern (W): Y **First Observation Date:**
Description: Vertebrate Animal **Last Observation Date:**

Natural Heritage Ranks:

State: S3
Global: G5

Federal Agency Status:

U.S. Fish & Wildlife Service: LT, PDL
U.S. Forest Service: THREATENED
U.S. Bureau of Land Management: SPECIAL STATUS

EO Rank:
EO Data

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Species of Concern Data Report

Thursday, July 19, 2007

Visit http://mtnhp.org for additional information.

Ammodramus bairdii

Element Occurence Map Label: 25763 **Element Subnational ID:** 13524 **EO Number:** 279542

Common Name: Baird's Sparrow
Species of Concern (Y) / Potential Concern (W): Y
Description: Vertebrate Animal
First Observation Date:
Last Observation Date:

Natural Heritage Ranks:

State: S2B
Global: G4

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management: SENSITIVE

EO Rank:
EO Data

Tyto alba

Element Occurence Map Label: 30763 **Element Subnational ID:** 11560 **EO Number:** 18189

Common Name: Barn Owl
Species of Concern (Y) / Potential Concern (W): Y
Description: Vertebrate Animal
First Observation Date:
Last Observation Date:

Natural Heritage Ranks:

State: S1
Global: G5

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

EO Rank:
EO Data

Apalone spinifera

Element Occurence Map Label: 40506 **Element Subnational ID:** 11382 **EO Number:** 8

Common Name: Spiny Softshell
Species of Concern (Y) / Potential Concern (W): Y
Description: Vertebrate Animal
First Observation Date:
Last Observation Date:

Natural Heritage Ranks:

State: S3
Global: G5

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management: SENSITIVE

EO Rank:
EO Data

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Natural Heritage Data Report

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Ecological Information

BUFFALO MIRAGE

The geographic scope of your data search intersected an area for which the Natural Heritage Program databases have ecological information. Such information can be useful in assessing biological values and interpreting Species of Concern data. A summary is provided below of conditions at the time of site record creation.

BUFFALO MIRAGE

General Description

Buffalo Mirage is located in the bottomland of the Yellowstone River near its confluence with the Clark's Fork Yellowstone River in south central Montana. It occupies both high terraces and the river's active floodplain, including recent depositional bars. Except for high terraces, this area appears to have been inundated by the 100-year floods of 1996 and 1997. High terraces are a mix of cottonwood stands and areas converted to agricultural uses. The condition of the cottonwood communities varies, with stands on private land in the best condition. Terrace cottonwood communities on private land include narrowleaf cottonwood / skunkbush sumac (*Populus angustifolia / Rhus trilobata*) and narrowleaf cottonwood / western snowberry (*Populus angustifolia / Symphoricarpos occidentalis*). Both these communities have open canopies with well-developed shrub layers of skunkbush sumac and silver buffaloberry (*Shepherdia argentea*) or western snowberry. Kentucky bluegrass (*Poa pratensis*) dominates the herbaceous layer, although droughtier patches without woody cover retain low cover of western wheatgrass (*Pascopyrum smithii*). Both these communities have large, open, shrub-dominated patches.

Terraces on state land have patches of plains cottonwood (*Populus deltoides*) with well-developed skunkbush sumac and silver buffaloberry understories, but for the most part they are dominated by a plains cottonwood / mesic graminoids (*Populus deltoides* / mesic graminoids) grazing disclimax. Heavy grazing in this latter community has greatly reduced shrub diversity and cover and has facilitated the dominance of exotic pasture grasses. Russian olive (*Elaeagnus angustifolia*) forms a well developed mid-canopy through much of this community. More mesic areas in abandoned and overflow channels support communities of plains cottonwood / western snowberry (*Populus deltoides / Symphoricarpos occidentalis*), plains cottonwood / red-osier dogwood (*Populus deltoides / Cornus sericea*), and clustered field sedge (*Carex praegracilis*). The cottonwood communities support a diverse and well-developed shrub layer of western snowberry, skunkbush sumac, silver buffaloberry, golden currant (*Ribes aureum*), chokecherry (*Prunus virginiana*), yellow willow (*Salix lutea*), prickly rose (*Rosa acicularis*), western clematis (*Clematis ligusticifolia*), riverbank grape (*Vitis riparia*), and, in places, red-osier dogwood (*Cornus sericea*). As in the aforementioned terrace communities, exotics grasses, especially Kentucky bluegrass, dominate the herbaceous layer. There are limited patches of cottonwood regeneration (sapling-sized narrowleaf cottonwood) along an overflow channel.

Biological Significance

No state significant plants or animals were observed. Two uncommon plant communities, plains cottonwood / western snowberry (*Populus deltoides / Symphoricarpos occidentalis*) and plains cottonwood / red-osier dogwood (*Populus deltoides / Cornus sericea*), were documented in fair condition. Although these stands have high cover of exotic grasses, especially Kentucky bluegrass (*Poa pratensis*), the shrub layers are robust and diverse, making them high quality stands from a regional perspective.

Key Ecological Factors

Seasonal flooding and channel migration support these riparian communities and are necessary for their continued vigor and regeneration. The high flood events of 1996/1997 caused a realignment of the channel. Beaver (*Castor canadensis*) are causing localized but heavy cottonwood mortality in places. Grazing intensity is variable; however, past grazing may explain the absence of red-osier dogwood (*Cornus sericea*) from much of the area.

Exotic Species

Pasture grasses, especially Kentucky bluegrass (*Poa pratensis*), dominate the ground layer. Cheatgrass (*Bromus tectorum*) and meadow foxtail (*Alopecurus pratensis*) are locally abundant. Burdock species (*Arctium* sp.), Canada thistle (*Cirsium arvense*), hound's tongue (*Cynoglossum officinale*), common dandelion (*Taraxacum officinale*), and common tansy (*Tanacetum vulgare*) are present at low cover. Small populations of leafy spurge (*Euphorbia esula*) and tamarisk (*Tamarix chinensis*) are present in areas with fresh deposition from the 1996/1997 flood events. Russian olive (*Elaeagnus angustifolia*) is well established on the state land section, and saplings are encroaching on the private land portion of the area.

More detailed data on vegetation communities in this area may be available; if you are interested, contact Greg Kudray at (406) 444-0915 or gkudray@mt.gov

Ecological Information

BUFFALO MIRAGE

Other Values

Cottonwood stands have significant wildlife values. High quality stands with an intact native shrub understory are uncommon along the Yellowstone River in the study area, and those that remain have a high conservation value.

Management Information

Some of the most troublesome weeds, leafy spurge (*Euphorbia esula*), tamarisk (*Tamarix chinensis*), and Russian olive (Elaeagnus angustifolia) in places, are present at low cover and could be eradicated before they spread and become an intractable problem. The good grazing practices on the private land portion of the area should be encouraged to continue. The bottomlands along the Yellowstone River in this reach still retain patches (some large) of cottonwood stands. However, much of the high terrace has been converted to pasture and other agricultural uses. There is limited placement of revetment along portions of the channel. Except for this localized geomorphic modification, fluvial processes are intact.

Information Gaps

None were noted.

References

More detailed data on vegetation communities in this area may be available; if you are interested, contact Greg Kudray at (406) 444-0915 or gkudray@mt.gov

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Thursday, July 19, 2007

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Ecological Information

YELLOWSTONE RIVER CORRIDOR

The geographic scope of your data search intersected an area for which the Natural Heritage Program databases have ecological information. Such information can be useful in assessing biological values and interpreting Species of Concern data. A summary is provided below of conditions at the time of site record creation.

YELLOWSTONE RIVER CORRIDOR

General Description

This Yellowstone River Corridor is located along the Yellowstone River in south central Montana. This area has a rich diversity of aquatic, riverine, wetland and adjacent upland habitats along the main-stem of the Yellowstone River from the Wyoming border to the confluence with the Bighorn River. Unlike most major rivers in the west, the Yellowstone River is free from major impoundments that have dramatically altered the hydrologic regime. The Yellowstone is characterized as a relatively free-flowing river. The intact hydrology and river dynamics give rise to important cottonwood floodplain communities. The aquatic environments include both cold water and warm water species. Adjacent uplands (within the 1 kilometer buffer) include benches, slopes, cliffs, rock outcrops and historic river-bottom that support shrublands of sagebrush (all three subspecies of *Artemisia tridentata*), grasslands consisting of bluebunch wheatgrass, and woodlands of primarily ponderosa pine (*Pinus ponderosa*).

Biological Significance

The Yellowstone River Corridor contains a diverse environment. In the headwaters near the Wyoming border, the river corridor includes habitat for grizzly bear (*Ursus arctos horribilis*), Canada lynx (*Lynx canadensis*), and gray wolf (*Canis lupus*). Cold water aquatic environments support Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*). Downstream warm water aquatic species include pallid sturgeon (*Scaphirhynchus albus*), paddlefish (*Polyodon spathula*), blue sucker (*Cycleptus elongatus*), the sicklefin chub (*Hybopsis meeki*) and sturgeon chub (*Macrhybopsis gelida*).
River and floodplain habitats are very important ecologically; three species of cottonwoods, narrowleaf cottonwood (*Populus angustifolia*), black cottonwood (*Populus balsamifera spp. trichocarpa*) and plains cottonwood (*Populus deltoides*) occur in gallery forests and terraces and provide habitat for nesting, wintering and migrating bald eagle (*Haliaeetus leucocephalus*) and rookery sites for blue heron. Channel gravel and sandbars provide habitat for spiny softshell (*Trionyx spiniferus*) and persistent-sepal yellowcress (*Rorippa calcyina*), although this species has not been relocated in recent years. Riparian communities include the state significant plants beaked spikerush (*Eleocharis rostellata*) and Schweinitz's flatsedge (*Cyperus schweinitzii*). Notable shorebirds recorded from this stretch include the Interior Least Tern (*Sterna antillarum athalassos*). Two reptiles, the western hognose snake (*Heterodon nasicus*) and milk snake (*Lampropeltis triangulum*) have been reported from the river corridor.

Key Ecological Factors

Seasonal flooding is the principal process facilitating the establishment and regeneration of cottonwood forests and riparian communities. Consequently, the process of seasonal flooding has direct implications to the numerous plant and animal species occurring within the river corridor.

Exotic Species

There are infestations of numerous exotic plant species and populations of exotic fish species. Non-native salmonid species compete and / or hybridize with the Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*).

Other Values

The Yellowstone River is a relatively free flowing river, restricted only by the occasional riprap along the banks and numerous irrigation diversions and pumping stations. This area captures nesting and foraging habitats of a plethora of species associated with the river and its floodplain.

Management Information

Agriculture, rural and urban developments and subsequent bank stabilization activities take place along the corridor. Diversions and dams for irrigation canals exit along the main stem and tributaries of the upper Yellowstone River. Irrigation is the major water use. Both irrigation and municipal use of groundwater have increased since 1970, and over 7,000 new wells have been drilled within 5 miles of either side of the bank along the upper Yellowstone River in Montana (MT Bureau of Mines and Geology Wells database).

More detailed data on vegetation communities in this area may be available; if you are interested, contact Greg Kudray at (406) 444-0915 or gkudray@mt.gov

Ecological Information

YELLOWSTONE RIVER CORRIDOR

Information Gaps

An assessment of the health, population structure and age of cottonwoods along islands in the main channel would quantify the dynamics of cottonwood and channel bar establishment.

References

More detailed data on vegetation communities in this area may be available; if you are interested, contact Greg Kudray at (406) 444-0915 or gkudray@mt.gov

Appendix C: Farmland Conversion Impact Rating for Corridor Type Projects

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request **7/16/06**	4. Sheet 1 of **2**
1. Name of Project **Rockvale to Laurel**	5. Federal Agency Involved **FHWA**	
2. Type of Project **Highway Corridor**	6. County and State **Yellowstone and Carbon Counties**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS **7/15/06**	2. Person Completing Form **Tony Rolfes/Valerie Robertson**
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated **112000/45567** | Average Farm Size **1072/1226**
5. Major Crop(s) **hay, barley, wheat, beets, corn, alphalfa**	6. Farmable Land in Government Jurisdiction Acres: **1397361** % **25**	7. Amount of Farmland As Defined in FPPA Acres: **558569** % **25**
8. Name Of Land Evaluation System Used **LESA**	9. Name of Local Site Assessment System **NA**	10. Date Land Evaluation Returned by NRCS **8/24/06**

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor 1	Corridor 2	Corridor 3A	Corridor 3B
A. Total Acres To Be Converted Directly	344	338	315	310
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	344	338	315	310
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	126	111	93	117
B. Total Acres Statewide And Local Important Farmland	61	107	51	53
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0	0	0	0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	30	30	40	36
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	41	41	37	39
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	14	14	14	14
2. Perimeter in Nonurban Use — 10	9	9	9	9
3. Percent Of Corridor Being Farmed — 20	8	9	13	12
4. Protection Provided By State And Local Government — 20	8	8	8	8
5. Size of Present Farm Unit Compared To Average — 10	0	0	0	0
6. Creation Of Nonfarmable Farmland — 25	9	10	5	5
7. Availablility Of Farm Support Services — 5	5	5	5	5
8. On-Farm Investments — 20	8	10	5	5
9. Effects Of Conversion On Farm Support Services — 25	0	0	0	0
10. Compatibility With Existing Agricultural Use — 10	2	8	4	2
TOTAL CORRIDOR ASSESSMENT POINTS — 160	63	73	63	60
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	50	50	47	48
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	63	73	63	60
TOTAL POINTS *(Total of above 2 lines)* — 260	113	123	110	108

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
5B	**unknown**	2/14/03	YES ☐ NO ☑

5. Reason For Selection:

See letter dated 7/10/06

JOSEPH GUENTHER, AICP
ENVIRONMENTAL PLANNER
Signature of Person Completing this Part:

DATE 10/19/07

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 7/16/06	4. Sheet 2 of 2
1. Name of Project **Rockvale to Laurel**	5. Federal Agency Involved **FHWA**	
2. Type of Project **Highway Corridor**	6. County and State **Yellowstone and Carbon Counties**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS **7/15/06**	2. Person Completing Form **Tony Rolfes/Valerie Robertson**
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐	4. Acres Irrigated **112000/45567**	Average Farm Size **1072/1226**
5. Major Crop(s) **hay, barley, wheat, beets, corn, alphalfa**	6. Farmable Land in Government Jurisdiction Acres: **1397361** % **25**	7. Amount of Farmland As Defined in FPPA Acres: **558569** % **25**
8. Name Of Land Evaluation System Used **LESA**	9. Name of Local Site Assessment System **NA**	10. Date Land Evaluation Returned by NRCS **8/24/06**

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Corridor For Segment — Corridor 5A	Corridor 5B		
A. Total Acres To Be Converted Directly		343	334		
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor		343	334	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland		127	114		
B. Total Acres Statewide And Local Important Farmland		102	107		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0	0	0	0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		30	30		
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		43	44		
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*					
1. Area in Nonurban Use	15	14	14		
2. Perimeter in Nonurban Use	10	9	9		
3. Percent Of Corridor Being Farmed	20	8	7		
4. Protection Provided By State And Local Government	20	8	8		
5. Size of Present Farm Unit Compared To Average	10	0	0		
6. Creation Of Nonfarmable Farmland	25	8	8		
7. Availablility Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	8	8		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	3	3		
TOTAL CORRIDOR ASSESSMENT POINTS	160	63	62	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	51	51		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	63	62	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	114	113	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
5B	**unknown**	**2/14/03**	YES ☐ NO ☑

5. Reason For Selection:

See letter dated 7/10/06

Signature of Person Completing this Part: JOSEPH GUNTHER, AICP ENVIRONMENTAL PLANNER — DATE 10/19/07

NOTE: Complete a form for each segment with more than one Alternate Corridor

Appendix D: Noise Figures

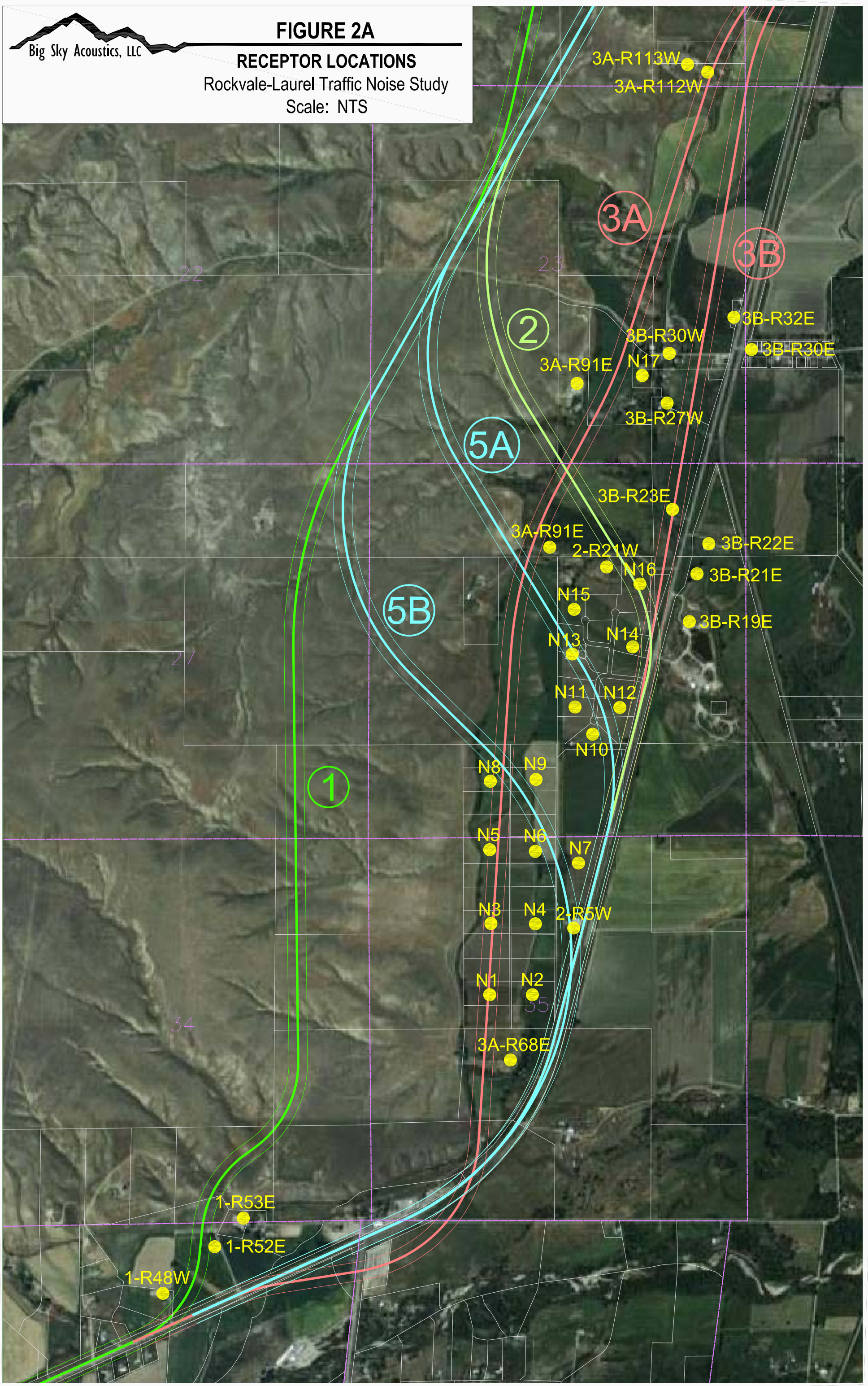
Big Sky Acoustics, LLC

FIGURE 2A

RECEPTOR LOCATIONS

Rockvale-Laurel Traffic Noise Study

Scale: NTS



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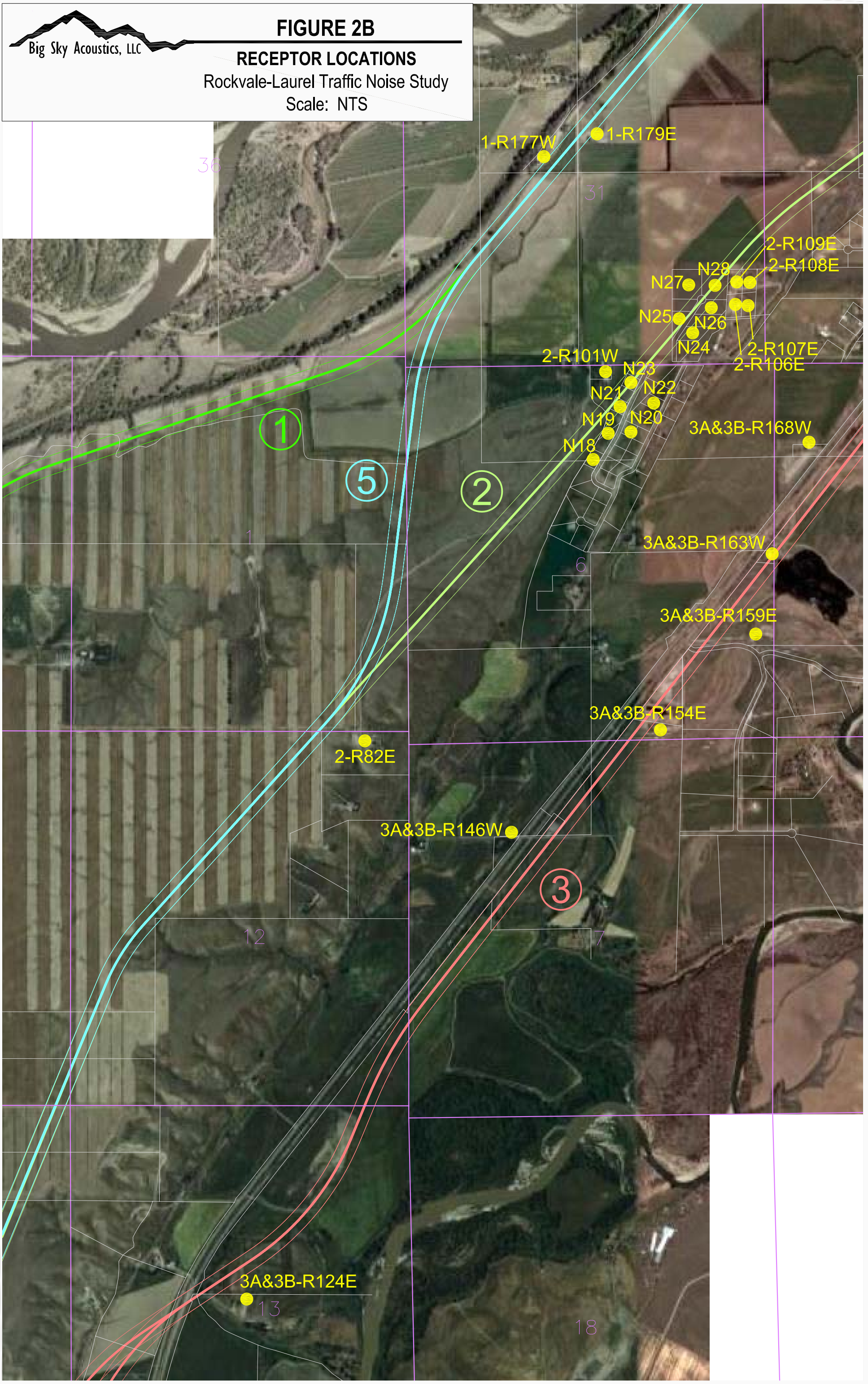
Big Sky Acoustics, LLC

FIGURE 2B

RECEPTOR LOCATIONS

Rockvale-Laurel Traffic Noise Study

Scale: NTS



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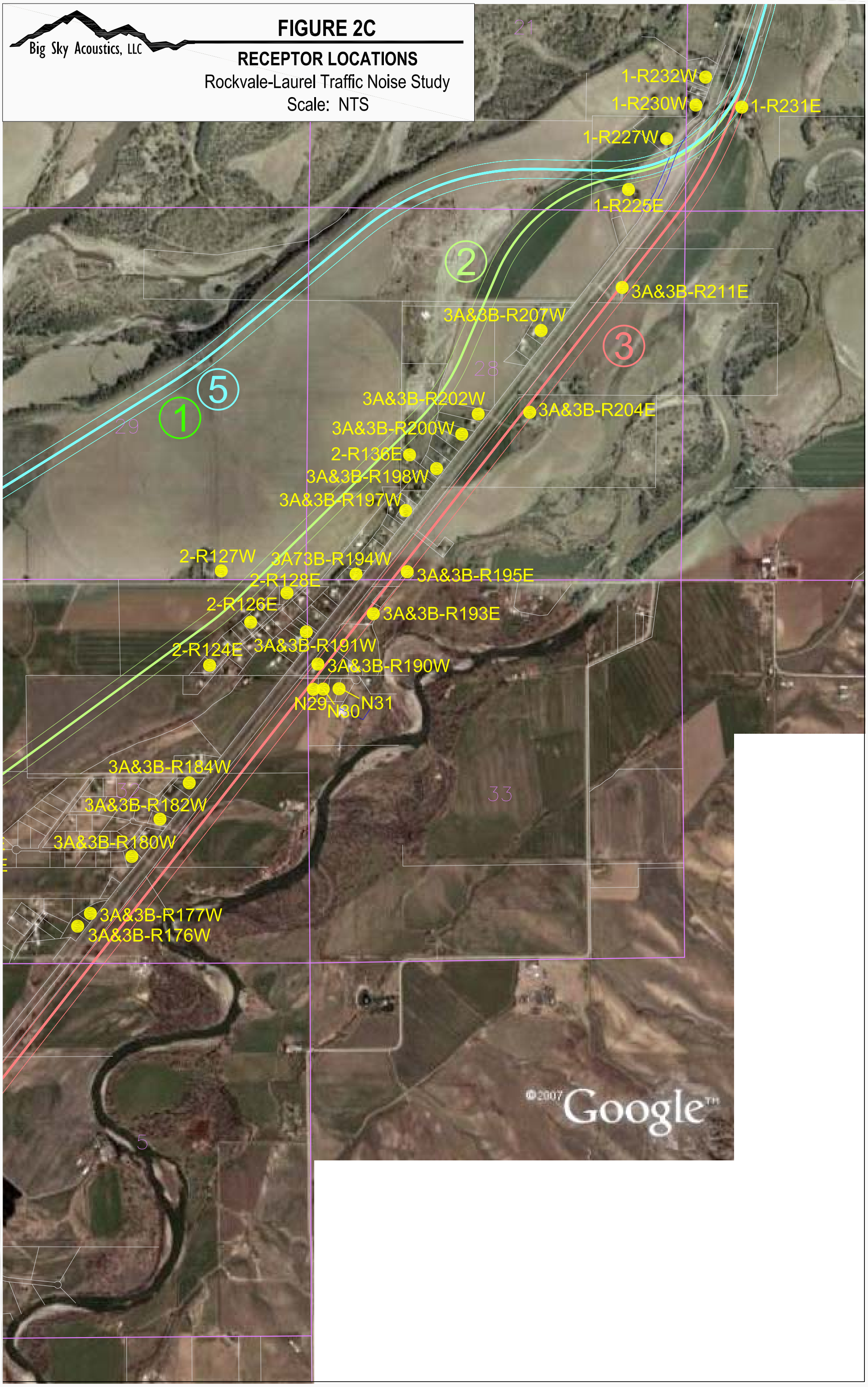
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FIGURE 2C

RECEPTOR LOCATIONS

Rockvale-Laurel Traffic Noise Study

Scale: NTS



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Appendix E: Section 404(b)(1) Evaluation

404(b)(1) Evaluation

US 212 Reconstruction Rockvale to Laurel

Montana Department of Transportation
Project Number NH-4-1(21)42
Control Number 4070

Prepared for

Montana Department of Transportation

March 2005
Revised February 2007

CH2MHILL

Introduction

The 404(b)(1) Guidelines are described in 40 CFR 230. They represent criteria to use when evaluating discharges of fill or dredge material into jurisdictional wetlands or waters of the U.S., under Section 404 of the Clean Water Act. As stated in Subpart A, "…dredged or fill material should not be discharged into the aquatic system, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern."

In order to comply with these guidelines, the following conditions must be met (Subpart B Section 230.10):

a) Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

b) No discharge of dredged or fill material shall be permitted if it violates State water quality standards, Section 307 of the Clean Water Act, the Endangered Species Act of 1973, or marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

c) Except as provided under Section 404(b)(2) no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the U.S.

d) Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Mitigation to compensate for unavoidable adverse impacts can be used to bring a project into compliance with these guidelines. Impacts must first be avoided to the extent practicable; then, remaining unavoidable adverse impacts must be mitigated by minimizing impacts to the extent practicable, and then by finally compensating for lost aquatic resource functions and values.

Factual determinations in eight categories must be made in writing in order to consider whether a discharge satisfies the above conditions (Subpart B, Section 230.11). The determinations are contained within this report.

Project Description

Location

US 212 is a principal arterial designated as Route N4 on the National Highway System in south-central Montana (Figure E-1). It serves as the local connection between the communities of Rockvale and Silesia and the City of Laurel. It is also the main northeasterly highway from the Red Lodge and Yellowstone National Park recreation areas. The 18-kilometer (11 miles) proposed project is located between reference (mile) posts 42.65 and 53.85 (Figure E-1). The existing highway runs in between the Yellowstone River and the Clarks Fork Yellowstone River in a valley surrounded by grassland-dominated rolling hills.

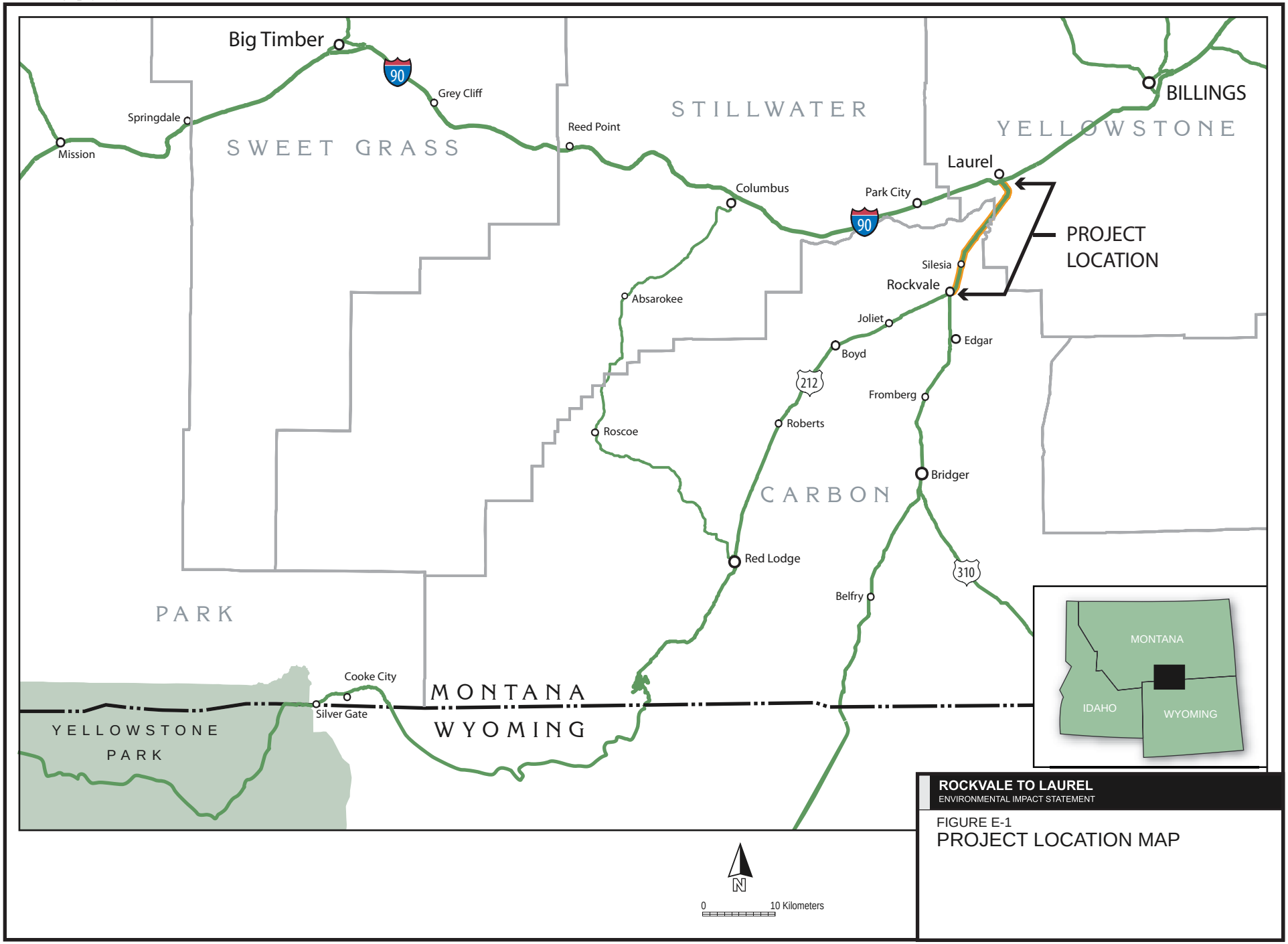
General Description

A Draft Environmental Impact Statement (DEIS) is being prepared for the project concurrent with this document. The DEIS examines a No-Build Alternative and six Build Alternative alignments for reconstructing the highway, and also identifies potential environmental effects (Figure E-2). The DEIS is in preliminary form and will be submitted to cooperating agencies for review and comment prior to submission for public review. The Preferred Alternative (Alternative 5B) has been identified and is the alternative evaluated in this 404(b)(1) analysis. The alternatives addressed in the DEIS include:

- No Build Alternative
- Alternative 1 – Far West Bench
- Alternative 2 – Near West Bench
- Alternative 3A – Near Existing Alignment
- Alternative 3B – Near Existing Alignment
- Alternative 5A – Combined West Bench
- Alternative 5B – Combined West Bench

Alternative 5B (Preferred Alternative) follows the existing alignment for approximately 1.6 kilometers (1 mile) and then turns northwesterly through irrigated farmland. The new alignment climbs onto the west bench and proceeds northeasterly until it rejoins the existing alignment near the northern end of the project limits. The new alignment proposes 2 travel lanes in either direction for a 4-lane facility. The proposed highway alignment was shifted in certain locations to avoid or minimize wetland impacts; alternative construction techniques, such as steeper slopes to minimize fill, were used in other locations to avoid or minimize wetland impacts. Table E-1 shows the proposed realignments or construction changes used to avoid or minimize wetland impacts.

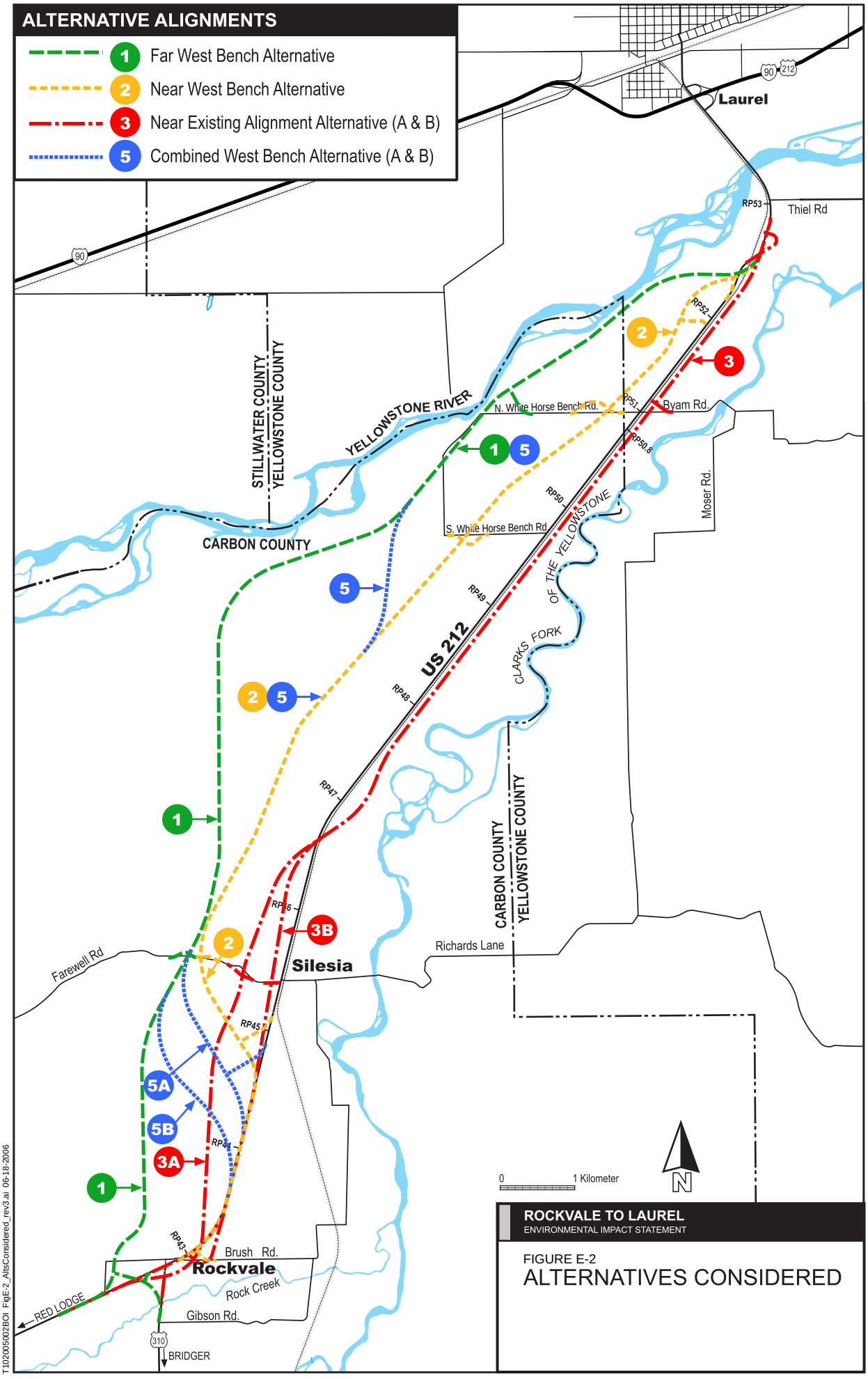
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ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE E-1
PROJECT LOCATION MAP

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ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Laurel
90
212
Thiel Rd
RP53
RP52
RP51
RP50.8
RP50
RP49
RP48
RP47
RP46
RP45
RP44
RP43
Byam Rd.
N. White Horse Bench Rd.
S. White Horse Bench Rd.
Moser Rd.
YELLOWSTONE RIVER
STILLWATER COUNTY
YELLOWSTONE COUNTY
CARBON COUNTY
OF THE YELLOWSTONE
CLARKS FORK
US 212
Farewell Rd
Silesia
Richards Lane
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
RED LODGE
310
BRIDGER
0
1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE E-2
ALTERNATIVES CONSIDERED
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To comply with Section 404(b)(1), all alignment alternatives for the proposed project were laid out on paper and then staked in the field. Preliminary wetland delineations and evaluations using the Montana Department of Transportation's (MDT's) Montana Wetland Assessment Method (MWAM) were then completed along all alignments. Those areas of alignments with wetland impacts were adjusted to avoid as many impacts as possible. Within Alternative 1, the relocation of US 310 was adjusted to minimize impacts to Wetland 5. Alternative 2 was adjusted to minimize impacts to Wetland 3. Alternative 3A was adjusted to minimize impacts to Wetland 17. Alignment adjustments were considered for Wetlands 18, 19, and 21, but abandoned because of the proximity of paralleling canals. Adjustments to combined Alternatives 3A and 3B were considered and rejected because the impacts were minor and not certain to occur for Wetlands 9, 11, and 12. Alternatives 5A and 5B were located after the initial wetland delineation. These alternatives were specifically located to avoid impacts to Wetlands 18 and 19. Alternative 5B was located to minimize impacts to Wetland 17. It was not possible to avoid impacts to Wetland 5 because it is located at the start of most of the alternatives at the location where the new alignment will be tied into the existing alignment, and where the roadbed will be widened at that point.

TABLE E-1
Aquatic Resource Avoidance/Minimization Realignments and Other Measures

Wetland	Problem Statement	Proposed Adjustment	Associated Waterbody	Approximate Wetland Impact Avoided
WL3	Desired to avoid wetland	Alternative 2 alignment was moved west and adjusted fill slopes to 3:1	Farewell Creek	0.2 ha
WL5	Needed to avoid the wetland when moving US 310	US 310 relocation was moved to miss the wetland	Smith Ditch	0.1 ha
WL17	Needed to avoid splitting wetland into 2 sections	Adjusted curve radius to put impacts on one side of wetland only	Free Silver Ditch	Not measurable
WL18	Needed to shift Alternative 5B south to transition off bench	Moved Alternative 5B to a location between WL18 and WL19	Free Silver Ditch	0.5 ha
WL19	Needed to shift Alternative 5B south to transition off bench	Moved Alternative 5B to a location between WL18 and WL19	Free Silver Ditch	0.6 ha
Clarks Fork Yellowstone River	Crossed the River in two locations	Dropped Alternative	Clarks Fork Yellowstone River	Not determined

Alternative 4 will cross the Clarks Fork Yellowstone River twice. The lack of public support and the potential for substantial environmental impacts resulted in removing this alternative from further consideration. Potentially substantial impacts on jurisdictional wetlands and waters of the U. S. were avoided when this alternative was dropped.

Authority and Purpose

MDT proposes the reconstruction of a 18-kilometer segment of US 212. Safety concerns and anticipated capacity needs compelled MDT to request funding from the Federal Highway Administration (FHWA) to evaluate the environmental effects of reconstructing this segment of US 212.

The following is a brief summary of the purpose and need for the proposed project:

- The **purpose** of the proposed project is to:

- Improve safety for all local and regional traffic needs;

- Accommodate long-term capacity needs for the local and regional travelers over the next 20 years and beyond using prudent planning principles;

- Improve the transportation system linkages by defining, preserving, and providing a corridor to accommodate the variety of transportation needs along US 212 including local circulation and access for residents with existing access needs; and

- Support mobility of goods and people connecting I-90 with rural communities of Silesia, Rockvale, Red Lodge, and Bridger, and Wyoming destinations.

The following critical **needs** for improving the US 212 transportation corridor between Laurel and Rockvale have been identified:

- There is conflict between local and regional traffic needs, such as slow versus faster travel desires; sight-seeing versus destination oriented driving; and frequent stops versus through connectivity with other portions of the National Highway System (NHS);

- Points of access, such as driveways and local roadways connecting to US 212, and stationary objects are the most frequent location of accidents;

- Accidents involving truck traffic are more than double the state average of similar roadways in Montana;

- The existing 2-lane US 212 is undersized to carry anticipated traffic volumes in the next 20 years and beyond;

- There is inadequate cueing distance between US 212 and railroad crossings; and

- Residential development and other physical features constrain the opportunity to widen the existing right-of-way within the project area.

General Description of the Dredged or Fill Material

General Characteristics of Material

Any fill placed into wetlands is likely to be some sort of AASHTO-approved fill material excavated from local sources. It would therefore be similar in chemical and physical characteristic to the soil directly below the highly organic wetland substrates. Borrow sites will be chosen to not contain toxic materials, high salinity levels, heavy metals, acid-generating substances, or any material potentially harmful to fish, wildlife, or other aquatic organisms. In general, fill materials would be expected to be earth and crushed or naturally occurring sand and gravel. However, steel or concrete could be used as fill for construction of bridges or culverts. Rock riprap may be used as an erosion control measure where flowing water could erode around project facilities.

Quantity of Material

The amount of fill used at each location would be dependent on the topography of the affected wetland and type of fill needed (such as soil, steel, or concrete). Quantities will be determined during the final design phase. The quantity will be sufficient to build the project.

Source of Material

The locations of source materials for fill will be determined as part of the final design. No location would be chosen if it has toxic materials, high salinity levels, heavy metals, acid-generating substances, or any material potentially harmful to fish, wildlife, or other aquatic organisms. Borrow site development would not affect any cultural or historic resource, threatened or endangered species, or aquatic resource.

Description of the Proposed Discharge Sites

A consulting firm, CH2M HILL, prepared a Biological Resources Report for the proposed project (CH2M HILL 2003). The report describes the methodology used to identify wetlands and documents the location, size, and type of wetlands found in the project area. Table E-2 presents a summary of wetland characteristics for wetlands located within the project area. Figure E-3 shows the location of all wetlands in the project area. Only wetlands along the proposed route of Alternative 5B were formally delineated in the field from August 12 to August 15, 2003, using the 1987 U.S. Army Corps of Engineers' (COE) *Wetlands Delineation Manual (*COE 1987). Boundaries of the other wetlands shown on Figure E-3 were identified in the field, but not formally delineated, and transferred to project maps. The MWAM was used to identify the wetland functional value of each wetland (Berglund 1999).

Location of Sites

Wetlands and waters of the U.S. impacted by the Preferred Alternative are located in the Clarks Fork Yellowstone River drainage basin. A total of 25 wetlands (includes 2 streams) and

5 jurisdictional canals were identified in the project area. Of these, 3 wetlands and 4 canals would be impacted by the Preferred Alternative. Figure E-3 shows the location of all wetlands.

Size of Sites

The total size of the wetlands to be impacted by the Preferred Alternative range from 0.1 to 0.9 hectares based on a delineation using the 1987 Wetland Delineation Manual. Table E-3 summarizes the wetlands impacted by the Preferred Alternative and indicates both the size of the entire wetland and the amount of each wetland likely to be impacted. The final number of wetland acres that would be impacted would be determined during final design, but is not expected to vary substantially from the estimates provided in Table E-3.

Type of Sites

The impacted wetlands fall into two hydrogeomorphic categories: small riverine systems and depressional systems. Depressional wetlands are most common. Riverine systems are wetlands associated with rivers or streams. Depressional systems are formed in depressions and are fed by surface or ground water. With one exception (WL 14), all affected depressional wetlands are supported by irrigation water runoff or groundwater.

Types of Wetland Habitats

Table E-3 shows the type of each wetland to be impacted by the Preferred Alternative.

TABLE E-3
Wetlands to be Impacted by the Preferred Alternative (5B), Combined West Bench Alternative

Wetland ID	Wetland Type (after Cowardin)[1]	State Classification [2]	Affected Area (ha)
WL5	PEM & PSS	III	0.5
WL13	PEM & PFO	IV	0.1
WL14	PEM & PSS & PFO	I	0.1
		Wetland Subtotal	**0.6**
White Horse Canal	Water of the U.S.	NA	0.9
Davis Ditch	Water of the U.S.	NA	0.1
Smith Ditch	Water of the U.S.	NA	0.1
Free Silver Ditch	Water of the U.S.	NA	0.1
		Canal Subtotal	**1.1**
		Total	**1.8**

[1]Cowardin wetland types: PFO = palustrine forested, PSS = palustrine shrub/scrub, PEM = palustrine emergent

[2]I = wetlands that are exceptionally high quality and are rare to uncommon; III = wetlands that are more common, generally less diverse, and smaller and more isolated than II; IV = wetlands that are small, isolated, and lack vegetative diversity

TABLE E-2
Summary of Wetlands Within the US 212 Rockvale to Laurel Project Area, Including Data Collected Using MDT's Montana Wetland Assessment Method[a]

Impacted (Alt.)[b]	Wetland ID	Area ha (ac)	Wetland Type[c]	Vegetative Layer	Primary Species	Wetland Indicator Status for Listed Primary Species[d]	Weed Species Noted In or Adjacent to Wetland Areas	Overall Analysis Rating[e]	Functional Value Rating (%)	Functional Units[f] (ha [ac])	Primary Functions Values	Jurisdictional Wetland Status[g]	Description
Yes (1)	WL1	0.8 ha (2.0 ac)	PFO	Tree	Black cottonwood (*Populus trichocarpa*)	FAC		I	60%	4.8 ha (12.0 ac)	General wildlife habitat. Groundwater discharge/recharge. Uniqueness value given for large, old, deciduous trees.	J	Non-isolated spring feeding floodplain wetlands along the Yellowstone River.
					Plains cottonwood (*Populus deltoides* var. *occidentalis*)	FACW							
					Box elder (*Acer negundo*)	FAC							
					Chokecherry (*Prunus virginiana*)	FACU							
Yes (2)	WL2	0.2 ha (0.5 ac)	PSS	Herb	Kentucky bluegrass (*Poa pratensis*)	FAC		I	46%	0.8 ha (2.0 ac)	Montana Natural Heritage Program species potential habitat. General wildlife habitat. Sediment/nutrient/toxicant removal. Uniqueness.	J	Depression (open surface).
					Stinging nettle (*Uritic dioica*)	FACW							
					Arrowleaf groundsel (*Senecio triangularis*)	OBL							
				Shrub	Sandbar willow (*Salix exigua*)	OBL							
				Tree	Peachleaf willow (*Salix amygdaloides*)	FACW							
Yes (2)	WL3	0.2 ha (0.5 ac)	RUB	Herb	Baltic rush (*Juncus balticus*)	OBL	Canada thistle (*Circium arvense*)	III	46%	1.4 ha (3.5 ac)	Montana Natural Heritage Program species potential habitat. Flood attenuation. Short- and long-term surface water storage. Sediment/nutrient/toxicant removal. Production export/food chain support.	J	Young system/ stream bed continually receiving and depositing silt from adjacent farmland into lake (unconsolidated bottom).
					Kentucky bluegrass	FACU	Tumble mustard (*Sisymbrium altissimum*)						
					Low northern sedge (*Carex concinna*)	FACU	Flixweed (*Descurainia sophia*)						
					Creeping spikerush (*Eleocharis palustris*)	OBL	Morning glory (*Convolvulus arvensis*)						
Yes (2)	WL4	0.4 ha (1.0 ac)	PEM	Herb	Broad-leaf cattail (*Typha latifolia*)	OBL	Canada thistle	IV	18%	0.7 ha (1.5 ac)	Sediment/nutrient/toxicant removal. Dynamic surface water storage.	J	PEM-system: depression (open surface). Irrigation return seep.
					Wild licorice (*Glycyrrhiza lepidota*)	FAC-	Tumble mustard						
					Western dock (*Rumex occidentalis*)	OBL	Common hound's tongue (*Cynoglossum officinale*)						
					Macoun's buttercup (*Ranunculus macounii*)	OBL	Bur chervil (*Anthriscus caucalis*)						
Yes (2, 3B, 5A, 5B [Preferred])	WL5	1.8 ha (4.5 ac)	PEM & PSS	Herb	Broad-leaf cattail	OBL	Climbing nightshade (*Solanum dulcamara*)	III	37%	6.2 ha (15.5 ac)	Short- and long-term surface water storage.	J	Depression (open surface). Canal leakage.
					Common reed (*Phragmites australis*)	FACW+							
					Three-square bulrush (*Scirpus pungens*)	OBL							
				Shrub	Clasping-leaf dogbane (*Apocynum cannabinum*)	FAC							
				Tree	Sandbar willow	OBL							
					Box elder	FACW							
Yes (2)	WL6	0.1 ha (<0.5 ac)	PEM	Herb	Broad-leaf cattail	OBL	Climbing nightshade	IV	13%	0.3 ha (0.5 ac)	Groundwater discharge/recharge.	J	Depression (open surface).
					Nebraska sedge (*Carex nebrascensis)*	OBL	Field pennycress (*Thlaspi arvense*)						
					Baltic rush	OBL	Tumble mustard						
Yes (3A)	WL7	<0.1 ha (<0.5 ac)	PEM	Herb	Broad-leaf cattail	OBL	Canada thistle	III	21%	0.1 ha (<0.5 ac)	General wildlife. Production export/food chain support.	NJ	Depression (open surface). Roadside ditch.
					Asparagus (*Asparagus* sp.)	NI	Climbing nightshade						

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Yes (3A, 3B)	WL8	0.3 ha (1.0 ac)	PEM	Herb	Broad-leaf cattail	OBL		III	44%	2.0 ha (5.0 ac)	Sediment/nutrient/toxicant removal. Groundwater discharge/recharge. General wildlife habitat.	J	Depression (open surface). Irrigation canal leakage.
					Smooth scouring-rush (*Equisetum laevigatum*)	FACW							
					Three-square bulrush	OBL							
					Prairie cordgrass (*Spartina pectinata*)	OBL							
					Canadian single-spike sedge (*Carex scirpoidea*)	FACU							
Yes (3A, 3B)	WL9	0.7 ha (1.5 ac)	PEM & PSS	Herb	Broad-leaf cattail	OBL		III	44%	0.7 ha (2.0 ac)	Sediment/nutrient/toxicant removal. Groundwater discharge/recharge. General wildlife habitat.	J	Depression (open surface). Wetland source: Irrigation canal leakage.
					Baltic rush	OBL							
					Prairie cordgrass	OBL							
				Shrub	Sandbar willow	OBL							
No	WL10	0.1 ha (<0.5 ac)	PEM	Herb	Broad-leaf cattail	OBL		III	33%	0.1 ha (0.5 ac)	Sediment/nutrient/toxicant removal. Groundwater discharge/recharge.	NJ	Depression (open surface). Irrigation canal leakage.
					Three-square bulrush	OBL							
					Beaked sedge (*Carex utriculata*)	OBL							
No	WL11	0.1 ha (0.5 ac)	PEM & PSS	Herb	Broad-leaf cattail	OBL		II	73%	1.3 ha (3.0 ac)	Montana Natural Heritage Program species habitat. General wildlife habitat.	J	Depression (open surface). Non-isolated basin/old river oxbow, Clarks Fork Yellowstone River.
					Beaked sedge	OBL							
					Three-square bulrush	OBL							
					Baltic rush	OBL							
				Shrub	Sandbar willow	OBL							
					Dogwood (*Cornus stolonifera*)	FACW							
				Tree	Peachleaf willow	FACW							
					Plains cottonwood	FACW							
Yes (3A, 3B)	WL12	5.5 ha (13.5 ac)	PEM	Herb	Broad-leaf cattail	OBL		III	57%	25.6 ha (63.0 ac)	Short- and long-term surface water storage. Groundwater discharge/recharge. General wildlife habitat.	J	Depression (open surface).
					Prairie cordgrass	OBL							
					Three-square bulrush	OBL							
					Smooth scouring-rush	FACW							
				Shrub	Sandbar willow	OBL							
Yes (all alternatives)	WL13	0.1 ha (<0.5 ac)	PEM & PFO	Herb	Beaked sedge	OBL		IV	23%	0.6 ha (1.5 ac)	Sediment/nutrient/toxicant removal.	NJ	Depression (open surface). Roadside ditch.
					Water speedwell (*Veronica anagallis-aquatica*)	OBL							
					Broad-leaf cattail	OBL							
				Tree	Chokecherry	FACU							
					Box elder	FAC							
					Black cottonwood	FAC							

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Impacted (Alt.)[b]	Wetland ID	Area ha (ac)	Wetland Type[c]	Vegetative Layer	Primary Species	Wetland Indicator Status for Listed Primary Species[d]	Weed Species Noted In or Adjacent to Wetland Areas	Overall Analysis Rating[e]	Functional Value Rating (%)	Functional Units[f] (ha [ac])	Primary Functions Values	Jurisdictional Wetland Status[g]	Description
Yes (all build alternatives)	WL14	6.5 ha (16.0 ac)	PEM & PSS & PFO	Herb	Broad-leaf cattail	OBL	Canada thistle	I	77%	44.2 ha (109.0 ac)	Threatened and endangered species habitat. (Bald eagles possibly fly through.) Montana Natural Heritage Program species habitat. General wildlife habitat. Flood attenuation. Short- and long-term surface water storage. Uniqueness.	J	Depression (open surface). Non-isolated/old river oxbow, Clarks Fork Yellowstone River.
					Three-square bulrush	OBL	Morning glory						
					Beaked sedge	OBL	Russian olive						
					Cinquefoil (*Potentilla rivalis*)	NI							
				Shrub	Dogwood	FACW							
					Sandbar willow	OBL							
					Bebb willow (*Salix bebbiana*)	FAC+/FACW							
				Tree	Peachleaf willow	FACW							
					Plains cottonwood	FACW							
					Narrowleaf cottonwood (*Populus angustifolia*)	FACW							
					Russian olive (*Elaeagnus angustifolia*)	FAC							
No	WL15	0.3 ha (0.5 ac)	PSS	Herb	Small-winged sedge (*Carex microptera*)	FAC		III	35%	0.4 ha (1.0 ac)	Sediment/nutrient/toxicant removal.	J	Depression (open surface).
					Western dock	OBL							
					Sandbar willow	OBL							
				Shrub	Mackenzie willow (*Salix rigida* var. *mackenzieana*)	OBL							
				Tree	Plains cottonwood	FACW							
No	WL16	<0.1 ha (<0.5 ac)	PEM	Herb	Poison ivy (*Rhus radicans*)	NI		III	38%	0.5 ha (1.0 ac)	General wildlife habitat. Groundwater recharge/discharge	J	
					Wild licorice	FAC-							
					Broad-leaf cattail	OBL							
					Baltic rush	OBL							
					Beaked sedge	OBL							
Yes (3A, 5A)	WL17	0.6 ha (1.5 ac)	PFO	Herb	Cow parsley (*Heracleum lanatum*)	FACW		II	64%	1.1 ha (2.5 ac)	General wildlife habitat. Uniqueness.	J	Depression (open surface). Water source is mainly from irrigation canal turnout leak.
					Stinging nettle	FACW							
				Shrub	Chokecherry	FACU							
				Tree	Peachleaf willow	FACW							
					White poplar (*Populus alba*)	NI							
					American elm (*Ulmus americana*)	FAC							
Yes (3A)	WL18	0.5 ha (1.5 ac)	PSS & PFO	No access allowed at time of survey. From a distance and from aerial photographs, looks similar to WL 17. Canal leak probable water source.								J	
Yes (3A)	WL19	0.6 ha (1.5 ac)	PFO	No access allowed at time of survey. From a distance and from aerial photographs, looks similar to WL 17. Canal leak probable water source.								J	
No	WL20	0.1 ha (<0.5 ac)	PEM	No access allowed at time of survey. From a distance and from aerial photographs, looks similar to WL 17. Canal leak probable water source.								J	
Yes (3A)	WL21	0.3 ha (0.5 ac)	PFO	No access allowed at time of survey. From a distance and from aerial photographs, looks similar to WL 17. Canal leak probable water source.								J	

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Impacted (Alt.)[b]	Wetland ID	Area ha (ac)	Wetland Type[c]	Vegetative Layer	Primary Species	Wetland Indicator Status for Listed Primary Species[d]	Weed Species Noted In or Adjacent to Wetland Areas	Overall Analysis Rating[e]	Functional Value Rating (%)	Functional Units[f] (ha [ac])	Primary Functions Values	Jurisdictional Wetland Status[g]	Description
No	WL22	1.0 ha (2.5 ac)	PEM	Herb	Broad-leaf cattail	OBL		IV	16%	1.4 ha (3.5 ac)	Moderate sediment/nutrient/toxicant removal potential.	J	Depression (open surface).
					Smooth scouring-rush	FACW							
					Three-square bulrush	OBL							
No	WL23	0.8 ha (2.0 ac)	PEM & PSS	Herb	Broad-leaf cattail	OBL		II	62%	4.5 ha (11.0 ac)	Short- and long-term surface water storage. Sediment/nutrient/toxicant removal.	J	Depression (open surface), possibly an old oxbow of the Clarks Fork Yellowstone River.
					Three-square bulrush	OBL							
					Common reed	FACW+							
				Shrub	Sandbar willow	OBL							
				Tree	Peachleaf willow	FACW							
Yes (1)	WL24	2.8 ha (7.0 ac)	PFO	Tree	Black cottonwood	FAC		II	68%	27.7 ha (61.0 ac)	Sediment/shoreline stabilization. Production export/food chain support. Groundwater discharge/recharge.	J	Riparian edge of perennial stream.
					Box elder	FAC							
					Sandbar willow	OBL							
Yes (1)	WL25	0.2 ha (0.5 ac)	RUB					III	38%	--	Sediment/shoreline stabilization.	J	Aquatic bed riverine upper perennial. Active channel.

[a]These data are based on preliminary wetland field evaluations using MDT's Montana Wetland Assessment Method (MWAM). Formal delineations with soil analyses would be conducted on the alternative selected.

[b]Yes (X, Y, Z) = direct impact, with alternative identifiers in parentheses; No = no direct impact.

[c]Wetland Type: PEM = palustrine emergent marsh; PFO = palustrine forest; PSS = palustrine scrub-shrub; RUB = riverine unconsolidated bottom.

[d]Wetland Indicator Status for Listed Primary Species: FAC = facultative; FACU = facultative upland; FACW = facultative wetland; OBL = wetland obligate; NI = no indicator; + and - = modifiers

[e]Overall Analysis Rating: Functional categories I through IV with I = wetlands that are exceptionally high quality and are rare to uncommon; II = wetlands that are more common than I and that provide habitat for sensitive species, have high wildlife value, are unique or have high function values; III = wetlands that are more common, generally less diverse and smaller and more isolated than II; IV = wetlands that are small, isolated, and lack vegetative diversity.

[f]A functional unit is the size of the wetland multiplied by the actual function points of the wetland for the Category being rated or for the wetland as a whole.

[g]Jurisdictional Wetland Status: J = jurisdictional wetland. NJ = non-jurisdictional wetland.

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ALTERNATIVE ALIGNMENTS

- 1 Far West Bench Alternative
- 2 Near West Bench Alternative
- 3 Near Existing Alignment Alternative (A & B)
- 5 Combined West Bench Alternative (A & B)

WL16
WL14
WL13
WL23
WL15
WL4
WL1
SPRING
WL12
WM-H
WL11
WL10
WL9
WM-G
WL8
WM-F
WM-E
WL3
WM-D
WM-C
WL22
WL17
WL2
WM-B
WL18
WL19
WL20
WL21
WL5
WL6
WL7
WM-A
WL25
WL24

LEGEND:

- Wetlands (Sites WL1 through WL25)
- Potential Wetland Mitigation (Sites WM-A through WM-H)

N

0 200 400 600 800 METERS

ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT

FIGURE E-3
WETLAND AND POTENTIAL WETLAND MITIGATION SITES ALONG US 212 FROM ROCKVALE TO LAUREL

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Timing and Duration of Discharge

The timing and duration of each discharge will depend on the type of construction activity being conducted (bridge, culvert construction, or road construction). The timing and schedules for construction would be developed during the final design phase. Timing will reflect an effort to minimize detrimental effects such as sedimentation, turbidity, etc. Construction will not impact any critical life stage or activity of aquatic organisms such as migration or spawning. However, some bird migration and nesting activity may restrict construction. Migration and nesting activities usually fall between April 1 and July 15.

Description of Disposal Method

The type of disposal method would depend on the type of construction that is undertaken at the fill location. A description of the disposal method that details general construction methods for road building or for constructing a culvert in the vicinity of wetlands or waters of the U.S. is provided below.

Roadway Construction: Fill would need to be placed in wetlands during construction of the highway where they are encountered along the new alignment. Large earth-moving and excavating equipment would most likely be used to place the fill. The fill would be necessary to adjust the elevation of the highway or to construct proper side slopes. The fill would be from nearby sources (borrow pits) or from excess natural material removed from other roadway construction locations.

Culvert Construction: Culverts to be placed within four canal crossings and the Farewell Creek crossing would be constructed during the non-irrigation season to the extent practicable, when the canals are dry. If construction schedules do not allow for non-irrigation season construction, the construction site would be hydraulically isolated by constructing cofferdams upstream and downstream of the construction site. Canal water would be pumped around the construction area. Any water pumped from the construction area would be placed into temporary settling ponds to remove sediment prior to returning the water to the canal.

Factual Determinations (Section 230.11)

Physical Substrate Determinations

Substrate Elevation and Slope

Canal and Stream Crossings: There would be no adverse impact to substrate slope at canal and stream crossings. The slope of each canal is essentially flat, and this slope would be maintained. Substrate slope in Farewell Creek is 1.4 percent. Substrate elevation would be slightly increased at each canal and stream crossing to accommodate placement of the culvert. Table E-3 shows the affected area of each wetland or waters of the U.S.

Road Building: As fill material is placed in wetlands to construct the roadbed and provide slopes, the elevation at that point would increase to meet the new roadway elevation. The amount of elevation change will be determined during final design of the roadway. The slope of the wetlands outside the location of fill would not change.

Changes to natural surface flow patterns and changes in the natural erosion and accretion patterns would be avoided to the extent possible.

Compare Fill Material and Substrate at Discharge Sites

Canal substrate is typically sandy to granular sediments, with some gravel and small rock. The fill to be used in canals would be metal and/or concrete culvert material.

Substrates in wetland areas could be fine sediments or organic material. The fill to be placed in the wetlands would be either granular material from nearby borrow areas or material excavated elsewhere in the construction area. Whichever is chosen would be approved material for roadway construction.

Dredged/Fill Material

All fill material placed into wetlands or canals would be placed in such a manner to avoid or minimize movement from erosion. All fill materials, regardless of the source, would be earth and crushed or naturally occurring sand and gravel or culvert materials.

Physical Effects on Benthos Invertebrates/Vertebrates

Physical Effects on Benthos: Benthic organisms could only be affected at the point of fill discharge at any location where construction-related sediment would accumulate. Effects would be localized and short-term, however, as the benthic organisms would colonize and re-establish themselves in suitable parts of the fill. There may be a slight decrease in the amount of substrate, as the fill would create more dry land and less wet area.

Aquatic Macro-invertebrates: Impacts to aquatic macro-invertebrates would be similar to those for benthos: temporary and short-term. Initial fill activities would bury some invertebrates, but they would be expected to re-establish themselves on suitable portions of the new substrate fairly quickly. Sediment released into waters and wetlands during construction would also affect invertebrates by interfering with foraging by aquatic insects and by filling interstitial spaces, which is invertebrate habitat. Sediment effects on invertebrates would be short-term. However, interstitial space would be limited within fine-grain fill, which would limit the amount of long-term macro-invertebrate habitat.

Vertebrates: Fish are the primary aquatic vertebrate potentially affected by the project. However, no project-related activities would occur directly in habitat occupied by fish. Sediment control through implementation of Best Management Practices (BMPs) would protect occupied habitat from sediment effects. Toxic material releases would also be prevented through implementation of BMPs. No impacts are expected to aquatic vertebrates.

Erosion and Accretion Patterns

All culverts will be sized and oriented in a manner to avoid initiating erosion and subsequent accretion. There would be no effect to waters or wetlands because of erosion and accretion resulting from culvert placement.

Actions Taken to Minimize Impacts

Measures to minimize wetland and waters impacts would be incorporated into the Preferred Alternative. Specific actions to minimize impacts would be described when specific impacts are identified during final design. Actions to be implemented would include, but not be limited to:

1. Avoiding wetlands and waters during final design by shifting alignment or altering grade
2. Minimizing the fill footprint
3. Using fill materials that are similar to the underlying substrate when possible
4. Scheduling construction to coincide with low flow periods or outside the irrigation season
5. Using BMPs in the MDT Highway Construction Standard Erosion Control Work Plan to control erosion. This would minimize discharge of sediments and pollutants into surface waters. Appropriate BMPs would be selected during final design
6. Including BMPs and compliance monitoring in construction specifications

Water Circulation, Fluctuation, and Salinity Determinations

Water

The DEIS discusses surface waters and their quality. Impacts to specific water quality components are discussed below. The Yellowstone River, Clarks Fork Yellowstone River, and Rock Creek were included on the 1996 303(d) list of impaired water bodies. Only Rock Creek was included on the Final 2000 303(d) list. Table E-4 outlines the probable causes for listing.

Salinity: No specific salinity tests have been conducted, but there is some indication that saline areas could be present in the project area. Salinity increases in wetlands should not be a problem, because hydrologic regimes would not be altered and the use of fill materials significantly different from local substrates would be minimized.

Water Chemistry: There is no reason to suspect that the Preferred Alternative would increase the pH, hardness, alkalinity, or mineral concentration of surface waters in the project area.

Suspended Solids: There may some localized, temporary increases in suspended solids in wetlands from construction. There is no reason to anticipate a long-term increase in suspended solids in surface waters. Using appropriate granular fill material and construction methods would minimize the potential for suspended solids increases. Construction would be scheduled to avoid high runoff periods or the irrigation season to the extent practicable.

TABLE E-4
Stream Segments in the Project Area Found on the 1996 and 2000 303(d) Lists

Stream	Length (km)	Probable Cause
1996 303(d) List		
Yellowstone River	109.4	Salinity/TDS/Chlorides; Suspended Solids; Un-ionized Ammonia
Clarks Fork Yellowstone River	107.8	Flow Alteration; Metals; Nutrients; Salinity/TDS/Chlorides; Siltation; Suspended Solids; Thermal Modifications
Rock Creek	24.1	Flow Alteration; Other Habitat Alterations; Siltation; Suspended Solids
2000 Final 303(d) List		
Rock Creek	109.4	Flow Alteration; Dewatering

Clarity: Turbidity will increase slightly during construction because of suspended solids. Even though this effect is expected to be minor and temporary, it can cause impacts to aquatic organisms from filling of interstitial spaces and reduction in visibility. Erosion control Best Management Practices (BMPs) would be used to minimize this effect.

Color: There will be a temporary change in wetland water color during construction from increases in suspended solids and turbidity. The effect would be short-term and localized and be most pronounced during the construction period.

Odor: There would be no expected change in surface water odor.

Taste: There would be no expected change in surface or ground water taste.

Dissolved Gas Levels: There would be no change in hydrologic regimes that would alter flow patterns. Therefore, there would be no change in surface water dissolved gas levels.

Nutrients: Surface water nutrients, which typically arise from agricultural activities and decay of organic matter, would not change because of construction of the Preferred Alternative.

Eutrophication: As discussed above, sediment and nutrient loads in surface waters are not expected to significantly increase with project implementation. Waters and wetlands impacted by the project are primarily canals and depressional wetlands. Canals are free-flowing and therefore nutrient-induced plant growth is usually not a problem. Wetlands are,

by their nature, usually eutrophic. Eutrophication should not increase, but may occur more rapidly in depressional wetlands when they are partially filled.

Current Patterns and Circulation

Current Patterns, Drainage Patterns, Normal and Low Flows. No project feature is expected to alter natural flow or drainage patterns. Seasonal surface or ground water flows would not be altered.

Velocity. No structure constructed during this project would impede existing water flow. Existing velocities would not be affected.

Stratification. The proposed project is not expected to alter the current stratification of waters in any wetland or waters of the U.S.

Hydrologic Regime. The proposed project is not expected to alter any hydrologic regime in any wetland or waters of the U.S.

Aquifer Recharge. The proposed project is not expected to alter recharge of any aquifer from any wetland or waters of the U.S. in the project area.

Normal Water Level Fluctuations

All culverts would be designed to pass existing velocities and flows without altering water surface elevations or causing backwater problems. There would be no effect.

Salinity Gradients

Changes in salinity gradients would not be expected, as changes in hydrology are not anticipated.

Actions That Will Be Taken to Minimize Impacts

The following measures are proposed to minimize impacts:

1. All culverts will be constructed and sized to maintain natural water levels and flow velocities.

2. All existing cross-highway drainage patterns across the new roadway will be maintained to allow passage of aquatic organisms.

Suspended Particulate/Turbidity Determinations

Expected Changes in Suspended Particulate and Turbidity Levels in the Vicinity of the Disposal Sites

The placement of fill into wetlands and waters would introduce some fine particulate material into the surface water. This would cause temporary increases in suspended particulates and turbidity. In addition, bottom sediments may be re-suspended when fill is placed into wetlands; thereby increasing suspended particulates and turbidity.

Stormwater runoff may also carry sediment into surface water. Therefore a standard erosion control plan would be developed and adhered to in order to minimize sediment dislodgment and transport. Any sediment deposited into wetlands from erosion that degrades wetland functions or reduces functional area will need to be removed.

Effects on Chemical and Physical Properties of the Water Column

Light Penetration. There would be a short-term introduction of sediment into surface waters near construction sites. This would temporarily increase turbidity and reduce light penetration.

Dissolved Oxygen. There would be no turbulence or stagnation introduced into wetlands or waters and therefore no affects to dissolved oxygen. Fill introduced into wetlands will be inorganic for the most part and therefore would not introduce any biological oxygen demand.

Toxic Metals and Organics. Fill material would be approved for highway construction and not contain high levels of organic material or any toxic metals. No fill would be collected from areas identified as hazardous in the DEIS.

Pathogens. Domestic animal and wildlife waste is found in the project area. No incidences of whirling disease or botulism are known to have occurred in the project area. All fills will be free of organic material and pathogens.

Aesthetics. There would be some localized, temporary adverse effect on the aesthetics of surface waters adjacent to construction areas from sediment deposition. The effect would decrease as the distance from the construction site increases. The effect would be temporary.

Effects on Biota

Primary Production and Photosynthesis. There would be some temporary increase in turbidity of surface waters, but not at a level that would affect photosynthesis or primary productivity.

Suspension/Filter Feeders. Organic matter suspended in the water column are captured by suspension/filter feeders. Suspended sediments near construction sites would affect the ability

of these organisms to feed, may bury the organism, or may cover their habitat. The effect would be temporary and the organisms would rapidly re-colonize the area after construction.

Sight Feeders. Clear water is needed for these organisms to forage. Suspended sediments near construction sites would affect the ability of these organisms to feed. The effect would be temporary and as described above. The organisms would rapidly move back into areas not directly affected by fill placement after construction.

Actions Taken to Minimize Impacts

MDT's Standard Erosion Control Work Plan would be used to minimize suspended sediment and turbidity effects. The plan would minimize the extent of disturbed areas, reduce the duration of exposure, stabilize disturbed areas, and retain sediment in the corridor.

Aquatic Ecosystem and Organism Determinations

Effects on Special Aquatic Sites

Sanctuaries and Refuges. There are no federal, state, or local designated wildlife or waterfowl sanctuaries or refuges in the project area. There would no impacts to these types of sites.

Wetlands. Table E-2 shows the type and amount of wetlands in the project area. Table E-3 show the impacts expected to these sites from implementation of the Preferred Alternative. There are a variety of wetland types, mostly associated with irrigation. Canals are included as waters of the U.S.

The Preferred Alternative is expected to impact 1.8 ha of wetlands and waters. This amount is less than that originally anticipated to be impacted, because of adjustments in the alignment to avoid wetlands. Approaches to compensate for this loss are discussed later in this report.

Mudflats. There are no mudflats in the project area and, therefore, no effects to them.

Vegetated Shallows. There are no vegetated shallows in the project area and, therefore, no effects to them.

Riffle and Pool Complexes. There are riffle and pool complexes associated with other alternatives in the proposed project. There are none associated with the Preferred Alternative and therefore, no effects to them.

Effects on Threatened and Endangered Species and Their Habitats

The U.S. Fish and Wildlife Service (FWS) has reported that two federally listed species are found in the project area: bald eagle (threatened) and black-footed ferret (endangered). There are no known black-footed ferrets in the project area. Bald eagles occupy habitat along the

Clarks Fork Yellowstone River and along the Yellowstone River. An active nest occurs along the Clarks Fork Yellowstone River near Silesia.

No direct impacts are expected to any listed species. An indirect effect may occur to bald eagles, where they could be struck by a car when feeding on carrion along the new highway alignment. There would be "no effect" to any listed species. Specific conservation measures, as stated in the Biological Assessment, to avoid impacts to bald eagles include the curtailment of construction during the breeding, nesting, fledging, and wintering season from November 15 through August 31.

Effects on Other Animals

A variety of wildlife is found in the project area. Predominant habitats are upland grassland, pasture, and agricultural fields. Wood lot, riparian, and wetland habitats are also present, but in lesser amounts. Human and human-related activities such as livestock grazing and farming are common throughout the project area.

Vehicle collisions are the greatest threat to wildlife. Small mammal, reptiles, and amphibians are the most susceptible to collisions, because they are small and less mobile. Deer are also likely to be hit. Vehicle collision mortality may increase over existing conditions, because the old road will not be closed and, therefore, there will be more highway miles driven in the project area. Speeds may also increase, possibly resulting in additional collisions. Power lines may affect some species of raptors and other birds, adversely or positively. The new road may fragment habitat, especially for reptiles and other species with limited habitat areas. Other habitat would be lost to the new roadway. Additional effects on wildlife may occur as a result of noise, dust, etc.

The Biological Report details potential impacts to wildlife and their habitats.

Effects on Terrestrial Plants

Sections of plant communities would be lost with construction of the proposed project. Losses would be related to direct removal during construction (such as wetland fills), temporary loss under project facilities such as batch plants, contractor trailers, and material storage piles. The small acreage removed relative to the amount of similar habitats in the project area would result in minimal impacts.

Disturbance can result in bare areas susceptible to weed invasion. Purple loosetrife, Canada thistle, and spotted knapweed are of most concern in and near wetland habitats. BMPs would be used to rapidly revegetate disturbed areas before weeds can invade and displace native plants. Weed control efforts should continue for a few growing seasons until desired vegetation is re-established.

Actions Taken to Avoid and Minimize Impacts

No discharge of fill material into wetlands will be allowed if there is a practicable alternative to the discharge. The Preferred Alternative has been developed to minimize wetland impacts

to the extent practicable. As a result of avoidance efforts, approximately 1.5 ha of wetland impacts were avoided (Table E-1).

Additional efforts to minimize wetland impacts include the following:

1. Use, wherever possible, steeper fill slopes and smaller fill volumes for construction in wetlands. The exact measures would be refined during final design.
2. Perform as much work in wetlands as possible from adjacent uplands.
3. Clearly mark wetland areas to be avoided during construction.
4. Limit wetland disturbance by clearly showing limits of grubbing, clearing, and filling on the construction plans and indicating none is allowed outside the limits. Any temporary clearing outside the construction limits, but within the right-of-way, that is necessary for culvert installation or other similar activities would be kept to a minimum area and reclaimed after disturbance is complete.
5. Perform culvert placement outside the irrigation season.
6. Use phased construction to keep the amount of bare soil to a minimum.

Other construction restrictions may be required to avoid nesting migratory birds, including bald eagles.

Compensatory Actions Taken to Minimize Impacts

All practicable and appropriate efforts will be made to avoid and then minimize impacts to wetlands and waters from the proposed project. However, some unavoidable project-related impacts to wetlands and waters are expected. The COE requires that compensatory mitigation be provided for all unavoidable adverse impacts. The COE's preference is that mitigation be on-site (in the project area) and in-kind (same type of wetlands that were impacted). If on–site opportunities are not available, then off-site mitigation can be proposed. Finally, out-of-kind mitigation can be proposed if in-kind mitigation is not possible.

Compensatory mitigation is designed to replace functions and values lost from impacted wetlands at the mitigation site. MDT's approach is to propose on-site mitigation first. If that is not possible, then off-site mitigation within the same watershed is the next option. A conservation easement or similar restriction would protect desired wetland functions at all compensatory mitigation sites.

Successful creation of a properly functioning natural wetland community is a difficult and complicated process. It requires time, proper site selection and analysis, a good design, close adherence to the design during construction, post-construction monitoring, and, possibly, corrective measures. Establishment of a reliable water source is a key component in the development of a successful mitigation site. Several sources of water have been located in the project area to provide the required wetland hydrology.

A Section 404 Permit will be required from the COE to place fill in wetlands. Compensatory mitigation would be proposed as part of the permitting process. The exact acreage of

compensatory mitigation would be determined after exact impacts have been identified during final design. The COE allows wetland impacts to be compensated at a ratio of 1:1 for restoration (re-establishment) and establishment (creation) of wetlands. Larger ratios would be required for enhancement or rehabilitation of existing wetlands.

A brief description of measures taken to avoid and minimize wetland impacts as well as measures to compensate for unavoidable impacts by implementing wetland mitigation measures follows. A more detailed description can be found in the DEIS.

Avoidance. Alternative 4 proposed crossing the Clarks Fork Yellowstone River twice. This alternative would have potentially resulted in significant wetland and waters impacts as well as significant impacts to aquatic and terrestrial wildlife. The alternative was dropped to avoid those impacts. Other opportunities to avoid wetland impacts will be identified during final design.

Minimization. In addition to previous efforts to minimize wetland impacts (Table E-1), additional minimization possibilities will be identified during final design.

On-Site Mitigation. A total of eight sites have been identified in the project area where one or more of the impacted wetland types could be created (see DEIS for locations). Table E-5 shows the sizes of the potential sites. All of these sites have likely supported wetlands prior to settlement and subsequent hydrologic alterations by settlers. The DEIS describes actions proposed at the mitigation sites to restore lost wetland functions and values.

TABLE E-5
Area of Potential Wetland Compensatory Mitigation Sites

Wetland Mitigation Site	Approximate Area (hectares/acres)
WM-A	6.6/16.5
WM-B	4.4/11.0
WM-C	7.0/17.5
WM-D	3.1/7.5
WM-E	2.7/6.5
WM-F	2.7/6.5
WM-G	3.4/8.5
WM-H	5.6/14.0

Monitoring of Mitigation Actions

Monitoring would be conducted at the mitigation site to follow the development of the new wetland. The Project Manager (or designee), MDT's Wetland Biologist, and other agency representatives would conduct inspections before, during, and after wetland construction. Inspections are likely to follow as described below:

- A visit to inspect the site to review final design plans prior to construction
- A visit prior to final grading
- A visit to monitor planting
- A visit following the first growing season to observe initial performance
- Annual monitoring using protocols and forms developed by MDT for 5 years. Annual reporting requirements are in force. Suggestions for management changes would be made in the annual reports, if needed to correct deficiencies.
- Final inspection made in Year 4 or Year 5 to determine mitigation success. The COE is likely to participate in this visit and the success would be determined based on development of the three parameters used by the COE to delineate wetlands. It is unlikely that hydric soils would have completely developed within 4 or 5 years, but hydric soils can be assumed if hydrophytic vegetation and wetland hydrology are well established.
- Periodic long-term monitoring to ensure there are no adverse changes in hydrology
- There will also be field monitoring of the construction of the Preferred Alternative to ensure unacceptable impacts to surface waters are not occurring. It will also be determined that impacts are as predicted and that additional impacts are not incurred, which would require additional mitigation. Participants in this monitoring may include MDT, COE, Montana Department of Environmental Quality (MDEQ), and the Montana Department of Fish, Wildlife, and Parks (MFWP).

Potential Effects on Human Use Characteristics

Livestock grazing would be lost on areas where rangeland and pasture are lost to construction activities or where livestock are excluded from near the new roadway. This impact affects only a small portion of total grazing area in the project area and would be minimal.

There would be some agricultural cropland lost to construction. Approximately 47.1 ha of prime farmland and state important farmland would be lost, and approximately 111.8 ha of total farmland would be lost. While this is a small portion of the total farmland in the project area, its loss would be important to those farmers losing a portion of their fields.

Five domestic wells would be lost with construction of the Preferred Alternative. No public water supply wells would be affected. This impact is minimal, as MDT would help affected landowners replace lost water supplies.

Determination of Cumulative Effects on Aquatic Ecosystems

Cumulative effects are effects to wetlands in an area from a number of projects, each contributing a certain amount of impact. Individually, the effects may be minor, but collectively, the sum of the small impacts may result in a large impact to water quality and the aquatic ecosystem.

There are no known projects in the vicinity of this project that would result in wetland losses.

Determination of Secondary Effects on Aquatic Ecosystems

Secondary effects are those that do not arise directly from fill placement, but affect wetlands from other project-related activities. Secondary effects that may occur with the Preferred Alternative include sediment deposition from erosion, accidental spills of toxic materials into a wetland, and establishment of noxious weeds or other undesired invasive plants on bare areas. An Erosion Control Plan and Stormwater Management Plan would prevent sediment deposition. Standard spill prevention BMPs would prevent toxic releases during construction. Rapid revegetation of disturbed areas, as well as active weed control until desired vegetation is established, would help prevent establishment of noxious weeds and other invasive plants.

Findings of Compliance

Adaptation of the Section 404(b)(1) Guidelines to this Evaluation

The conceptual design for the Preferred Alternative was used to predict impacts from project implementation. The final design stage will be dependant on acceptance and approval of the Preferred Alternative. Some of the project-specific impacts presented in this 404(b)(1) analysis may need to be modified based on final design. A final 404(b)(1) analysis will be prepared following final design.

Evaluation of Availability of Practical Alternatives to the Proposed Discharge Sites that Would Have Less Adverse Impact on the Aquatic Ecosystem

Section 230.10(a) of the Guidelines states "Except as provided under 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." A discussion of alternative evaluated is presented below. More detailed analysis and descriptions are included in the DEIS.

No Build

There would no additional wetland impacts under this alternative. However, the existing safety problems and inability of the present roadway to accommodate the desired level of service needed would remain. Current conditions are not acceptable and do not meet the purpose or need of the proposed project.

Alternative 1—Far West Bench

Alternative 1 would impact 0.5 ha of jurisdictional wetlands and 1.4 ha of waters of the U.S.(canals). This compares to 0.6 ha and 1.2 ha of jurisdictional and waters impacts with the Preferred Alternative (5B). This is the only Build Alternative with fewer jurisdictional wetland impacts than the Preferred Alternative. However, this alternative would impact Rock Creek, a perennial stream. This impact was deemed more significant than impacts attributable to the Preferred Alternative, because of potential adverse effects on aquatic resources.

Alternative 2—Near West Bench

Alternative 2 would impact 0.8 ha of jurisdictional wetlands and 0.5 ha of waters of the U.S. (canals). Although impacts to canal waters are less, this alternative impacts a larger area of wetlands compared to the Preferred Alternative.

Alternative 3—Near Existing Alignment

Alternative 3A would impact 1.0 ha of jurisdictional wetlands and 0.5 ha of waters of the U.S. (canals). Alternative 3B would impact 0.9 ha of jurisdictional wetlands and 0.3 ha of waters of the U.S. (canals). Although impacts to canal waters are less, these alternative variants impact a larger area of wetlands compared to the Preferred Alternative.

Alternative 5A—Combined West Bench

Alternative 5A would impact 0.6 ha of jurisdictional wetlands and 1.1 ha of waters of the U.S. (canals). Alternative 5A wetland impacts are similar to wetland impacts associated with the Preferred Alternative. However, local residents impacted by Alternative 5 preferred variant 5B compared to variant 5A.

Compliance with Applicable State Water Quality Standards

The Preferred Alternative will be in compliance with state water quality standards providing the following permits are issued:

1. **A Montana Stream Protection Act** (SPA 124) **Authorization** must be issued by MDFWP. The purpose of the authorization is to preserve Montana's fish and wildlife resources in their natural existing state. MFWP will examine the impacts associated with the Preferred Alternative and determine if the alternative can be approved. Approval indicates compliance.
2. **Floodplain Development Permits** must be issued by the Floodplain Administrators of Yellowstone and Carbon counties under the Montana Floodplain and Floodway Management Act. The Act seeks to limit the expenditure of public tax dollars for emergency operations and disaster relief that arise from floodplain and floodway area development that may result in damage or hazards to life. Specific engineering information is required to evaluate the project and issue the permit.
3. The Montana Department of Environmental Quality (MDEQ) must issue a **Montana Pollutant Discharge and Elimination System Permit (MPDES Permit**.) The purpose of the permit is to protect water quality and aquatic resources by minimizing soil erosion and sedimentation. The permit satisfies Section 402 of the Clean Water Act (CWA). Stormwater pollution prevention plans must be submitted for review by EPA that details specific BMPs to be used to protect surface waters. Issuance of the permit and establishment of additional conditions imposed by the permit constitutes compliance.
4. The Montana Department of Environmental Quality (MDEQ) must issue a **Section 401 of the CWA Permit** to ensure that discharge into waters of the U.S. meet water quality standards. The 401 permit must be obtained prior to other federal permits or licenses, including the Section 404 Permit. This law is designed to maintain the chemical, biological, and physical integrity of surface waters. Issuance of the permit constitutes compliance.

As long as acceptable design and construction practices are followed, acquisition of these permits should be routine.

This project is in compliance with the following federal water quality standards:

1. **Clean Water Act as Amended (Federal Water Pollution Control Act), 33 USC 1251 et seq:** The COE and MDEQ will be contacted when we are ready to proceed with the Section 404 permit. Otherwise, this project is in compliance.
2. **Fish and Wildlife Coordination Act, as Amended, 16 USC 661, et seq:** MFWP and FWS will be contacted and their comments incorporated into the project. This project is in compliance.
3. **Floodplain Management (Executive Order 11988):** The project will be designed to avoid significant impacts to floodplains. This project is in compliance.
4. **Protection of Wetlands (Executive Order 11990):** This project will involve work in wetlands and waters of the U. S. The project will first avoid, then minimize, and then provide compensatory mitigation for all wetland and waters impacts that cannot be avoided. The project is in compliance.

The following water quality standards are not considered to be applicable to this project:

1. **Rivers and Harbors Act, 33 USC, 401, et seq:** There would be no structures placed in navigable waters, so this Act does not apply.
2. **Federal Water Project Recreation Act, as Amended, 16 USC, 460-1(12) et seq:** This is not considered a water recreation project, so this Act does not apply.
3. **Estuary Protection Act, 16 USC, 1221, et seq:** This project does not involve an estuary, so this Act does not apply.
4. **Coastal Zone Management Act, as Amended, 16 USC, 1531, et seq:** This project is not in a coastal zone, therefore this Act does not apply.
5. **Marine Protection, Research, and Sanctuaries Act, 33 USC, 1401, et seq:** This project does not discharge material into the ocean, therefore this Act does not apply.
6. **Watershed Protection and Flood Prevention Act, 16 USC, 1101, et seq:** This project would not construct a dam in an upstream watershed, therefore this Act does not apply.

Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the CWA

Section 307 of the CWA imposes discharge limitations on discharge of aldrin/dieldrin, several DDT compounds, endrin, toxaphene, benzidine, and polychlorinated biphenyls (PCB) into surface water. This project will not discharge any of these compounds and therefore is in compliance.

Compliance with Endangered Species Act of 1973, As Amended

This project will have **"no effect"** on any federally listed threatened or endangered species. It is in compliance with this Act. The FWS will be consulted as part of this project.

Compliance with Specific Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

This project does not involve oceans and therefore this Act is not applicable.

Evaluation of Extent of Degradation of the Waters of the United States

The following are conclusions from previous sections of this evaluation:

Significant Adverse Effects on Human Health and Welfare

This project will not significantly affect private or municipal water supplies, recreational or commercial fisheries, aesthetics, or water-borne diseases. Temporary water degradation may occur because of sedimentation during construction, but no long-term effects will result from implementation.

Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependant on Aquatic Ecosystems

Wildlife habitat, benthos, invertebrates, vertebrates, photosynthesis, filter feeders, and sight feeders will be temporarily affected during project construction. There would be a slight long-term loss of habitat where the fill extends above the water.

Significant Adverse Effects on the Aquatic Ecosystem, Ecosystem Diversity, Productivity, and Stability

This project will not produce significant adverse effects on the diversity, productivity, or stability of aquatic ecosystems.

Significant Adverse Effects on Recreational, Aesthetic, and Economic Values

There will be no significant adverse effect on recreational, aesthetic, or economic value of waters of the U.S. from implementation of this project.

Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

Measures to minimize effects have been discussed previously in this analysis. Sedimentation is likely the most significant effect of the proposed project's discharge. Implementation of a Highway Construction Standard Erosion Control Work Plan will be used to ensure establishment and implementation of BMPs to protect surface water. Specifically:

1. The project will conform to the natural aquatic ecosystem and surrounding terrain to the extent practicable.
2. The amount of land disturbed will be limited and of short duration.
3. Disturbed areas will be revegetated as soon as possible.
4. Stormwater runoff will be controlled through implementation of erosion control features.
5. All erosion control features will be maintained.
6. Construction will be timed to avoid any sensitive periods for aquatic organisms.
7. Impacts to wetlands will be avoided and minimized to the extent practicable prior to considering compensatory mitigation.
8. Wetland functions and values will be perpetuated for the life of the project through compensatory mitigation.

Conclusions

The project is currently evaluating four Build Alternatives (six alignment options). A Preferred Alternative, 5B, has been proposed in the DEIS.

The proposed project will not violate Section 307 of the CWA, the Endangered Species Act, or the state water quality standard. The Biological Resources Report will serve as the Biological Assessment for this project.

Approximately 0.6 ha of wetlands and 1.2 ha of waters of the U.S. (canals) will be filled through discharges by the project. Final discharge areas will be determined during final design. Avoidance and minimization of impacts has been implemented and will be ongoing as the final design continues. This evaluation and the DEIS detail the avoidance and

minimization measures that have been taken or will be taken. Appropriate compensatory mitigation sites have been identified.

On the basis of the 404(b)(1) guidelines, the proposed discharge sites for the direct discharge of fill material are specified as complying with the requirements and the guidelines, with the inclusion of appropriate and practicable conditions to minimize pollution or adverse effects on the aquatic ecosystem.

References

Berglund, J. 1999. MDT: Montana Wetland Assessment Method. Montana Department of Transportation and Morrison-Maierle, Inc. 18 p. plus appendices.

CH2M HILL. 2003. Biological Resources Report. US 212 Reconstruction, Rockvale to Laurel, Environmental Impact Statement. NH 4-1(21)42, Control No. 4070. Boise, Idaho.

COE. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual. Waterways Experiment Station, Vicksburg, MS.

Appendix F: Glossary

GLOSSARY

Term	Definition
A	
Access	A legal right to enter the through lanes of a highway facility from abutting property or public streets (MDT, 1992).
Access control	The condition in which the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is fully or partially controlled by public authority. Access control limits the conflicts with through traffic by eliminating or limiting the location and number of: 1) private approaches entering directly onto the through traffic lanes or a highway, and 2) public street or road intersections with the highway (MDT, 1992).
Access management	The process of managing the points of access to highway facilities through the use of access control or a permitting system (MDT, 1992).
Aesthetic quality	A perception of the beauty of a natural or cultural landscape.
Affected environment	Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.
Air quality	Measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.
Anadromous	Used to describe fish (such as salmon and steelhead) that return from the sea to the rivers where they were born in order to breed.
Annual	A plant that flowers, produces seed, and dies in one growing season.
Approach	The roadway used for movement of vehicles across the highway right-of-way between the outside edge of the shoulder of the highway and the right-of-way (MDT, 1992).
Aquifer	A geological formation or structure that stores and/or transmits water, such as to wells and springs.
Archaeologist	A scientist who studies past human life through material remains.

Term	Definition
B	
Benchland	A long, narrow, relatively level terrace or platform breaking the continuity of a slope. In canyons, these landforms are often the result of old stream terraces above the present elevation.
Beneficial uses	One of several uses of streams and lakes that may include drinking, fish habitat, and recreation. This phrase has a specific technical connotation because the federal Clean Water Act requires states to adopt standards and procedures that protect designated beneficial uses of public waters.
Best Management Practice	A practice or combination of practices determined by a state or an agency to be the most effective and practical means (technological, economic, and institutional) of controlling point and nonpoint source pollutants at levels compatible with environmental quality.
Biennial	A term used to describe a plant that lives for 2 years, and produces flowers and fruit in the second year.
Biodiversity	The range of organisms present in a given ecological community or system, which can be measured by the numbers and types of different species, or the genetic variations within and among species.
Biota	The types of plant and animal life found in specific regions at specific times.
Broadleaf	A term used to describe trees that have wide leaves rather than leaves that are thin like (pine) needles.
Buffer	A vegetation strip or management zone of varying size, shape, and character maintained along a stream, lake, road, recreation site, or different vegetation zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice.
C	
Candidate species	A state and federal designation. State candidate species are those that will be reviewed for possible listing as endangered, threatened, or sensitive. Species for which there is substantial information to support listing the species as threatened or endangered; listing proposals are either being prepared or are delayed by work on higher priority species.

Term	Definition
Colonizer	A plant that is established or becomes established in a biological colony in a new ecosystem.
Conifer	Any tree that has thin leaves (needles) and produces cones. Many types are evergreen.
Consumptive use	That part of water withdrawn that is evaporated, transpired by plants, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment. Also referred to as water consumed.
Contiguous	Touching or connected throughout in an unbroken sequence.
Critical habitat	**State:** Habitats of threatened or endangered species as designated by various state forest practices boards. **Federal:** Areas designated under the federal Endangered Species Act that meet these criteria: 1. Areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection. 2. Areas outside the geographic area occupied by a listed species, when it is determined that such areas are essential for the conservation of the species.
Cultural resources	Sites, structures, landscapes, and objects of some importance to a culture or community for scientific, traditional, religious, or other reasons.
Cumulative impact	The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions—regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).
D	
Deceleration lanes	An auxiliary lane adjoining the through traveled way for speed change.
Depressed median	A median that is lower in elevation than the traveled way and designed to carry a certain portion of the roadway runoff.

Term	Definition
Discharge	The volume of water that passes a given location within a given period of time. Usually expressed in cubic feet per second (cfs).
Diversity	See *Biodiversity.*
Driveway	A private road giving access to land abutting the highway via an approach (MDT, 1992).
E	
Ecosystem	The complex of a community of organisms and its environment functioning as an ecological unit.
Endangered species	Any species in danger of extinction throughout all or a significant portion of its range.
Endemic	Plants or animals that are native to a particular region or country.
Environment	The surrounding conditions, influences, or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.
Environmental Impact Statement	A formal public document prepared to analyze the impacts on the environment of the proposed project or action and released for comment and review. An EIS must meet the requirements of NEPA, Council on Environmental Quality guidelines, and directives of the agency responsible for the proposed project or action.
Ephemeral	A plant, insect, stream, drainage or other feature that lasts for only a short period of time.
Exotic	In ecology, a term that describes the introduction of a species from another place or region.
Extirpate	To destroy completely; wipe out.
F	
Fallow	Allowing cropland, either tilled or untilled, to lie idle during the whole or greater portion of the growing season.
Farm/Field approach	An approach to be used only for access to agricultural lands (farm fields) and no other purpose (MDT, 1992).
Fauna	The wildlife or animals of a specified region or time.

Term	Definition
Federally listed	Species formally listed as a threatened or endangered species under the ESA. Designations are made by the FWS or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS).
Floodplain	The lowland that borders a stream or river, usually dry but subject to flooding.
Flora	Plant life, especially all the plants found in a particular country, region, or time regarded as a group. Also, a systematic set of descriptions of all the plants of a particular place or time.
Forage	Food for animals. In this document, term applies to both availability of plant material for wildlife and crops grown to feed horses, cattle, and other livestock.
Free-right turn	An auxiliary lane that adjoins the traveled way of two separate roadways and enables a right turn to be made without a stop.
Freshwater	Water that contains less than 1,000 milligrams per liter (mg/L) of dissolved solids; generally, more than 500 mg/L of dissolved solids is undesirable for drinking and many industrial uses.
G	
Geographic information system (GIS)	A computer system that stores and manipulates spatial data, and can produce a variety of maps and analyses. GIS is used to set landscape-level planning objectives. GIS can do the following: 1. Assign information and attributes to polygons and lines, which represent relationships on the ground. 2. Update and retrieve inventory, mapping, and statistical information.
Grassland	An area covered with grass and grass-like vegetation.
Grade separation	A crossing of two highways, or a highway and a railroad, at different levels.

Term	Definition
H	
Habitat	The region where a plant or animal naturally grows or lives. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and home range.
Harm	Habitat modification or degradation that injures or kills wildlife by significantly impairing essential behavioral patterns that include breeding, feeding, or sheltering.
Holistic	An approach to ecology emphasizing the importance of the whole and the interdependence of its parts.
Hydrologic cycle	The sequence of conditions through which water passes from vapor in the atmosphere through precipitation upon land or water surfaces, and ultimately, back into the atmosphere as a result of evaporation and transpiration.
Hydrology	The science that studies the properties, distribution, and circulation of natural surface water and groundwater.
Hyporheic zone	The groundwater under a stream channel or floodplain that contributes water to the stream. Also contributes biologically, sometimes supporting an extensive biotic community.
I	
Impact	A modification in the status of the environment brought about by a Preferred Alternative.
Infiltration	To cause (as a liquid) to permeate something by penetrating its pores or interstices.
Insoluble	Incapable of being dissolved in a liquid.
Interchange	A system of interconnecting roadways in conjunction with one or more grade separations, providing for the movement of traffic between two or more roadways on different levels.
Intersection	The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movements in that area.

Term	Definition
L	
Landform	A term used to describe the many types of land surfaces that exist as a result of geologic activity and weathering (for example, plateaus, mountains, plains, and valleys).
Leaching	To dissolve out soluble constituents from soil by percolation.
Left-turn lane	An auxiliary lane that adjoins the traveled way and is used for turning.
M	
Median	The portion of a divided highway separating the two traveled ways for traffic in opposite directions. The median width includes both inside shoulders.
Mitigate	To alleviate, reduce, or render less intense or severe.
Mitigation	Action taken to avoid, reduce the severity of, or eliminate an adverse impact.
N	
National Environmental Policy Act (NEPA) of 1969	Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision-making processes.
National Marine Fisheries Service (NMFS)	The federal agency that is the listing authority for marine mammals and anadromous fish under the ESA.
National Register of Historic Places (NRHP)	A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance, established by the Historic Preservation Act of 1966 and maintained by the National Park Service.
Native vegetation	Vegetation originating in a certain region or country.
Naturalization	To cause a plant or animal from another region to become established in a new environment or to adapt successfully to new environmental conditions.
Non-native	A plant that is not growing naturally in a particular place, and that has been introduced by an outside force or agent.

Term	Definition
Noxious weeds	Plants that may cause harm to collectors, or invasive exotics or parasites and their host plants that may harm the ecosystem or agriculture of an area.
P	
Paleontology	A science dealing with the life of past geological periods as known from fossil remains.
Particulate matter	Minute, separate particles, such as dust or other air pollutants.
Perennial	Lasting or active through the whole year. May refer to rivers, streams, or plants.
Permeability	The measure of the ease with which a fluid can diffuse through particular porous materials.
Policy	A guiding principle upon which is based a specific decision or set of decisions.
Predators	Any organism that exists by preying upon other organisms.
Prime farmland	Farmland that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oil seed crops and is also available for these uses. The land could be cropland, pastureland, rangeland, forest land, or other land—but not urban built-up land or water. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed—including water management—according to acceptable farming methods.
Primitive	An area that is not developed; a pristine natural area.
Programmatic	Of, having, advocating, or following a plan, policy, or program, as in a *Programmatic EIS*.
Public approach	An entrance to and/or from a highway, street, road, alley, etc., or dedicated public right-of-way (MDT, 1992).
R	
Raised median	A median that contains a raised portion or island within its limits.
Range	A large, open area of land over which livestock can wander and graze.

Term	Definition
Raptor	A bird of prey.
Rare	A plant or animal restricted in distribution. May be locally abundant in a limited area or few in number over a wide area.
Reclamation	Returning disturbed lands to a form and productivity that will be ecologically balanced.
Redd	A spawning nest constructed by a fish. A depression excavated in gravels where eggs are deposited.
Region	A large tract of land generally recognized as having similar character types and physiographic types.
Residual	Relating to the material left after weathering of a rock and removal of its soluble constituents.
Revegetation	The reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as reseeding.
Rhizomes	A thick underground horizontal stem that produces roots and has shoots that develop into new plants.
Right-of-way	Strip of land acquired by legal means, over which utility corridors and access roads pass.
Riparian	Of, or pertaining to, the area surrounding the banks of a stream that supports vegetation dependent upon high levels of water.
Riparian area	Areas of land directly influenced by water or that influence water. Riparian areas usually have visible vegetative or physical characteristics reflecting the influence of water. Riversides and lake borders are typical riparian areas.
Road prism	This is the horizontal template of a road that includes the road running surface, cut slope, fill slope, and ditch.
Rumble strip	Cuts in the pavement of a roadway shoulder that when driven over, provide tire noise that is intended to alert the driver.

Term	Definition
S	
Sacred site	Any specific, discrete, narrowly delineated location on federal land identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the Tribe or appropriately authoritative representative has informed the agency of the existence of such a site.
Salmonid	Fish species belonging to the family Salmonidae, including trout, steelhead, salmon, char, and whitefish species.
Scoping	The process where the public provides comments to assist MDT in determining the range of proposed actions, alternatives, and impacts to be discussed in an EIS; includes public meetings and other outreach activities.
Secondary impact	An impact that does not directly result from implementation of a build alternative, but rather indirectly from project implementation. For example, construction of a new business along the route of a new highway.
Sediment	A generic term used loosely to describe silt or sand-sized particles that may settle out of flowing water onto the bottom of streams and rivers, which may cover gravels otherwise used by salmonid fish for spawning and rearing young. Sediments may also inhibit oxygen uptake by fish eggs and therefore reduce reproductive success.
Sediment/Sedimentary	Solid fragmental material, either mineral or organic, that is transported or deposited by air, water, gravity, or ice.
Semi-arid	A climate or region characterized by little yearly rainfall and by the growth of a number of short grasses and shrubs.
Sensitive species	Species whose populations are small and widely dispersed or restricted to a few localities. Species that are listed or candidates for listing by the state or federal government.
Sensitivity	The state of being readily affected by the actions of external influence.

Term	Definition
Shoulder	The portion of the roadway contiguous to the traveled way for the accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses. On sections with curb and gutter, the shoulder extends to the face of the curb.
Sight distance	The sum of the distance traveled during a driver's perception/reaction or brake reaction time and the distance traveled while braking to a stop.
Site	In archaeology, any locale showing evidence of human activity.
Socioeconomic	Of or involving both social and economic factors.
Sound	Quantified using a logarithmic unit called a decibel and is typically modified (weighted) to account for human perception of sound. The weighted unit is shown as dBA, which most closely approximates human hearing.
Species	A group of individuals of common ancestry that closely resemble each other structurally and physiologically, and in nature interbreed to produce fertile offspring.
Statewide-important farmland	Farmland that is nearly Prime and that economically produces high yields of crops when treated and managed according to acceptable farming methods.
Steady-state noise level (L_{eq})	Used by FHWA and MDT to evaluate noise impact of transportation projects. The steady-state noise level evens out fluctuating sound over a stated time period, typically 1 hour, and is shown as $L_{eq}(h)$.
Subspecies	Any natural subdivision of a species that exhibits small, but persistent morphological variations from other subdivisions of the same species living in different geographical regions or times.
Superelevation	The amount of cross slope or "bank" provided on a horizontal curve to help counterbalance the outward pull of a vehicle traversing the curve.
Synergistic relationship	The simultaneous action of separate physical factors that when combined have a greater total effect than the sum of their individual effects.
T	
Take	To kill or capture a species covered by the Endangered Species Act.

Term	Definition
Tap-root	A prominent and often bulky root that extends downward below the stem of some plants and has fine lateral roots. It often serves as a food storage organ.
Threatened species	Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.
Topography	The relative positions and elevations of surface features of an area.
Traditional cultural property	A term referring to a tangible site, district, structure, building, or object with defensible boundaries that is important to a contemporary human community and has been for 50 years or more, that has significance under one or more criteria of the National Register of Historic Places, and with integrity of location, design, setting, materials, workmanship, feeling, and association in the perspective of those who value the place.
Transpiration	The process by which water that is absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface, such as leaf pores.
Traveled way	The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.
Tributary	A stream or river that flows into a larger stream or river.
Turbidity	The amount of solid particles that are suspended in water and that cause light rays shining through the water to scatter. Turbidity makes the water cloudy or even opaque in extreme cases.
U	
Upland	Land or an area of land lying above the level where water flows or where flooding occurs. Land that is generally dry, as opposed to lowland, meadow, marsh, swamp, and the like. See *riparian* for comparison.
U.S. Fish and Wildlife Service (FWS)	The federal agency that is the listing authority for species other than marine mammals and anadromous fish under the ESA.
V	
Vegetation community	Species of plants that commonly live together in the same region or ecotone.

Term	Definition
Viable population	A population of sufficient size and distribution to be able to persist for a long period of time in the face of demographic variations, random events that influence the genetic composition of the population, and fluctuations in environmental conditions, including catastrophic events.
W	
Water Quality Limited Stream	A stream listed under the Clean Water Act as not fully supporting designated beneficial uses. It is for these water bodies that Total Maximum Daily Loads are required to be developed.
Watershed	The catchment area of land draining into a river, river system, or body of water; the drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake.
Wetlands	Lands or areas exhibiting hydric soils, saturated or inundated soil during some portion of the plant growing season, and plant species tolerant of such conditions (includes swamps, marshes, and bogs).

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Appendix G: Coordination Letters

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

RECEIVED
MAR 30 2001
CH2M HILL
BOISE

Ref: 8MO

March 27, 2001

Mr. Denny Mengel, Ph.D, CPSS,
Senior Ecologist
CH2M Hill
700 Clearwater Lane
Boise, Idaho 83712-7708

Re: Rockvale-Laurel EIS

Dear Mr. Mengel:

This is in response to your letter dated March 19,2001 requesting EPA to be a cooperating agency with the Montana Dept. of Transportation (MDOT) during the preparation of an Environmental Impact Statement (EIS) for the Rockvale to Laurel reconstruction project on US Highway 212.

The EPA is interested in providing meaningful and early input on environmental issues of concern for this project. We are particularly interested in helping to ensure that proper river, wetland, and surface and ground water quality, hazardous waste issues, and air quality protection considerations are incorporated into the Rockvale-Laurel project. The Agency, however, has resource limitations and other program commitments which will have to limit the degree and extent of EPA's participation in the EIS preparation process. These resource constraints and other program commitments make it difficult for me to agree to full fledged participation as a cooperating agency during the preparation of the EIS (see 40 CFR 1501.6(c)).

EPA will be reviewing and providing comment on the draft and final EIS's for this project in accordance with Section 309 of the Clean Air Act. The EPA provided EIS scoping comments for this project in August 2000. Mr. Steve Potts, EPA Montana NEPA Coordinator, attended the November 1, 2000 Rockvale-Laurel project scoping meeting and field trip, and will participate in the EIS preparation process and provide input and comment as resources, workload, and schedules allow. We will try to review and comment upon such preliminary EIS documents as much as our workload and schedules allow. We encourage you to send us the rough draft DEIS.

I hope you understand our resource constraints. If you have any questions or would like to discuss this matter further please feel free to call me at (406) 441-1123 ext. 238. Thank you for your consideration.

Printed on Recycled Paper

Sincerely,

John F. Wardell
Director
Montana Office

cc: Cynthia Cody, EPA, 8EPR-EP, Denver
Terry Yarger, MDOT, Helena
Dale Paulson, FHWA, Helena

A CENTURY OF CONSERVATION
1901 2001
Montana Fish, Wildlife & Parks

RECEIVED
APR 0 2 2001
CH2M HILL
BOISE

2300 Lake Elmo Drive
Billings MT 59105
Ref: hn026-01.doc
March 28, 2001

Mr. Denny Mengel, Ph. D., CPSS
CH2MHILL
700 Clearwater Lane
Boise, ID 83712-7708

Dear Mr. Mengel:

This is in response to your letter of March 19 requesting the Montana Fish, Wildlife & Parks (MFWP) be a member of the Interdisciplinary Team (IDT) for the Rockvale to Laurel, US Highway 212 re-construction project.

MFWP is currently signed on as a Cooperating Agency. As such, we will apply our expertise in fish, wildlife and recreational resource management in our review of the Rough Draft EIS. Our staff is also available on an Ad Hoc basis to provide specific input on issues and concerns related to those resource areas.

We can not commit, however, to be a member of the IDT because of the time commitment. We have a very small staff and a very full workload. We do not have authority to add staff to take on these worthy, but time consuming, activities. As I said before, we can and will provide reviews of pertinent parts of the process that deal with resources within our areas of expertise. Questions and requests for comment should be directed as follows: Fisheries- Jim Darling; Wildlife- Charlie Eustace; and Parks/Recreation – Doug Habermann. These gentlemen can be reached at our Billings office, or telephone 247-2940.

Thanks for the invitation.

Sincerely,

Harvey E. Nyberg
Regional Supervisor

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

RECEIVED
APR 0 2 2001
CH2M HILL
BOISE

REPLY TO
ATTENTION OF

March 23, 2001

US Army Corps of Engineers
Helena Regulatory Office
301 South Park Avenue, Drawer 10014
Helena, Montana 59626-0014
Phone: (406) 441-1375
Fax: (406) 441-1375

RE: Rockvale to Laurel, MDT Control No. 4070
Corps File No. 200090730

Mr. Denny Mengel
CH2M HILL
P.O. Box 8748
Boise, Idaho 83707-2748

Dear Mr. Mengel,

The Corps of Engineers will participate as a cooperating agency on the Interdisciplinary Team for the Rockvale to Laurel US Highway 212 reconstruction project. Mr. Todd Tillinger will represent the Corps, and should be contacted directly concerning any future meetings or review of plans and studies. Mr. Tillinger may be contacted at the phone number and address listed above.

Sincerely,

Allan Steinle

Allan Steinle
State Program Manager

CF:
Samuel Naseem, MDT
Joel Marshik, MDT

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
MONTANA FIELD OFFICE
100 N. PARK, SUITE 320
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

M.17 FHWA Rockvale - Laurel

January 8, 2001

Denny Mengel
CH2M HILL
700 Clearwater Lane
PO Box 8748
Boise, Idaho 83707-2748

Dear Dr. Mengel:

This is in response to your letter dated December 21, 2000, in which you requested written comments from the US Fish and Wildlife Service (Service) regarding the Montana Department of Transportation's proposal to reconstruct US Highway 212 from Rockvale to Laurel in Yellowstone and Carbon counties, Montana (NH 4-1(21)42; Control No. 4070). The Service received your letter on December 28. We appreciate the opportunity to review this project proposal and provide early comments. These comments have been prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and the Endangered Species Act (16 U.S.C. 1531 et. seq.).

Based upon a review of the preliminary routes proposed for this project, it appears the least desirable alignment from a fish and wildlife conservation perspective would be Alternative 4 (East Bench Alternative), which would involve two crossings of the Clarks Fork of the Yellowstone River. While often unavoidable, highway construction within floodplains and riparian areas and across large streams can adversely affect the overall health and function of those systems and the species that utilize them. Alternatives 1 and 2 (Far West Bench and Near West Bench alternatives, respectively) occur primarily in upland areas and appear much less likely to negatively affect resources for which the Service has jurisdiction.

Bald eagles (*Haliaeetus leucocephalus*) may occur in the vicinity of this project as nesting pairs, seasonal migrants or non-nesting residents. While at this time we do not foresee any substantive issues with this project in relation to bald eagles, any power lines in the vicinity, if not properly constructed, could pose electrocution hazards for this species. To conserve eagles, and other large raptors protected by Federal law, we urge that any power lines that need to be modified or reconstructed as a result of this project be raptor-proofed following criteria and techniques outlined in, "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996." A copy may be obtained from: Jim Fitzpatrick, Raptor Research Foundation, Carpenter Nature Center, 12805 St. Croix Trail South, Hastings, MN 55033.

Prairie dog (*Cynomys* spp.) towns are considered potential habitat for black-footed ferrets

(*Mustela nigripes*). Considering the location of the proposed project, the potential for encountering prairie dogs appears low. However, if prairie dog towns are found to occur within the project rights-of-way, surveys for black-footed ferrets may need to be conducted and survey reports submitted to this office for review and concurrence within one year prior to any disturbance to the towns. Please contact us for guidelines for conducting ferret surveys if you determine that prairie dog towns or ferrets may be affected by this proposed project.

It appears likely that this proposed project may impact areas that are jurisdictional wetlands. If so, Corps of Engineers (Corps) Section 404 permits may eventually be required. In that event, depending on permit type and other factors, the Service may be required to review permit applications and will recommend any protection or mitigation measures to the Corps as may appear reasonable and prudent based on the information available at that time. Regardless, it would be prudent for the proposed alternatives to be designed such that they avoid and minimize wetland areas to the greatest extent possible.

The Service appreciates your efforts to incorporate fish and wildlife resource concerns, including threatened and endangered species, into your project planning. If you have questions regarding this letter, please contact Mr. Scott Jackson, of my staff, at (406)449-5225, ext. 201.

Sincerely,

R. Mark Wilson

R. Mark Wilson
Field Supervisor

Copy to: FWS-ES, Billings Suboffice

United States Department of the Interior

FISH AND WILDLIFE SERVICE
MONTANA FIELD OFFICE
100 N. PARK, SUITE 320
HELENA, MONTANA 59601
PHONE (406) 449-5225, FAX (406) 449-5339

M.17 FHWA Rockvale to Laurel

December 15, 2000

Terry Yarger
Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena, Montana 59620-1001

Dear Mr. Yarger:

This responds to your letter dated October 11, regarding the proposal by the Montana Department of Transportation (Department) to reconstruct US Highway 212 from Rockvale to Laurel in Yellowstone and Carbon counties, Montana (NH 4-1(21)42; Control No. 4070). Your letter requested that the US Fish and Wildlife Service (Service) be a Cooperating Agency with regards to this project. The Service received your letter on October 13.

The Service agrees to be a Cooperating Agency for this project. As such, the Service will review and respond to documents required for compliance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.).

The Service attended a scoping meeting for this project in Billings on November 1 and provided comments relative to environmental concerns associated with the Department's proposed route alternatives. In summary, it appeared at that time that the alternatives that avoided crossing the Clarks Fork of the Yellowstone or its floodplain were the least damaging to resources for which the Service has jurisdiction.

If you have questions regarding this letter, please contact Mr. Scott Jackson, of my staff, at (406)449-5225, ext. 201.

Sincerely,

R. Mark Wilson

R. Mark Wilson
Field Supervisor

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CH2M HILL
700 Clearwater Lane
Boise, ID
83712-7708
P.O. Box 8748
Boise, ID
83707-2748
Tel 208.345.5310
Fax 208.345.5315

CH2MHILL

March 19, 2001
MSPhail

Mr. Ray McFail
U.S. Natural Resources Conservation Service
U.S. Department of Agriculture
606 W. Front
Joliet, MT 59041

Subject: NH 4-1 (21) 42
Rockvale to Laurel
Control No. 4070

Dear Ray:

This letter is to request, on behalf of the Montana Department of Transportation (MDT), that the U.S. Natural Resources Conservation Service (NRCS) be a member of the Interdisciplinary (ID) Team for the Rockvale to Laurel, US Highway 212 re-construction project. We have previously requested (September 19 letter attached) that your agency also be a Cooperating Agency on this proposed project in accordance with the U.S. Department of Transportation Federal Highway Administration's regulations under the *National Environmental Policy Act* (*NEPA*, see 23 CFR 771.111(d)). The NRCS is regarded as having jurisdiction by law relative to your administration of the FPPA.

A written response to this Cooperating Agency and ID Team request is needed for the environmental documentation on this proposed project. This proposed project is now scheduled to be "Ready" for a review of the proposed project's plans, specifications, and estimates by August 1, 2003. MDT will provide a copy of the ROUGH DRAFT Preliminary Environmental Impact Statement on this proposed project for review by the NRCS as a Cooperating Agency. Your responsibilities as an ID Team member include participation in ID Team meetings and activities, review biological resources workplans, and provide review on the design, execution, and analysis of biological resource studies. Please provide your written response to be a cooperating agency by March 30, 2001.

Sincerely,

CH2M HILL

Denny Mengel

Denny Mengel, Ph.D., CPSS
Senior Ecologist

I'm writing to respond to your letter. Please consider me on behalf of the Natural Resources Conservation Service as the cooperating agency to be a participant in the Rockvale to Laurel, US Highway-212 reconstruction project.

T. Ray McPhail
District Conservationist
NRCS

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Mengel, Denny/BOI

From: Heckenberger, Brian [bheckenberger@state.mt.us]
Sent: April 02, 2001 3:18 PM
To: Mengel, Denny/BOI
Cc: Reid, Tom; Yarger, Terry
Subject: CH2MHill 3/19/01 letter for MDT Rockvale to Laurel Project

Dear Mr. Mengel:

To summarize our April 2, 2001 discussion, this E-Mail is in response to a March 19, 2001 letter from yourself to DEQ's Tom Reid, Supervisor of the Water Quality Discharge Permits Section. Pertaining to the request for this Section's storm water discharge input into the planning, scoping, and EIS process for the proposed MDT Rockvale to Laurel project, the Section's Storm Water Program typically is involved with such projects through the submittal of a required application for authorization under the DEQ's "General Discharge Permit for Storm Water Associated with Construction Activity" (this General Permit has its own MEPA Environmental Assessment which typically pertains to authorizations issued under the General Permit). Information concerning construction activity storm water discharge permits, applications (including forms), and requirements are available on the DEQ website at http://www.deq.state.mt.us/wqinfo/5-3-1-6-12.htm <http://www.deq.state.mt.us/wqinfo/5-3-1-6-12.htm> . Documents on this website should assist MDT or their consultant in determining whether General Permit coverage is required, and how to go about completing and submitting the application package. Obtaining permit coverage, if necessary, is our primary comment with respect to any planning or potential environmental implications associated with this project at this time. Based on the submittal of required information in the application package, the DEQ may best assess the environmental implications and controls with respect to any regulated storm water discharges. The Storm Water Program's resources are set up largely as a permitting shop whereby we process large numbers of applications in a streamlined and relatively quick fashion. Regrettably, the Program has little available time to devote to project-specific planning activities prior to the submittal of the application. Also, construction storm water permitting requirements are undergoing changes in the next year, likely resulting in a more streamlined process due to a significant increase in workload. Please call me at (406) 444-5310 if you have any further questions.

Brian Heckenberger
Storm Water Program Coordinator
Water Quality Discharge Permits Section
Water Protection Bureau
Permitting and Compliance Division
Montana Department of Environmental Quality

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Appendix H: Section 106 Determination of Effect

serving you with pride

Montana Department of Transportation
Environmental Services Bureau
2701 Prospect Avenue PO Box 201001
Helena, MT 59620-1001

TELEPHONE : 406-444-7228 FAX: 406-444-7245

FAX TRANSMISSION

TO: JONATHAN MATHEWS

OF: CH2M Hill

FAX #: 208-345-5315

FROM: Jon Axline TELEPHONE: 406-444-6258

DATE: 8/11/03

SUBJECT: Rockvale - LAUREL

MESSAGE:

S:Admin:Fax Cover

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

David A. Galt, Director
Judy Martz, Governor

2003050602

RECEIVED
MAY 09 2003
ENVIRONMENTAL

May 5, 2003

STAN
MDT
Rockvale-Laurel
24CB1764
TESTING

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

Subject: NH 4-1(21)43
Rockvale – Laurel
Control No. 4070

Enclosed is the archaeological testing report and CRABS for a tipi ring site (24CB1764). Based on the negative results, we have determined that the site is ineligible for the NRHP. We request your concurrence.

CONCUR
MONTANA SHPO
5/8/2003

If you have any questions, please contact me at 444-6258.

Jon Axline, Historian
Environmental Services

Enclosures

cc: Bruce Barrett, Billings District Administrator
Carl Peil, P.E., Preconstruction Bureau
Gordon Stockstad, Resources Section

20030415'2

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

David A. Galt, Director
Judy Martz, Governor

• Joseph
• MDT
• Rockvale to Laurel
Effect finding

April 14, 2003

Mark Baumler, Ph.D.
State Historic Preservation Office
1410 8th Avenue
P O Box 201202
Helena, MT 59620-1202

RECEIVED
APR 15 2003
BY:

CONCUR
MONTANA SHPO
DATE 4/14/03 SIGNED

Subject: NH 4-1(21)43
Rockvale – Laurel
Control No. 4070

Enclosed is the Determination of Effect for the above project in Carbon and Yellowstone counties. The project is currently being treated under an Environmental Impact Statement. Several alternative alignments have been identified, but Alternative 5B is currently considered the Preferred Alternative. Three historic sites are located within the Area of Potential Effect for that Alternative. They are: the Free Silver Canal (24CB1287), the Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533), and the Nutting Farmstead (24CB1642). We have determined that the proposed project would have **No Effect** to the three historic sites for the reasons specified in the document. We request your concurrence.

An untested archaeological site (24CB1764) is located in proximity to the preferred alternative. Testing was recently conducted on the site to determine its National Register eligibility. The testing report will be forwarded to your office when it becomes available. If the site is NRHP eligible, then we will submit an amended Determination of Effect to your office for review and comment. If there are any changes in the preferred alternative as a result of public comments or other reasons, then we will also amend the Determination of Effect.

If you have any questions, please contact me at 444-6258.

Jon Axline
Jon Axline, Historian
Environmental Services

Enclosure

cc: Bruce Barrett, Billings District Administrator
Carl Peil, P.E., Preconstruction Bureau
Gordon Stockstad, Resources Section

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DETERMINATION OF EFFECT

NH 4-1(21)43
Rockvale - Laurel
Control No. 4070

Introduction

The Montana Department of Transportation (MDT) intends to reconstruct about nine miles of U.S. Highway 310 in Yellowstone and Carbon counties, Montana. The project begins about Milepost 42 at the junction of U. S. Highway 212 and 310 south of the community of Rockvale in Carbon County. It proceeds northeasterly about nine miles to Milepost 53 just south of the City of Laurel in Yellowstone County. The existing roadway was constructed under three projects in 1937, 1949, and 1968. There were safety improvement projects in 1971, 1983 and 2001. The existing roadway's driving surface is 32-feet. Figure 1 shows the project area.

The Rockvale – Laurel project currently includes eight alternative alignments, of which Alternative 5B is the current preferred alternative. It follows the existing alignment from Rockvale north to Milepost 43.7 where it leaves U.S. 310 and turns northwesterly for about one mile and then turns northeast where it joins with Alternative 1 at Farewell Creek Road about 0.8 miles west of the community of Silesia. It follows Alternative one for less than a mile before joining Alternative 5A. It then turns northeasterly for about 7 miles before joining the existing U.S. Highway 310 at about MP 52.5.

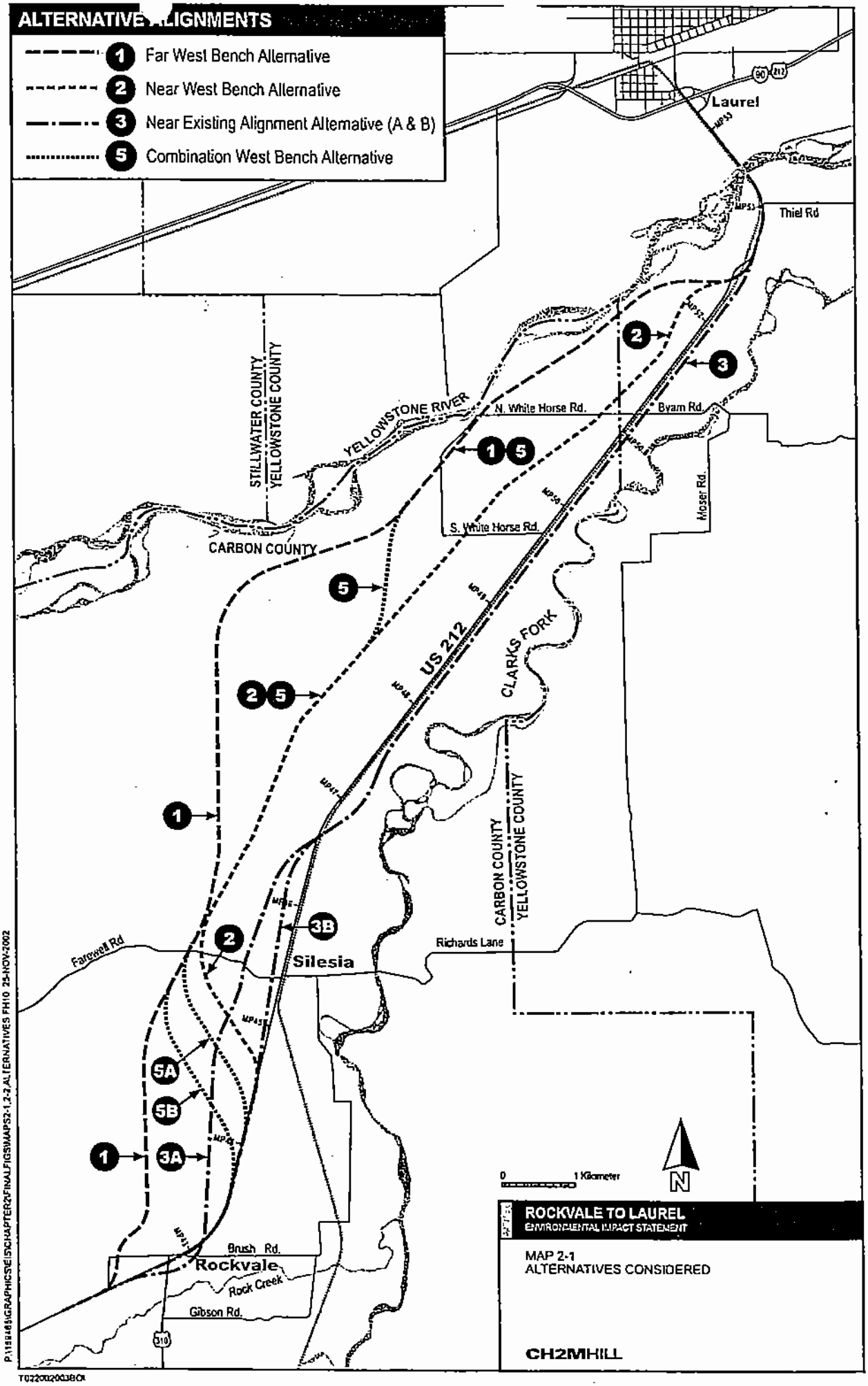
It is the intent of the project to construct and widen the roadway to a 64-foot paved surface, including four 12-foot driving lanes and two 8-foot paved shoulders. Other options being considered for this proposed project include an 64-foot paved surface facility with a 16.4-foot paved median and a 72-foot paved surface with a 28-foot unpaved median. Additional Right-of-Way (R/W) and/or construction permits would be required for this project.

Significant Cultural Resources

Cultural resource surveys of the project area were conducted in 2001 and 2002. The MDT and the Montana State Historic Preservation Office (SHPO) concurred in the National Register of Historic Places (NRHP) eligibility of three historic sites. They are: the Free Silver Canal (24CB1287), the Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533) and the Nutting Farmstead (24CB1642).

The Free Silver Canal was constructed in 1893 and irrigates about 900 acres of farmland in Carbon and Yellowstone counties. Because of its significance to the agricultural development of the area, it is eligible for the NRHP under Criterion A.

The Rocky Fork Branch of the Northern Pacific Railroad was built in 1889 by a consortium of western Montana businessmen interested in developing coal deposits on upper Rock Creek for the use of the railroad. Because of the railroad's significance to the mining and agricultural development of Carbon County and its significance to the development the communities of Red Lodge, Fox, Roberts, Joliet and Boyd, it is eligible for the NRHP under Criterion A.


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combination West Bench Alternative
Laurel
Thiel Rd
STILLWATER COUNTY
YELLOWSTONE COUNTY
YELLOWSTONE RIVER
N. White Horse Rd.
Byam Rd.
Moser Rd.
S. White Horse Rd.
CARBON COUNTY
US 212
CLARKS FORK
Richards Lane
Silesia
Fargeell Rd
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
0 1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
MAP 2-1
ALTERNATIVES CONSIDERED
CH2MHILL

The Nutting Farmstead consists of two residences and eleven outbuildings. The site was first developed in the early 1900s by Oliver Chilcott and later purchased William Nutting. It has been in the Nutting family since 1919. Because of the site's high degree of integrity, it is eligible for the NRHP under Criterion C.

Project Impact

The Rockvale – Laurel project is being handled under an Environmental Impact Statement. At this stage, no preliminary plans are available. Conceptually, however, it is known what the effects of the proposed project would be on the three historic sites. That information is included below.

It is the intent of the proposed Rockvale – Laurel project to construct a crossing of the Free Silver Canal (24CB1287) under preferred Alternative 5B. The crossing would consist of a concrete box culvert that closely matches the existing width of the canal. There would be no change in the alignment of the canal and its existing function would be perpetuated. Either R/W or an easement would be required to construct the crossing.

The proposed new alignment would necessitate the construction of a new roadway overpass over the Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533). The proposed new structure would be located just to the south of the existing railroad overpass located at about Milepost 52.5 on U.S. 310 (it was constructed in the late 1950s). The proposed overpass would have a vertical clearance 23-feet and a horizontal clearance of 25.3-feet. While there would be some R/W or an easement required to place the piers supporting overpass, there would be no change in the alignment of the railroad and its current function would be maintained.

At the Nutting Farmstead (24CB1642) the proposed centerline would be shifted away from the property. The existing edge of pavement is 361-feet from the property, while the centerline is 373-feet from the farmstead. There would be some R/W take from the property, however. The proposed R/W boundary would be 262± feet from the Nutting Farmstead.

Project Effect

There would be **No Effect** to the NRHP-eligible Free Silver Canal (24CB1287) as a result of the proposed MDT project. Under Alternative 5B, the proposed roadway would cross the existing canal. A concrete box culvert would be installed to facilitate the crossing. There would be no change in the alignment of the ditch and its existing use would be perpetuated. There would be no significance diminution of the characteristics that make it eligible for the NRHP. Its significance under Criterion A would be perpetuated as its original function would be maintained. The site would not be neglected, abandoned or bypassed as a result of the proposed project. The setting would not be significantly altered by the construction of the new roadway. The area surrounding the ditch has been slowly encroached upon by residential development expanding south from the City of Laurel.

There would be **No Effect** to the Rocky Fork Branch of the Northern Pacific Railroad (24CB1283/24YL1533) as a result of the proposed project. The existing alignment and function of the railroad would be perpetuated. Some new R/W would be required to accommodate the

substructure of the proposed overpass. The overpass piers would, however, not encroach on the railroad grade or require the removal or relocation of any appurtenances associated with the operation of the line. There would be a change in the setting of the site with the construction of a new overpass. The Rocky Fork's historical significance to the history and development of the Rock Creek Valley and Carbon County would remain intact as the function of the railroad would be maintained after the new overpass is constructed.

There would be **No Effect** to the NRHP-eligible Nutting Farmstead (24CB1642) as a result of the proposed project. The proposed centerline would be shifted away from the property. The proposed pavement edge would be located further away from the site than it is now (361-feet). Although there would be some R/W acquired from the site, the proposed boundary would be 262± feet from the farmstead. There would be no diminishment in the characteristics that make the site eligible for the NRHP as a result of the project. All of the buildings and structures associated with the site would remain intact and untouched by the project. Its current function as a working farmstead would be perpetuated and remain unchanged as a result to the proposed project. There would be no neglect, sale or lease of the property also as a result of the project. Because of the existing and proposed distance of the property from the existing/proposed roadway, there would be no substantial change in the setting of the Nutting Farmstead.

Appendix I: Draft EIS Comments and Responses

Guide for the Reader

Comments on the Draft Environmental Impact Statement (EIS) were grouped into the following categories:

- **Agencies** (pages I-1 through I-41)
  - A1, Department of Defense, Department of the Army; Larry D. Janis, Chief
  - A2, United States Department of the Interior, Office of the Secretary; Robert F. Stewart
  - A3, United States Environmental Protection Agency; John F. Wardell, Director
  - A4, United States Department of Commerce; Christopher W. Harm

- **Environmental Groups** (pages I-42 through I-45)
  - EG1, Montana Wildlife Federation; Ben Lamb
  - EG2, Students Advocating for Valuing the Environment (S.A.V.E.); Alaina Garcia

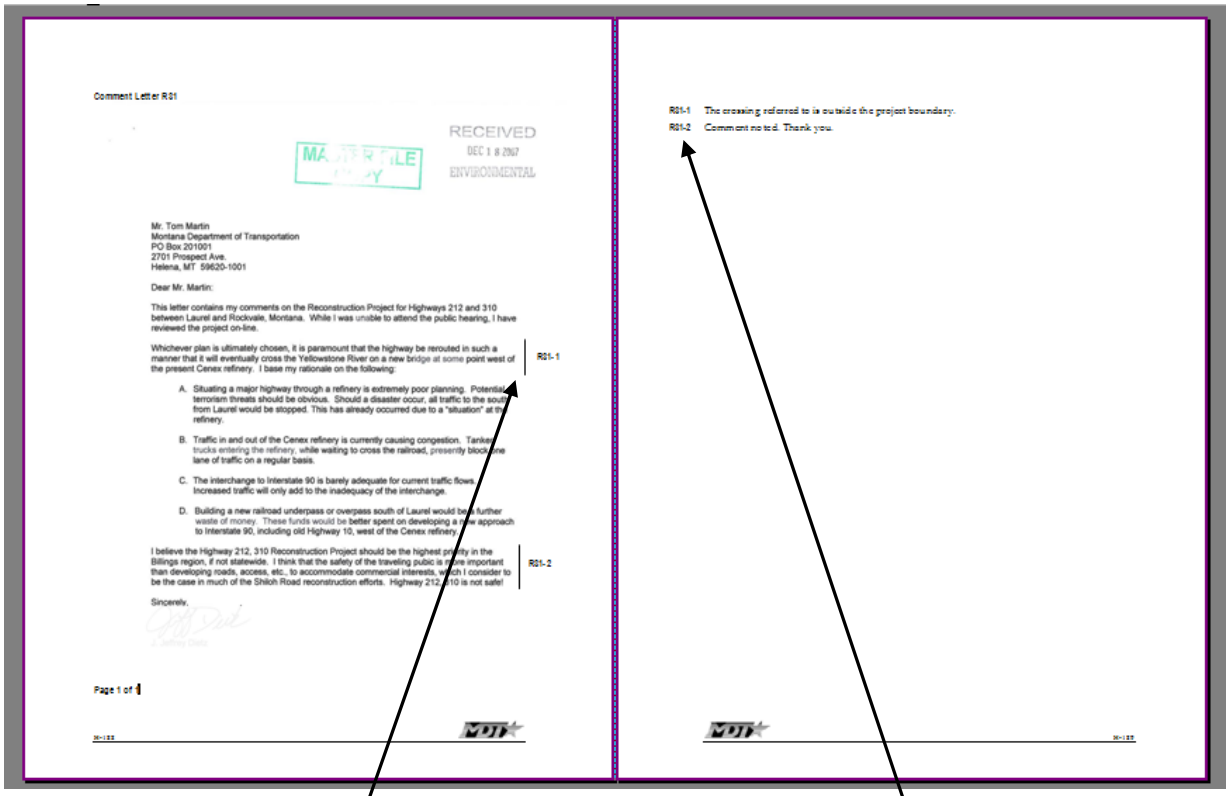
- **Public Hearing** (pages I-46 through I-69)
  - PH, Public Hearing, December 1, 2007

- **Residences** (pages I-70 through I-207)
  - R1, John Grewell
  - R2, Richard and Jena Bell
  - R3, Bruce Pinkerton
  - R4, Floyd Blank
  - R5, Cliff and Debbie Schenk
  - R6, John and Evelyn Fischer
  - R7, Russell and Daryl Jurkovich
  - R8, Tim Blanchard
  - R9, Vern and Sheri Anttila
  - R10, Darin Foote
  - R11, Robert Barnard
  - R12, Michael Kroft
  - R13, Mike and Jolyn Schweitzer
  - R14, Keay Nutting
  - R15, Wayne and Jeryl Schneider
  - R16, Eileen Pinkerton
  - R17, Frank Fitzgerald
  - R18, Dennis Kroft
  - R19, Dennis Kroft
  - R20, Raymond Kramer
  - R21, William Hanna
  - R22, HL Moore
  - R23, Tom McNew
  - R24, Thomas Henry
  - R25, Tim and Laura Button
  - R26, Larry and Marie Hart
  - R27, Rob Lininger
  - R28, Leslie Marty
  - R29, David Klarich

- R30, Susan Howe
- R31, Jeffrey Dietz
- R32, Gary Everson
- R33, Lee R. Scherer
- R34, Richard Koepke
- R35, Irene Shumway

Each letter is numbered. Each comment is numbered and delineated with a vertical line beside the text. Responses were prepared for each comment. In general, the letter will appear on the left side of the appendix and the response to comments will be on the right side across from the letter.

The example graphic below has been provided as a guide to the reader. It shows how the comment letters and the responses to comments are laid out in Appendix I.



Acronyms and Abbreviations

AASHTO ..... American Association of State Highway and Transportation Officials
BMP ..... Best Management Practice
CEQ ..... Council on Environmental Quality
CWA ..... Clean Water Act
Draft EIS ..... *US 212 Reconstruction Rockvale to Laurel Draft Environmental Impact Statement* (MDT and FHWA, 2008)
EIS ..... Environmental Impact Statement
E.O.. ..... Executive Order
EPA ..... U.S. Environmental Protection Agency
FHWA ..... U.S. Department of Transportation, Federal Highway Administration
Final EIS ..... *US 212 Reconstruction Rockvale to Laurel Final Environmental Impact Statement*
I-90 ..... Interstate 90
MCA ..... Montana Code Annotated
MDEQ ..... Montana Department of Environmental Quality
MDT ..... Montana Department of Transportation
MDT Standard Specifications ..... *Standard Specifications for Road and Bridge Construction* (MDT, 2006)
MEPA ..... Montana Environmental Policy Act
MFWP ..... Montana Fish, Wildlife and Parks
MPDES ..... Montana Pollutant Discharge Elimination System
NEPA ..... National Environmental Policy Act
NRHP ..... National Register of Historic Places
SHPO ..... Montana State Historic Preservation Office
TMDL ..... total maximum daily load
USC. ..... U.S. Code

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
106 SOUTH 15TH STREET
OMAHA NE 68102-1618

REPLY TO
ATTENTION OF

RECEIVED
DEC - 4 2007
ENVIRONMENTAL

November 23, 2007

Planning, Programs, and Project Management Division

MASTER FILE COPY

Mr. Tom Martin, PE
Environmental Services Bureau Chief
Montana Department of Transportation
2701 Prospect Avenue
Helena, Montana 59620-1001

Dear Mr. Smith:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated November 6, 2007 regarding the Draft Environmental Impact Statement for Proposed Transportation Project ROCKVALE – LAUREL; NH 4-1(21)43; CN 4070. The Corps offers the following comments:

The Federal flood plain management criterion basically states, construction that could be damaged by floodwaters or which could obstruct floodflows should not be located in the 100-year flood plain. Any nonresidential construction that could be damaged by floodwater must be placed above or flood proofed to above the 100-year floodwater surface elevation. All construction should be designed to minimize potential harm to or within the flood plain. Higher levels of protection are encouraged to provide added safety. If the operation of the constructed facilities is considered critical during flood periods, the facilities should be protected from at least the 500-year flood. A1-1

For construction alternatives 2, 3, 3a, and 3b that have segments that encroach on the flood plain, they must be located outside the floodway. If a floodway has not been determined and designated, the construction should be as far from the stream channel as possible. The goal of any construction in the flood plain is to achieve the highest level of flood protection with zero impact to adjacent property. A1-2

Ensure the proposed project is in compliance with flood plain management criteria of Carbon and Yellowstone Counties, and the State of Montana. As a minimum, the design should ensure the 100-year flood water surface elevation of any stream affected that has a designated floodway, is not increased relative to pre-project conditions. If a designated floodway has not been identified then the design should ensure that the 100-year floodwater surface elevation is not increased by more than one half of a foot relative to pre-project conditions. It is desirable, however, that water surface elevations either remain the same or decrease as a result of this project. A1-3 A1-4

Printed on Recycled Paper

A1-1 *As discussed in Section 4.16.2.1, Evaluation of Encroachment into the Base Floodplain,* each of the proposed alternatives would result in longitudinal encroachment in the 100-year floodplains that would cause minor changes in flood stage and flood limits. However, these changes would not result in significant adverse impacts or significant changes in flood stage and flood limits. During final design all facilities that could be damaged by flood waters would be assessed to determine if they are deemed as critical. Those determined critical would be provided protection from the 500-year flood.

A1-2 As discussed in *Section 4.16.2.1, Evaluation of Encroachment into the Base Floodplain* and shown on *Figure 4-2, Floodplain along US 212 from Rockvale to Laurel,* a floodway has been identified and Alternatives 2, 3A, and 3B will be located outside the floodway. However, as further discussed, these alternatives will encroach on the floodplain but would not result in significant adverse impacts or significant changes in flood stage and flood limits. During final design a qualitative assessment of specific direct floodplain impacts would be conducted and would include hydraulic modeling to simulate water surface profiles for each existing and proposed structure and where practicable measures would be taken to achieve the goal of zero impact to adjacent property.

A1-3 Design activities will be coordinated with the appropriate county and state agencies, and any necessary permits will be obtained.

A1-4 All of the alternatives, with the possible exception of Alternative 1 fall outside the designated floodway and will not affect the floodway elevation. During detailed design, a qualitative assessment of specific direct floodplain impacts would be conducted and would include hydraulic modeling to simulate water surface profiles for each existing and proposed encroachment. The design of the proposed project would result in a facility that would not result in a water surface increase from the base flood elevation greater than 0.15 m (0.50 ft), and where practicable measures would be taken to achieve the goal of zero impact to adjacent property.

Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect ground water resources. If you have not already

done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the Montana Department of Fish, Wildlife and Parks regarding fish and wildlife resources. In addition, the Montana State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area. A1-5

If construction activities involve any work in waters of the United States, a Section 404 permit may be required. For a detailed review of permit requirements, preliminary and final project plans should be sent to: A1-6

U.S. Army Corps of Engineers
Helena Regulatory Office
Attention: CENWO-OD-R-MT/Steinle
10 West 15th Street, Suite 2200
Helena, Montana 59626

If you have any questions, please contact Mr. Dave Crane of my staff at (

Sincerely,

Larry D. Janis, Chief
Environmental, Economics, and
Cultural Resources Section
Planning Branch

A1-5 The Montana Department of Transportation (MDT) has coordinated with all applicable federal, state, and local agencies during preparation of the Draft and Final EISs. In addition to coordinating with the applicable agencies, MDT has also complied with the applicable regulations (see Final EIS *Appendix H, Section 106 Determination of Effects*.)

A1-6 MDT will continue to coordinate with the U.S. Army Corps of Engineers to identify permit requirements. Applicable permits will be applied for as part of project implementation.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

January 8, 2008

9043.1
ER 07/1017

Dan Smith, P.E.
Environmental Services Bureau
Montana Department of Transportation
2701 Prospect Ave., P.O. Box 201001
Helena, MT 59620-1001

Dear Mr. Smith:

The U.S Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement for US-212 Reconstruction, Rockvale to Laurel, Yellowstone and Carbon Counties, Montana, and offers the following comments.

SECTION 6(f) COMMENTS

We note the statements on pages 3-2 and 3-13 that (1) Riverside Park is north of the project area and (2) there are no recreational facilities within the project area. Nonetheless, the National Park Service has reviewed this project in relation to any possible conflicts with the Land and Water Conservation Fund (L&WCF) and the Urban Park and Recreation Recovery programs, and has provided the following information on L&WCF projects in the vicinity:

30-00489 – Laurel Riverside Park
30-00621 - Laurel Thompson Park
30-00630 – Yellowstone County Two Moon Park

They recommend you consult with the official who administers the L&WCF program in Utah to determine any potential conflicts with Section 6(f)(3) of the L&WCF Act (Public Law 88-578, as amended). This sections states:

> "No property acquired or developed with assistance under this section shall, without the approval of the Secretary [of the Interior], be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location."

A2-1 (cont.)

A2-1 Consultation with Montana Fish, Wildlife and Parks (MFWP) has indicated that the project would not affect properties considered Section 6(f) properties under the Land and Water Conservation Fund Act (Public Law 88-578, as amended). Text has been added to the Final EIS.

The administrator for the L&WCF program in Montana is Mr. Walt Timmerman, Grants Coordinator, Montana Department of Fish, Wildlife and Parks, P.O. Box 200701, Helena, Montana, 59620. Mr.Timmerman's phone number is 406-444-3753.

If you have any questions regarding these L&WCF projects, please contact Terree Klanecky, Outdoor Recreation Planner, in the National Park Service Midwest Regional Office at

A2-1 (cont.)

SPECIFIC COMMENTS

Section 3.10.1, Surface Water Flow Rates, page 3-23

Data continue to be collected at the U.S. Geological Survey (USGS) streamflow gaging stations listed in the draft EIS and are available on the Internet at http://waterdata.usgs.gov/nwis/nwisman/?site_no=06208500&agency_cd=USGS for the Clarks Fork station, and http://waterdata.usgs.gov/nwis/nwisman/?site_no=06214500&agency_cd=USGS for the Yellowstone River station.

A2-2

Section 3.15.1, Threatened and Endangered Wildlife, page 3-45

The USGS website listed in the first paragraph http://www.npwrc.usgs.gov/resource/birds/wcdata/mt_fig1.htm should be included as a citation in the references section.

The suggested citation is:

USGS, 2006. "A Comprehensive Review of Observational and Site Evaluation Data of Migrant Whooping Cranes in the United States, 1943-99: State Summaries - Montana". U.S. Department of the Interior, U.S. Geological Survey: http://www.npwrc.usgs.gov/resource/birds/wcdata/mt_fig1.htm. Page last modified: August 7, 2006.

A2-3

Section 4.14, Wildlife Resources, pages 4-49 - 4-57

The draft EIS makes reference to several factual statements without supporting scientific documentation. The final EIS would be enhanced if supporting references for such statements of fact were identified and included in the references section. Examples include, but are not limited to, the following:

- "Whooping crane occurrence in the general project area is very irregular and only during migration. ... Small wetlands near human activity are not attractive to migrating whooping cranes." (page 4-55, last paragraph)
- All of the bullets on page 4-56: "The project area does not include any suitable habitat for Canada lynx ... Since the only suitable habitat in the project area is the Clarks Fork Yellowstone River, Drummond's hemicarpha would not be affected

A2-4 (cont.)

A2-2 Recent data have been obtained and *Section 3.10.1, Surface Water Flow Rates,* has been updated accordingly.

A2-3 Citation has been added, as suggested, to *Section 3.15.1, Threatened and Endangered Wildlife*.

A2-4 Additional documentation of the basis for the conclusions has been added to the FEIS in *Section 4.15, Threatened and Endangered Species and State Species of Concern*.

by the proposed project." "The milk snake, the western hognose snake, and the northern leopard frog have not been documented in the immediate project area." (page 4-57, first full paragraph)

A2-4 (cont.)

The draft EIS states on page 4-51 that, "Discussions with resource agencies and MDT identified no specific problem areas in terms of big game vehicle collisions". It would benefit the public for the final EIS to identify which resource agencies were consulted in these discussions.

A2-5

If you have any questions concerning the above Specific Comments, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at [redacted] or at lwoosley@usgs.gov.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

cc: Alan C. Woodmansey, P.E.

A2-5 Identification of specific problem areas for big game/vehicle collisions was discussed with MFWP and MDT.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th Street, Suite 3200
HELENA, MONTANA 59626

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DEC 17 2007
ENVIRONMENTAL

Ref: 8MO

December 13, 2007

Mr. Dan Smith, P.E.
Acting Bureau Chief
Environmental Services Bureau
Montana Dept. of Transportation
2701 Prospect Avenue, P.O. Box 202001
Helena, MT 59620-1001

Re: CEQ # 20070473; Comments on U.S. 212 Reconstruction, Rockvale to Laurel, Draft Environmental Impact Statement

Dear Mr. Smith:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the U.S. Highway 212 Reconstruction, Rockvale to Laurel Project, in accordance with its responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. The EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The DEIS states that analysis of traffic operations indicates that U.S. Highway 212 capacity, mobility, safety and access management cannot be addressed within the existing two lane highway, and as a result, the preferred alternative, Alternative 5B, involves construction of a four-lane highway on a new alignment closer to the Yellowstone River, while leaving the existing roadway in place. We have some environmental concerns, since this will result in significant earthmoving and increased potential for erosion and sediment production/transport both during and after construction; a larger roadway footprint; and potential adverse impacts to water quality, wetlands, vegetation, farmland, wildlife habitat and wildlife movement. However, all the other build alternatives also involve construction of a four-lane roadway on a new alignment, and would have similar potential adverse impacts. Alternative 5B appears to have slightly less impacts to wetlands than Alternative 2, Alternatives 3A and 3B, and less floodplain impacts than Alternatives 1 and Alternatives 3A and 3B. EPA also understands the need to accommodate growing traffic volume; provide mobility for goods and people; improve safety for local, regional tourist, and commercial truck traffic; and manage access for local roadways and land use.

Accordingly, EPA does not object to the preferred alternative, although we do have environmental concerns regarding the aforementioned potential impacts to water quality,

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No comments were delineated for the part of the letter shown on the facing page.

The concerns discussed briefly in this letter are addressed with specific comments beginning on page I-23.

wetlands, vegetation, farmland, wildlife habitat and wildlife movement. We have particular concerns about the potential adverse impacts to wildlife movement likely to result from construction of a four-lane roadway with additional traffic lanes and higher vehicle speeds with fences along the right-of-way, all of which are likely to act as barriers to wildlife passage. The DEIS states that deer move from surrounding uplands to the Yellowstone River valley year round to forage on pastures and irrigated fields, and that filling in of ephemeral draws and replacing them with culverts is likely to disrupt wildlife movement. We are concerned that mitigation measures are not proposed to facilitate wildlife passage across the wider roadway. We believe features should be designed into the new highway, such as bridges and culverts that facilitate safe wildlife passage under the roadway to allow wildlife movement to and from the Yellowstone River riparian area.

The preferred alternative would cross Farewell Creek, an intermittent stream, and four ephemeral draws. EPA recommends that stream crossings be designed with dimensions and features that facilitate wildlife crossing. Bridges and culverts should have adequate width and capacity to allow wildlife movement, as well as pass flood flows, transport bedload, and minimize encroachment upon stream channels, riparian areas and floodplains.

It will also be important that appropriate permits and authorizations are obtained for work in and near aquatic areas (e.g., Section 318 short term turbidity exceedance authorization, 310 or 124 permits, MPDES Stormwater permits, Corps of Engineers 404 permit, etc.), and that adequate erosion control and sediment stabilization and revegetation measures are utilized. A Storm Water Pollution Prevention Plan (SWPPP) should be prepared with appropriate sediment and erosion control measures such as fiber mats, catch basins, and silt fences, and appropriate stormwater treatment systems as prescribed by the Montana DEQ. We also recommend that a summary of the Wetland Mitigation Plan providing for adequate replacement of lost wetland functions and values be included in the FEIS, perhaps as an appendix or included in the 404(b)(1) evaluation in Appendix E.

We are pleased that Alternative 4 that would have crossed the Clarks Fork Yellowstone River twice was removed from further consideration, since it had potential for substantial environmental impacts, particularly impacts to riverine and wetland ecosystems.

We are enclosing our more detailed comments, questions, and concerns regarding this DEIS for your review and consideration. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the U.S. 212 Reconstruction Rockvale to Laurel DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). Our environmental concerns regard impacts to wetlands and aquatic habitat, as well as impacts to wildlife and wildlife movement. Additional information is needed to fully assess and mitigate all potential impacts of the management actions. A summary of EPA's rating system is enclosed for your information.

2

No comments were delineated for the part of the letter shown on the facing page.

The concerns discussed briefly in this letter are addressed with specific comments beginning on page I-23.

If we may provide further explanation of our concerns please contact Mr. Steve Potts of my staff in Helena at [redacted] or in Missoula at [redacted] Thank you for your consideration.

Sincerely,

John F. Wardell
Director
Montana Office

Enclosures

cc: Larry Svoboda/Julia Johnson, EPA, 8EPA-N, Denver

3

No comments were delineated for the part of the letter shown on the facing page.

The concerns discussed briefly in this letter are addressed with specific comments beginning on page I-23.

4

No comments were delineated for the part of the letter shown on the facing page.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

5

No comments were delineated for the part of the letter shown on the facing page.

EPA Comments on the Draft Environmental Impact Statement (DEIS) for the U.S. 12 Rockvale to Laurel Project

Brief Project Overview:

The Montana Dept. of Transportation (MDT) and Federal Highway Administration (FHWA) have evaluated proposed improvements for a 10.8 mile segment of U.S. Highway 212 and short segment of U.S. 310, southwest of Rockvale in Carbon and Yellowstone Counties in south central Montana. U.S. Highway 212 is a two-lane highway with narrow shoulders that is the main northeasterly route for the Red Lodge and Yellowstone Park recreational areas. The purpose of the proposed project is to accommodate growing traffic volume and provide mobility for goods and people; improve safety for local, regional tourist, and commercial truck traffic; and manage access for local roadways and land use. Analysis of traffic operations for U.S. 212 indicates that highway capacity, mobility, safety and access management cannot be addressed within the existing two lane highway.

Six build alternatives and no build were evaluated. The six build alternatives all included four-lane roadways with varied alignments. The build alternatives included the Alternative 1, Far West Bench Alternative; Alternative 2, Near West Bench Alternative; Alternatives 3A and 3B, two variations of a Near Existing Alignment Alternative; and Alternatives 5A and 5B, two variations of a Combined West Bench Alternative. An East Bench Alignment (Alternative 4) was also considered, but dropped from detailed evaluation due to the need for two river crossings and increased riverine and wetland impacts.

The preferred alternative (Alternative 5B –Combined West Bench) would involve reconstruction of US 212 to create a four-lane divided highway on a new alignment northwest and partially parallel to the current two-lane route. The junction of US 212 with US 310 in Rockvale would also be reconstructed.

Comments:

1. We appreciate the inclusion of information describing the deficiencies of the existing roadway as well as discussion of transportation demand, capacity, traffic operations, level of service, access, railroad crossing issues, accident history and safety needs in Chapter 1 of the DEIS. We also appreciate the clear presentation of alternatives, with inclusion of many figures showing median sections and the roadway footprints, maps and aerial photos showing alternative alignments, intersection alternatives in Appendix A, and tables summarizing design features and tables comparing alternatives, and the discussion of the basis for recommending the preferred alternative.

   This presentation of information regarding the alternatives improves project understanding, facilitates alternatives evaluation, helps clarify issues, and helps provide a clearer basis of choice among options for the decision maker and the public in accordance with the goals of NEPA. EPA also appreciates the opportunity to review and comment

No comments were delineated for the part of the letter shown on the facing page.

on a preliminary EIS document, and participate in a scoping meeting and field trip early in the project planning.

Alternatives

2. The preferred alternative, Alternative 5B, would result in a four-lane highway with a larger roadway footprint and a new alignment closer to the Yellowstone River, which would include much earthmoving and potential for erosion and sediment production and transport, both during and after construction, and would impact farmland, vegetation, wetlands and other wildlife habitat and wildlife movement. However, all the other build alternatives, which also involve construction of a four-lane roadway on a new alignment, and have similar adverse impacts. Alternative 5B does not appear to have higher impacts than other build alternatives. In fact, Alternative 5B appears to have slightly less impacts to wetlands than Alternative 2 and Alternatives 3A and 3B (1.5 acres vs. 2.0 to 2.5 acres of wetlands impacts), and less floodplain impacts (3.2 acres of floodplain impact with Alternative 5B vs. 8.6, 30.6 and 10.6 acres, respectively with Alternatives 1, 3A and 3B, Table 2-11). EPA also understands the need to accommodate growing traffic volume; provide mobility for goods and people; improve safety for local, regional tourist, and commercial truck traffic; and manage access for local roadways and land use.

Accordingly, EPA does not object to the preferred alternative. We do, however, have some concerns regarding potential impacts to water quality and wetlands, and impacts to wildlife habitat and wildlife passage that may result from construction of a four-lane roadway with additional traffic lanes and higher vehicle speeds with fences along the right-of-way, all of which are likely to acts as barriers to wildlife passage. We are concerned that mitigation measures are not proposed to facilitate wildlife passage around the wider roadway. We believe features should be designed into bridges and culverts to facilitate wildlife movement under the roadway, particularly to allow wildlife movement to and from the Yellowstone River riparian area. We note that the DEIS states that deer move from surrounding uplands to the river valley year round to forage on pastures and irrigated fields (page 3-41), and that filling in of ephemeral draws and replacing them with culverts is likely to disrupt wildlife movement (page 4-53). A3-1 A3-2

We are pleased that Alternative 4 that would have crossed the Clarks Fork Yellowstone River twice was removed from further consideration, since it had potential for substantial environmental impacts, particularly impacts to riverine and wetland ecosystems (page 2-50).

Aquatic Impacts

3. We appreciate the inclusion of Figure 3-6 (page 3-37) showing locations of water bodies in relation to the alternative roadway alignments. The preferred alternative would cross Farewell Creek, an intermittent stream, and four ephemeral draws (page 4-54). EPA recommends use of bridges or culverts with adequate width and capacity to pass flood flows and bedload transport, with minimal encroachment upon the stream channel, riparian area and floodplain; and recommends that stream crossings be designed to allow A3-3 (cont.)

2

A3-1 Comment noted. Thank you.

A3-2 Based on consultation with MFWP and data from MDT's animal-vehicle collision records, MDT is currently not considering the construction of full-fledged wildlife crossings under the roadway on this project. Placement of wildlife crossings are dependent on the density of animal populations in the area and documented locations of wildlife crossings and/or movements patterns. According to MFWP, deer do not concentrate in high numbers in the project area, particular migration routes have not been identified, and big-game winter range has not been classified. Data from MDT's animal-vehicle collision records indicate a relatively low number of animal-vehicle collisions along the existing two-lane road in the project corridor when compared to the data from other roadways in the general area. As stated in the Draft EIS, as the design process evolves, MDT will continue to evaluate the appropriateness and necessity of wildlife crossing mitigation measures such as signage, wildlife detection systems, over-sized culverts, etc. During right-of-way negotiations with adjacent landowners, MDT will encourage the installation of wildlife-friendly fencing to reduce the chances of fencing becoming a barrier to wildlife movement.

A3-3 All bridges and culverts would be designed to accommodate the required storm flows. As the design process evolves, MDT would continue to evaluate appropriateness and necessity of wildlife crossing mitigation measures such as signage, wildlife detection systems, over-sized culverts, etc. Reclamation of disturbed construction zones, such as ditches and embankments, will be in accordance with MDT's Erosion and Sediment Control Best Management Practices Manuals.

space and include features to facilitate wildlife crossing. We also encourage use of open bottom culverts that allow natural stream bed substrate and stream grade. The DEIS indicates that Alternative 5B would involve the largest amount of earth moving and filling (page 4-77). We are concerned about the potential for erosion and sediment production and transport to occur both during and after construction, especially at bridge and culvert sites. A3-3 (cont.)

It will be important that appropriate permits and authorizations are obtained for work in and near aquatic areas (e.g., Section 318 short term turbidity exceedance authorization, 310 or 124 permits, MPDES Stormwater permits, Corps of Engineers 404 permit, etc.), and that adequate erosion control and sediment stabilization and revegetation measures are utilized as stated on DEIS page 4-84. A Storm Water Pollution Prevention Plan (SWPPP) should be prepared with appropriate sediment and erosion control measures such as fiber mats, catch basins, and silt fences, and appropriate stormwater treatment systems as prescribed by the Montana DEQ. A3-4

We are pleased that the DEIS acknowledges the potential for contaminated roadway runoff to enter surface and ground water (page 4-34). Roadway construction, operation, and maintenance can impact streams, wetlands and riparian areas from runoff, disruption of drainage patterns, stockpiling of materials in staging areas, maintenance of construction and maintenance equipment, application of herbicides, mowing, and snow plowing and sanding of roads or use of salt and deicers. The impacts of maintenance activities are more a matter of a long-term indirect and cumulative effects than any one incident. A3-5

The DEIS identifies four measures for management of highway runoff: vegetative controls; wet detention basins; infiltration systems; and wetlands; and indicates that vegetative controls are the best mitigation tool (page 4-35). We support use of vegetative filters and sediment traps to capture sediment before it can enter streams and wetlands, but also encourage consideration of infiltration basins or dry wells as another potentially effective way to remove contaminants from stormwater runoff. Although we note that infiltration basins or dry wells should be inspected and maintained on a regular schedule. Also, sometimes groundwater monitoring may be needed to assure that pollutant levels do not increase in ground water, particularly if there are significant amounts of contaminated highway runoff directed to infiltration beds or dry wells upgradient from public water supply wells. A3-6

We also encourage the highway agencies to train road maintenance staff regarding procedures that minimize adverse impacts of road maintenance activities on streams and wetlands (contact, Montana Local/Tribal Technical Assistance Program at Montana State University, Steven J. Jenkins, P.E, at 406-994-6100 or 1-800-541-6671). Snow plowing subsequent to sanding moves sand off the roadbed to the adjacent ditch line and fill slopes, filling depressions and ditches and widening shoulders, which can have adverse effects upon streams, wetlands, and riparian areas. These activities have the potential to introduce sediment, materials and chemicals into streams. We also encourage use of

3

A3-4 MDT has coordinated with all applicable federal, state, and local agencies during preparation of the Draft and Final EISs. MDT will continue the coordination through final design and all required permits will be secured prior to construction.

A3-5 Maintenance has been added to the indirect effects on page 4-35. Ongoing maintenance has been added as a cumulative impacts activity to *Section 4.25, Cumulative Impacts*.

A3-6 Infiltration basins were identified as an option (dry wells were not included), however the drawbacks of such systems (as noted in he U.S. Environmental Protection Agency's [EPA's] comments) include increased cost of maintenance and a greater possibility of contaminating groundwater and public water supply wells down-gradient of the new proposed alignment. The preferred alignment would be upgradient of the majority of existing wells, thus increasing the potential for contamination of these wells with the installation of infiltration basins and dry wells.

BMPs for winter maintenance operations such as using mechanical brooms to pick up sand after thaws.

4. Thank you for identifying and discussing waterbodies listed by the Montana DEQ on the Clean Water Act 303(d) list (pages 3-23, 3-24, 4-34). As you know stream segments designated as "water quality impaired" and/or "threatened" listed on State 303(d) lists require development of a Total Maximum Daily Load (TMDL). A TMDL:

Identifies the maximum load of a pollutant (e.g., sediment, nutrient, metal) a waterbody is able to assimilate and fully support its designated uses; allocates portions of the maximum load to all sources; identifies the necessary controls that may be implemented voluntarily or through regulatory means; and describes a monitoring plan and associated corrective feedback loop to insure that uses are fully supported; or can also be viewed as, the total amount of pollutant that a water body may receive from all sources without exceeding Water Quality Standards (WQS); or may be viewed as, a reduction in pollutant loading that results in meeting WQS.

The DEIS indicates that the Clark Fork Yellowstone River is listed by the State of Montana under Section 303(d) of the Clean Water Act, and the TMDL for this waterbody is scheduled for the 2008-2012 planning cycle. It will be important that the proposed US 212 road improvement project be consistent with MDEQ's TMDL development for the Clark Fork Yellowstone River. We encourage MDT to coordinate with the Montana DEQ TMDL Program staff to help assure such consistency (contact Mr. Robert Ray of MDEQ in Helena at 406-444-5319). A3-7

Wetland Impacts

5. We appreciate the inclusion of Figure 3-5 (page 3-33) showing wetlands and potential wetland mitigation sites along the alternative roadway alignments, along with Table 4-9 summarizing wetland impacts. We also appreciate the more detailed wetland information disclosed in the preliminary 404(b)(1) Evaluation (Appendix E).

Wetlands impact assessment should include impacts to wetlands from activities that occur outside the highway right-of-way such as from gravel mining or excavation of borrow material, stockpiling of materials in staging areas, and disposal of waste materials. It is not clear if the predicted wetland impacts identified in the DEIS include potential wetland impacts that may occur outside the right-of-way. Is there a possibility that Alternative 5B may potentially involve additional wetlands impacts from material source borrow or deposition sites due to extended construction periods and/or the need for additional borrow or deposition material? The FEIS should clarify that the impacts to wetlands include impacts from activities outside the highway right-of-way, such as excavation of borrow material and stockpiling of materials during construction. A3-8

It will be necessary for the MDT to oversee the construction contractor(s) to assure that additional impacts are minimized, and that environmentally sensitive areas are avoided when obtaining borrow or material sources and selecting construction staging areas.

4

A3-7 Development of the total maximum daily load (TMDL) for the Clarks Fork Yellowstone River is scheduled for the 2008-2012 planning cycle. Once completed, MDT will coordinate with the Montana Department of Environmental Quality (MDEQ) TMDL Program staff to ensure consistency with the TMDL for this water body.

A3-8 MDT agrees that impacts to wetlands should be avoided outside of the right-of-way. However, any activities outside of MDT's right-of-way and beyond construction easements are the responsibility of the contractor. The contractor will be required to obtain permits and landowner agreements in areas outside of MDT authority. A copy of these permits will be supplied to MDT by the contractor.

How will MDT oversee contractor identification and use of material source sites and excavation/fill operations to assure that adverse impacts from such sites and operations are avoided? A3-9

6. As you know Clean Water Act Section 404 Dredge and Fill Permit rules and policies involving placement of fill material in waters of the U.S., including wetlands, require that adverse impacts to aquatic resources be avoided as much as possible, and that the "least damaging practicable alternative" to aquatic resources be permitted so long as that alternative does not have other significant adverse environmental consequences (40 CFR 230.10(a)). An alternative is considered "practicable" if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

   We are pleased that the preferred alternative was located to avoid wetlands WL 18 and WL19 and minimize impacts to WL 17 (page 4-40), and that wetlands avoidance, minimization and compensation are discussed in the DEIS (pages 4-43 to 4-45), and that a preliminary 404(b)(1) Evaluation is included in Appendix E. As an additional suggested wetland impact avoidance/minimization measure, we recommend installation of fencing during construction to prevent unnecessary clearing of vegetation. We also encourage salvaging of wetland vegetation and mature shrub vegetation for use in revegetation activities. A3-10

7. As you know compensation for unavoidable impacts to wetlands should be provided by creating, enhancing and/or restoring wetland habitat of similar type and function as to what was lost, with a goal of achieving no overall net loss of wetlands values and functions. We appreciate the inclusion of Table 4-10 (page 4-44) showing potential wetland mitigation opportunities.

   The goal of wetland mitigation should be to replace the functions and values of lost wetlands in areas adjacent to or as close as possible to the area of wetlands loss. EPA/Corps policy has accepted acre-for-acre replacement of wetlands as a surrogate for replacement of functions and values when there is a lack of definitive information on functions and values, although adjustments may be necessary to reflect the expected degree of success of mitigation, and provide an adequate margin of safety (i.e., greater than acre-for-acre replacement is suggested when impacted wetlands have high function & value and likelihood of replacement is low).

   We generally recommend that when a preferred roadway alternative is identified in the FEIS, that a specific detailed Wetland Mitigation Plan providing for adequate replacement of lost wetland functions and values be prepared. A3-11 We recommend that the Wetland Mitigation Plan contain a statement of wetland mitigation goals, a monitoring plan, long-term management/protection objectives and a commitment to conduct wetland restoration additional work, if required, to meet the goals of the Plan. This Plan will need to be approved by the appropriate agencies before implementation of the proposed project. We also recommend that at least an outline or summary of the Wetland Mitigation Plan be included in the FEIS (perhaps as an appendix). A3-12

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A3-9 MDT agrees that impacts to wetlands should be avoided outside of the right-of-way. However, any activities outside of MDT's right-of-way and beyond construction easements are the responsibility of the contractor. The contractor will be required to obtain permits and landowner agreements in areas outside of MDT authority. A copy of these permits will be supplied to MDT by the contractor.

A3-10 Text has been added to page 4-44 that mentions the use of construction fencing, where feasible, and that wetland plants may be salvaged, if appropriate. No change was made in the Section 404(b)(1) evaluation because there was no appropriate place to add text.

A3-11 A Wetland Mitigation Plan will not be included in the Final EIS, because this is too early in the process. A Wetland Mitigation Plan will be prepared during the final design process. *Section 4.11.2.6, Mitigation,* on page 4-43 of the Draft EIS under *Compensation,* addresses potential onsite and offsite mitigation, which is appropriate during the EIS stage. As stated in this section of the Draft EIS, MDT has mitigation reserves within the same watershed to mitigate for wetland impacts. Whether onsite mitigation or offsite mitigation is used to mitigate wetland impacts on this project, MDT will attempt to replicate the function and values of the wetlands lost to construction during this project in agreement with the U.S. Army Corps of Engineers.

A3-12 As discussed above, a more detailed wetland mitigation plan will not be developed for the Final EIS. No outline will be included in the Final EIS.

It will be important to contact the Army Corps of Engineers and other regulatory agencies such as the U.S. Fish & Wildlife Service, and Montana DEQ to assure that proper authorizations and permits are obtained prior to incurring aquatic impacts (e.g., contact Todd Tillinger of the Corps of Engineers in Helena at 406-441-1375; Scott Jackson of the USFWS in Helena at 406-449-5225 ext.201, and Mr. Jeff Ryan of the Montana DEQ at 406-444-4626).

We also recommend consideration of a single 404 permit to cover the dredge and fill permitting for the project. This is preferred over issuance of a combination of numerous individual and nationwide permits, since it may allow for improved cumulative effects evaluation as well as to reduce paperwork and permit processing time, and assure that all necessary permits for dredge and fill activities can be obtained for the full project. Although we realize if the project is to be constructed in several segments over varying time periods it may be appropriate to permit each construction segment individually. A3-13

Wildlife Impacts

8. As noted in the prior discussion of Alternatives above, we have concerns regarding potential impacts of a four-lane highway with additional traffic lanes and higher vehicle speeds and right-of-way fencing that will all act as a barrier to wildlife movement, particularly limiting wildlife movement to and from the Yellowstone River. The preferred alternative would also cross Farewell Creek, an intermittent stream and four ephemeral draws (page 4-54). The DEIS states that mule deer move from surrounding uplands to the river valley year round to forage on pastures and irrigated fields (page 3-41, and that filling in of draws and ephemeral streams and replacing them with culverts could disrupt wildlife movement (page 4-53).

   We believe the MDT should include mitigation measures that facilitate wildlife movement under the new four-lane highway with appropriate culvert and bridge culvert designs. We also support use of right-of-way barrier fencing to direct wildlife to culvert and bridge crossings, and consultation with appropriate federal and state agency wildlife biologists during highway planning and design in regard to incorporating provisions for wildlife passage into the design. A3-14

   The guide, *Safe Passage: A Users Guide to Developing Effective Highway Crossings for Carnivores and Other Wildlife,* provides information on planning for wildlife connectivity, and wildlife crossings structures such as culverts, arches, open-span bridges, bridge extensions, and wildlife overpasses, as well as various types of wildlife signs. The guide was a joint effort between Southern Rockies Ecosystem Project, Wildlife Consulting Resources, and the Center for Transportation and the Environment. It may be accessed on the Web at http://www.carnivoresafepassage.org/index.htm or in PDF format at http://www.carnivoresafepassage.org/carnivoresafepassage.pdf .

9. We are pleased that the proposed project would have no effect on T&E species (Table 4-11, page 4-55). A3-15

6

A3-13 MDT will fulfill the 404 permitting requirements during the design process in conjunction with the U.S. Army Corps of Engineers.

A3-14 Animal-vehicle collisions (AVC) are a growing concern in terms of human safety; costs related to injury, property damage, and disposal; and the viability of wildlife populations. Although some species suffer considerable population losses from these collisions, large species such as deer (the main concern in the Rockvale to Laurel project corridor) pose a high risk for drivers. There are many types of data collected and analyzed by MDT prior to making a decision whether or not to include wildlife crossings in the design of a project. The data analyzed for this project included, but was not limited to: AVC records, MDT Road Kill data, project scope and cost, existing and potential barriers to wildlife movement, surrounding land use and ownership, type and quantity of habitat potentially affected, species affected, migration patterns and documentation of seasonal habitats, professional literature, guidelines and recommendations (including agency consultation), density of animal populations in the area, and documented locations where wildlife cross the roadway frequently.

Based on the data analyzed, it was determined by MDT that constructing full fledged wildlife crossings (overpasses or underpasses) would not be cost effective and, therefore, not warranted. As stated in the Draft EIS under *Section 4.14.2.6, Mitigation;* "…as the design process evolves, MDT will continue to evaluate appropriateness and necessity of wildlife crossing mitigation measures such as signage, wildlife detection systems, over-sized culverts, etc."

A3-15 Comment noted. Thank you.

Air quality

10. We appreciate the discussion of potential project effects on air quality (pages 4-23, 4-24), and are pleased that the DEIS indicates that the proposed project would comply with Section 176(c) of the Clean Air Act (page 4-23). It is important that exceedances of National Ambient Air Quality Standards (NAAQS) be avoided. We recommend implementation of a dust monitoring and suppression program during construction, and suggest that the construction traffic control plan include consideration of measures that minimize prolonged periods of vehicle idling during construction traffic delays as much as possible. Particular attention should be given to any areas along the corridor where people live near the highway (within 1000 feet) or where schools, hospitals, or elderly care facilities are near the roadway construction. Residents and sensitive populations may be adversely impacted now or in the future and this should be discussed or the absence of these conditions should be noted.

A3-16

A3-17

Hazardous Waste Sites

11. Thank you for including analysis and disclosure of potential impacts to hazardous waste sites (page 4-90 to 4-93).

A3-18

Bicycle and Pedestrian Use

12. We support the proposed inclusion of 8 foot wide highway shoulders in the build alternatives to better accommodate bicyclists and pedestrians (page 4-22). For your information, the League of American Bicyclists provides recommendations regarding use of rumble strips on roads (see http://www.bikeleague.org/programs/index.php under Rumble Strips). This league recommends:

    Non-freeway Facilities: Rural Multi-lane and Two-lane Roadways: Rumble strips should only be installed on non-freeway facilities such as rural multi-lane and two-lane roadways for which an engineering study suggests that the number of ROR crashes would likely be reduced by the installation of shoulder rumble strips. In some cases, countermeasures such as improved signing and markings, increased pavement skid resistance or other roadway improvements may be more appropriate than rumble strips or used in conjunction with them. When rumble strips are warranted and milled-in rumble strips have been selected over other rumble strip alternatives. Reducing the width and depth of rumble strips makes the rumble strip easier to cross for a bicyclist and eliminates the need for a larger offset. Where rumble strips are warranted, the following guidelines should be followed to the maximum extent practical:

    a) Raised or rolled-in style rumble strips are preferable on all non-interstate roads, rather than milled-in designs. The most recent studies indicate a milled depth of 8±1.5 mm (5/16 ± 1/16 in) provides reasonable warning to most motorists while not being unduly dangerous to cross on a bicycle when necessary, with 8 mm (5/16 in) depth highly preferred.

A3-19 (cont.)

7

A3-16 National Ambient Air Quality Standards will not be exceeded.

A3-17 As stated *in Section 4.22.8, Air Quality,* all activities will be conducted in accordance with MDT's *Standard Specifications for Road and Bridge Construction* (MDT Standard Specifications; MDT, 2006) requiring contractors to operate in compliance with applicable federal, state, and local air quality standards.

A3-18 Comment noted. Thank you.

A3-19 Comment noted. Thank you. *Section 4.7, Pedestrian and Bicycle Considerations,* discusses pedestrian and bicycle considerations. Your information is consistent with MDT's Rumble Strip Policy, which exceeds the American Association of State Highway and Transportation Officials (AASHTO) standards for this purpose.

b) The recommended width should not exceed 300 mm (12 in) long perpendicular to the travel lane. Some states are currently using narrower strips.

c) Most bicyclists prefer rumble strips to be installed as close to the travel lane or under the edge line as possible and no more than 100 mm (4 in) from the edge line.

d) Rumble strips should not be continuous, but should be installed with gap spacing of not more than 14.6 m (48 ft) of rumble strip and not less than 3.2 m (12 ft) of clear space.

e) Rumble strips should not be installed on steeper downhills on highways other than interstates.

f) The minimum clear shoulder width recommended for a bicycle to travel is 1.5 m (5 ft). In instances where a curb may infringe on this width, the minimum shoulder width is 1.8 m (6 ft). The 1994 FHWA publication entitled, Selecting Roadway Design Treatments to Accommodate Bicycles, recommend 1.8-2.4 m (6-8 ft) of clear shoulders for most bicyclists on busy rural roads. The need for rumble strips where guardrails are present is questioned. A Caltrans study specifically states that where bicyclists are permitted, "shoulder rumble strips should not be used unless a minimum of 1.5 m (5 ft) of clear shoulder width for bicycle use is available between the rumble strip and the outer edge of the shoulder." Summary, a minimum of 1.5 m (5 ft) clear shoulder space must remain outside the rumble strip at all times, with a wider clear space provided on roads with 2.4 m (8 ft) shoulders.

A3-19 (cont.)

Indirect Effects and Land Use

13. We appreciate the discussion of the indirect effects of proposed improvements to US 212 (pages 4-11 to 4-20), but believe highway improvements are a more important factor influencing the rate and pattern of land use development and conversion of open space to residential and commercial land uses than is suggested in the DEIS. Reduced travel time promoted by highway improvements could increase the potential for commuters to commute to Billings, which could facilitate conversion of land to residential uses in the area, with associated additional commercial development. While we acknowledge that the rate and pattern of growth and land use changes are influenced by many factors and cannot be predicted with great reliability, we believe improved transportation is a key factor, and that the DEIS may be underestimating the extent to which improvements to US 212 may influence the rate and pattern of future growth and land use development.

A3-20

We encourage the highway and local governments to consider mitigation measures for induced or facilitated growth and related effects such as access controls and context sensitive designs, such as zoning controls and land use planning, transfer of development rights, growth management regulation, resource management and preservation regulation, land acquisition and conservation easements; and development fees and exactions.

A3-21

8

A3-20 Thank you for your comment. The text has been modified in *Section 4.1.2.1, Indirect Effects*.

A3-21 MDT will develop an access plan as suggested in the comment. However, MDT cannot control growth-management measures that may be developed by local governments.

Environmental Justice

14. Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires that Federal agencies make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations. The Executive Order makes clear that its provisions apply fully to Native Americans. We are pleased that the analysis and disclosure of environmental justice effects (pages 4-20, 4-21) indicates that the proposed project would not result in disproportionately high or adverse effects to minority or low income populations, and that all residents including minorities and low income populations would benefit from reduced congestion and improved safety on US 212. A3-23

Weed Management

15. We are pleased that the DEIS discusses noxious weed infestation risks and control actions (pages 3-39 to 3-40, 4-52), and that MDT would seed disturbed areas with desirable plant species as soon as practicable as recommended by the MDT Botanist. EPA supports control of noxious weeds, which are a great threat to biodiversity, and can out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there are ground disturbances such as construction. A3-24

We support minimization of disturbance to existing native vegetation and rapid revegetation of disturbed areas (reseed with native grass mix). We encourage development of pre-construction weed management plans that include provisions for temporary or erosion control seed mix during construction as well as provisions for post-construction revegetation of disturbed areas. Where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses such as smooth brome, thereby allowing native species to eventually prevail. A3-25 A3-26

EPA also encourages prioritization of weed control techniques that focus on non-chemical treatments first, with use of chemicals (herbicides) as a last resort. If herbicide applications are needed they should be carried out by licensed applicators and in accordance with manufacturers recommendations. It is important that herbicides be applied by certified herbicide applicators, who understand water contamination concerns. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. All efforts need to be made to avoid movement or transport of herbicides into surface waters that could adversely affect fisheries or other water uses during weed control treatments (i.e., use mitigation measures avoid herbicide drift to streams and wetlands during treatments). A3-27 A3-28

9

A3-23 Comment noted. Thank you.

A3-24 Comment noted. Thank you.

A3-25 Comment noted. Thank you.

A3-26 To reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation, MDT will coordinate with the County Weed Supervisor to reclaim disturbed areas within MDT right-of-way and easements. These areas will be seeded from weed-free sources with desirable plant species, as recommended by the MDT botanist. Revegetation will be conducted in accordance with MDT Standard Specifications. An erosion and sediment control plan will be prepared in compliance with Clean Water Act (CWA) Section 402, Montana Pollutant Discharge Elimination System (MPDES) regulations.

A3-27 The first line of control is revegetation. Herbicide applications, if required, would be conducted by licensed applicators.

A3-28 Best management practices (BMPs) for herbicide control would be followed. Any applications adjacent to water bodies or aquatic environments would use chemicals approved for aquatic environments.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
National Geodetic Survey
Silver Spring, Maryland 20910-3282

November 27, 2007

Mr. Dan Smith, P.E.
Acting Bureau Chief
Environmental Services Bureau
Montana Department of Transportation
2701 Prospect Ave., P.O. Box 201001
Helena, Montana 59620-1001

RECEIVED
NOV 29 2007
ENVIRONMENTAL

Dear Mr. Smith,

We have provided comments on the DEIS regarding the US-212 Reconstruction Project, from Rockvale to Laurel, Proposes to Improve Safety for Local & Regional Traffic Area, Yellowstone & Carbon Counties, MT (20070473).

The DEIS has been reviewed within the areas of the National Oceanic and Atmospheric Administration, National Geodetic Survey's (NGS) geodetic responsibility, expertise, and in terms of the impact of the proposed actions on NGS activities and projects.

If there are any planned activities which will disturb or destroy geodetic control monuments, NGS requires notification not less than 90 days in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any required relocation(s). A4-1

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the homepage of NGS at the following Internet address: http://www.ngs.noaa.gov. After entering this website, please access the topic "Products and Services" then "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the NGS database for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

We hope our comments will assist you. Thank you for giving NGS the opportunity to review your DEIS.

Sincerely,

Christopher W. Harm
Program Analyst
NOAA's National Geodetic Survey
Office of the Director
1315 East-West Highway
SSMC3 8729, NOAA, N/NGS
Silver Spring, Maryland 20910

Christopher W. Harm
Program Analyst

NOAA's National Geodetic Survey
Office of the Director
1315 East-West Highway, Room 8729
Silver Spring, MD 20910

Printed on Recycled Paper

A4-1 MDT would notify the National Oceanic and Atmospheric Administration if a geodetic control monument would be affected by the project.

From: Ben Lamb
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Rockvale to Laurel Draft EIS
Date: Wednesday, December 26, 2007 3:09:17 PM

To Whom it may concern,

On behalf of the Montana Wildlife Federation, we respectfully ask that you please extend the comment pieriod for the Rockvale to Laurel Draft EIS by 90 days, so as to give the public ample opportunity to submit meaningful comments. By having a 15 day comment period, which extends through the Holiday Season, we feel that not enough time is available to adequately inspect and comment on this draft EIS given its length and technical complexity. While we understand the desire of the Department of Transportation to begin this project, we also would point out the importance of meaningful public participation in the planning process. EG1-1

Thank you for your consideration,

Ben Lamb
Conservation Director for State and National Issues
Montana Wildlife Federation
[redacted] (phone)
(fax)
P.O. Box 1175
Helena, MT, 59624
Official Web-site: www.montanawildlife.com

This message brought to you by Montana's largest statewide wildlife organization of nearly 7,000 conservation minded hunters and anglers with a common mission 'To protect and enhance Montana's public wildlife, lands, waters and fair chase hunting and fishing heritage'.

EG1-1 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

From: Alaina Garcia
To: mdtcommentsrockvaleeis@mt.gov; scott@solar.physics.montana.edu; spacedc@gmail.com;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Wednesday, December 19, 2007 12:13:58 PM

To whom this may concern,

As a concerned citizen I would like to push the comment deadline back (at least 2 months). This highway is a highway that will create irreversible damage to what remains my personal favorite river. As a Montana citizen for 20 years I have swam, fished, hiked, and enjoyed the Gallatin (east and west), Madison, Jefferson, Bighorn, Blackfoot, Clearwater, and various other creeks and water sources within Montana. The Yellowstone is unbeatable. It is big, deep, fast, beautiful, and what tops it all, it is pristine. This means to me that I relish not hearing cars (much less a highway) and the beauty of still seeing deer, raptors, beavers and small animals for the river borders. The inevitable noise, air, and litter pollution of this highway is not worth the tradeoff of losing our most precious "big river". I think it will be a high challenge to build an ugly highway in Montana. Please consider another route that will not cause harm to our incomparable Yellowstone River. As I have revised one of the alternate routes of the highway to run through the farmland farther away from the river, I advocate for this alternative. Please take this into consideration and at least give the comment deadline more time then ending within the Christmas season.

EG2-1

EG2-2

Sincerely,
Alaina Garcia
Treasurer of S.A.V.E. (Students Advocating for Valuing the Environment), Helena, MT

EG2-1 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

EG2-2 Comment noted. Environmental impacts were discussed in the Draft EIS.

PublicHearing_Transcription-12-11-07.txt

ROCKVALE TO LAUREL HIGHWAY
RECONSTRUCTION PROJECT
PUBLIC HEARING

Taken at the Laurel High School Auditorium
203 East 8th Street
Laurel, Montana

Tuesday, December 11, 2007
8:18 p.m. - 8:34 p.m.

Court Reporter: Susan Shanstrom, RPR

SHANSTROM REPORTING
Registered Professional Reporters
651 Highland Park Drive
Billings, Montana 59102
406-248-5300

1 - - -

2 P R O C E E D I N G S
Page 1

No comments were delineated for the part of the transcript shown on the facing page.

- - -

MR. BARRETT: We will now move into our formal public hearing. We have a clerk recorder with us that is going to record all of this, and this will be transcribed, so this is a formal public hearing.

MR. KENNEDY: Bruce, I would like to make a public comment. My name is Bill Kennedy, Yellowstone County Commissioner. On behalf of the commissioners in Yellowstone County, what we would ask is that the Department and the federal highways look at the comment period and do an extension on that comment period for this -- for this meeting. Thank you.

PH-1

MR. GREWELL: John Grewell. I live at 34 Antelope Ridge Lane in Silesia, Montana. The comment I have is to your numbers in the session earlier. You are talking about 7,000 cars on the road at Rockvale, and ten to twelve thousand north of Rockvale. That tells me that somewhere in the neighborhood of three to four thousand cars are going to try to access this new highway by the feeder lines.

PH-2 (cont.)

And we're told that there will be no provision to update the feeder lines.

The traffic is going to drastically increase on the Farewell Creek Road, and I believe on the White Horse Roads, and there needs to be some consideration as to how to

PH-1 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

PH-2 A paved, realigned US 212/Farewell Road Intersection would be provided. However, improvements to Farewell Road beyond any necessary realignment would be the responsibility of Carbon County.

deal with this impact, because it's going to be caused by this project. PH-2 (cont.)

MS. BRUCE: My name is Val Bruce, and I live at 7 North White Horse Road, and I agree with Mr. Grewell. I believe that the secondary roads coming off this new interstate need to have some more consideration given to them as far as people coming down over those secondary roads. Again, the problem with White Horse is that it's involved in two counties, Carbon County and Yellowstone County. And it's real funny how that is, but I think additional consideration needs to be given to those secondary roads. PH-3

MS. PINKERTON: Eileen Pinkerton. We own 164 North White Horse Road, Laurel, and we live in Billings at 3340 Gregory Drive West, 59102.

In the scoping report, as quoted, it

states a goal of improving capacity. In 2000 traffic was counted as 5,900 vehicles per day and projected to be 8,600 vehicles per day in 2025. That is a one and a half percent increase per year. This will exceed capacity of a two-lane road in 2025, which begs the question, do we really need a five-lane 80 foot wide road improving accessibility and mobility. Ease of access and safety are other stated goals. The average accident rate is below the state average, and accident severity PH-4

PH-3 Local roads would be paved along realignments that were made necessary by the project and at intersections. However, improvements to local roads beyond necessary realignment would be the responsibility of the county.

PH-4 A four-lane roadway, as proposed, is necessary to meet the purpose and need of this project.

is similar to other Montana national highway systems. The truck accident severity rate is 2.7 times the statewide average.

That is a direct quote from the scoping report. The state highway department has to maintain the existing road anyway. There will be two roads, unless only the existing route is expanded. Railroad related access control is needed to alleviate unsafe conditions at many private at-grade crossings. Only expanding the existing route and moving the railroad addresses this problem. I think these are factors that really have to be looked at. Do we really need this huge road,

PH-5

PH-6

PH-7

and is the capacity there? There is no major population south of Laurel for about how many thousand miles?

MR. ATKINS: I'm Bob Atkins. I live at 4237 U.S. Highway 310, Joliet, and my property is at 4270 Highway 310. And the proposal on 5B, it shows removing my access off of Highway 310, going to an alternate off of Brush Road, coming back on the frontage road. This is not feasible, and I disagree with it totally.

PH-8

A suggestion in talking to Gary yesterday, that if we close my access, where it is now, that we move it farther south in common by the access going to Rock Creek Campground. I would suggest his proposal, and

PH-9

PH-5 Yes MDT will maintain the old and new highways.

PH-6 Moving the railroad is not practical. Reduction of high-speed traffic volumes on the existing route would contribute to safer private railroad crossings.

PH-7 A four-lane roadway, as proposed, is necessary to meet the purpose and need of this project.

PH-8 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Alternative means to provide access to your business will be discussed with you and will be considered during detailed design.

PH-9 A shared or double access is an option here; however, final access would be determined during the design phase of the project.

would be glad to talk to anybody about it.

Another question that has been brought up is communication. We have -- many of us has sent comments to the engineering company over the past few years. No reply. Between now and December 2008, boy, keeping that web site updated and posted will be a great help to all of us.

PH-10

A major concern between now and when this road is built, what are we going to do with

our property knowing that 5B is a proposal, which is acceptable with me. But in December 2008, this is cast in stone. Can we move forward with this proposal with our future plans? A reply back on that to all of us is very utmost important so we can go on with our lives.

PH-11

I guess with that, just the communication on the web site and maybe a posting in the newspaper or the Billings Gazette or something once in a while will let us know that we know you're doing your job. But we just like to keep track of you. Thank you.

PH-12

MR. BARRETT: Any other comments?

MR. McNEW: My name is Tom McNew, and I have got the Exxon convenience store out there at Rockvale between the junctions of Highway 212 and 310. I studied your preferred design going right there at the junction, which was already mentioned here tonight. That access

PH-13 (cont.)

PH-10 The website will be kept up-to-date.

PH-11 The Final EIS and the Record of Decision will identify the alternative to be built. Alternative 5B was identified in the Draft EIS as the preferred alternative, but no formal decision can be made until the Record of Decision is issued.

PH-12 The website will be kept up-to-date.

PublicHearing_Transcription-12-11-07.txt

road right there would hurt us deeply between me, Qwik Stop Drive-in, and Fort Rockvale.

As far as the local people, they would be able to figure out how to get to us with no problem, but that's only half our business.

7

The other half of our business is that we do deal with travelers, and they don't have -- they wouldn't have no idea what that access road would be all about until they got right even with us, and then they'd just keep on going down the highway.

This access road and closing all of our approaches out there would hurt us deeply, as we all depend on that highway for our livelihood. So my proposal to that is to take the north end approach between myself and the Qwik Stop Drive-in, and have a left turn signal -- left turn signal there on -- where you have your raised median, and also to leave all approaches open. The other two approaches, that could be for traffic that's heading either toward Red Lodge or heading south.

Another idea that I had here is with Brush Road you are going to take Brush Road and push that north there like quite a ways. If you had a left turn signal there at our north end approach, then you can take Brush Road and line that up with that approach

PH-13 (cont.)

Page 6

PH-13 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestions of turn signals, no raised medians and variations on the location of Brush Road will be considered during detailed design.

there. This is all I got. Thank you.

MR. BELL: Hi. I'm Todd Bell. My address is 101 Rockvale Road. I own the Fort Rockvale Restaurant and Casino there. I tend to agree with Tom as far as the raised concrete access going through the middle of the highway there would be very hard to -- for traffic to turn into all of those businesses. I guess I fail to see the need for the raised median strips going through there. It's going to be devastating to those businesses. The way it is trying to make the traffic flow, move through there, is a lot faster, and we need to do what we can to try to preserve business there. PH-14

I know there has been an intersection, particularly at Rockvale, for over 100 years that has worked great even before there was paving. We have pictures, in fact, in the restaurant to show that particular intersection from over 100 years ago when it was just a gravel road, and I know it worked great then. And over the years there has been some improvements in paving and what have you, but I think we need to maintain that intersection at Fort Rockvale as it is and try

to preserve business there at Fort Rockvale. Thank you.

PH-14 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns will be considered during detailed design.

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MS. PINKERTON: Eileen Pinkerton again. You've got my information. The other thing -- I wanted to say this on the record about this spring formation in the bluff along the river. You can go out and look at them right now from the north side, and you can see huge icicles formed all along that south side along -- on Kaughman's place. I don't know the exact legal description of it. And on our place there are at least six springs. They feed livestock operations and the house, and I know our neighbors also draw from the spring that ours is on.

And I do not think that has been addressed adequately in this environmental impact study, and I think that affects the environment of every person further down the Yellowstone River in terms of if there were a major diesel accident up there and that pollution got into the water. We all drink the Yellowstone River. Everybody downstream drinks the Yellowstone River water, and I think that that is a huge, huge problem.

PH-15 (cont.)

10

If you're concerned about little wetlands, cattails in the ditches along the roads, and you can't move those, how can you not be concerned about springs? The alluvial formations that they come from are fragile, fragile things, and I do not understand why

Page 8

PH-15 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected.

this issue is just casually dismissed. And I expect a major, major answer to that question.

PH-15 (cont.)

MR. McNEW: This is Tom McNew. I just want to put an addition onto my last comments. With the left turn signal at the northern approach and all the approaches left open, I feel like we wouldn't even need that service road then out front.

PH-16

And another thing, you put that service road back behind Fort Rockvale, that's where he put his brand-new septic system, and I don't know how you could build a road over a septic system, which would be very hard to relocate. Thank you.

PH-17

MR. FISHWEIL: Well, I'm John Fishweil (ph.) at the Qwik Stop Drive-in. I just want to say we agree with Todd and with Tom that we need through access. I don't have a solution at this point tonight right now, but we need

PH-18

the traffic. We need easy access, easy back onto the road, because that's our life blood. We don't have those people coming in, we're going to suffer business-wise big time. So I appreciate your concern and what you can do to help us out.

MR. BARRETT: Any other comments? Going once, going twice --

MS. FITZGERALD: Okay. I'm Velma Morris Fitzgerald, owner of Rock Creek Campground, which is just south of the intersection at

PH-16 A signal is not currently under consideration and is not warranted.

PH-17 During the design phase, impacts to existing private infrastructure such as septic systems will be avoided whenever possible. Mitigation for unavoidable impacts will be negotiated with the landowner on a case-by-case basis.

PH-18 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns will be considered during detailed design.

PublicHearing_Transcription-12-11-07.txt

Rockvale. And while the highway will not be going past my place for the enlargement at this time, anything that you do with the businesses' access in and out of the businesses right at the intersection of Fort Rockvale, all of that business, the Qwik Stop and the service station, all of the businesses there, that -- it's so important to keep it in and out for my business, and also for all of the traffic going to and from Wyoming. PH-19

If we cannot have our customers stopping at that area for business, they will continue going straight out of the state of Montana into Wyoming, to Cody and Thermopolis. And I

speak from experience. They do that absolutely, or they will go straight up through Red Lodge into Yellowstone Park. We will lose all of that business, and it will be my neighbors and their businesses, but also my little camp ground business. And I speak for all of us. I'm sure we would like to be able to maintain that. It's so wonderful and convenient for all of the people who stop there and come back as repeat customers. Thank you.

MR. BARRETT: Any other comments? Going once, going twice. I think we're done. That concludes our public hearing. Thank you so much for coming out this evening.

PH-19 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion to provide easy access to encourage travelers to stop will be considered during detailed design.

(Whereupon, the hearing concluded at 8:34 p.m.)

CERTIFICATE OF COURT REPORTER

State of Montana)
ss:
County of Yellowstone)

I, Susan Shanstrom, R.P.R., and Notary Public in and for the State of Montana, residing in Billings, Montana, do hereby certify:

That I was duly authorized to and did report the foregoing hearing; that the hearing was taken at the time and place stated on the caption hereto; that the hearing was taken in shorthand by me and subsequently reduced to writing under my direction; that the foregoing is a true and correct transcript of the hearing.

I further certify that I am not counsel, attorney, nor relative or employee of any party, nor otherwise interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal this 14th day of December 2007.

No comments were delineated for the part of the transcript shown on the facing page.

SUSAN SHANSTROM, R.P.R., and
Notary Public, State of Montana
Residing in Billings, Montana
My Commission expires 8-21-08

No comments were delineated for the part of the transcript shown on the facing page.

December 11, 2007

email
retiredmrlvpo@tctwest.net

34 Antelope Ridge Ln

Silesia, MT 59041

Subject: Rockvale Laurel proposed highway

To whom it may concern at Montana Dept. of Transportation:

My concerns or comments are relative to the use of Farewell Road as a feeder route to the proposed new highway.

It is reasonable to assume that the traffic levels at the Farewell intersection will be at least as heavy as the Silesia intersection is now and probably higher. With that in mind:

1) Will you pave Farewell from Silesia out to the new road? It's washboard and dust now. R1-1
2) Will you fence Farewell road? It's open range with cattle on the roadway now. R1-2
3) How will livestock movement between pastures along Farewell road on both sides of the new road be accommodated? R1-3
4) Machinery moves along Farewell road, will the new highway intersection have an island to hold this machinery between the lanes of traffic? R1-4

Sincerely,

John L. Grewell

John L. Grewell

R1-1 A paved, realigned US 212/Farewell Road Intersection would be provided. However, improvements to Farewell Road beyond any necessary realignment would be the responsibility of Carbon County.

R1-2 Fencing would be provided at the US 212/Farewell Road Intersection and along the realignment only. Fencing improvements to the remainder of Farewell Road would be the responsibility of Carbon County.

R1-3 This would be worked out with the landowner on a case-by-case basis.

R1-4 An 11-meter (36-foot) refuge is planned at the US 212/Farewell Road intersection (see Figure A-2).

December 9, 2007

TO: MONTANA STATE HIGHWAY DEPARTMENT

SUBJECT: GRAVEL

We have a supply of gravel which might be used in the new construction of Highway 212 South. We are located one-half mile south of the railroad trestle near Laurel. R2-1

If you are interested in checking this source, please call [redacted] or check in at our residence at 2211 Hwy 212S.

Richard Bell

Richard & Jena Bell



Mr. Dick Bell
P.O. Box 244
Laurel, MT 59044

R2-1 Comment noted. Thank you.

Montana Department of Transportation

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Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4-1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007**.

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

Name and address (Include both physical address and your email address):

Bruce Pinkerton
3340 Grigsby Dr.
Billings, MT. 59102 crwbp@bresnan.net

Comments: SAFETY: Truck Accidents occur on this highway due to the 70 mph designation for cars & truck speed limits. Many times the # of Accidents will go down!

Springs: Many springs emanate from the bluff along the S. edge of the Yellowstone R. What is being done to abate the possible loss of these springs?

R3-1

R3-2

Isn't widening the present Highway to 3 lanes the cheapest way to meet all these needs?

R3-3

I have great concern for the effect of this project on the springs →

R3-1 Speed limit changes are beyond the jurisdiction of Montana Department of Transportation. Modifications are requested by the local jurisdiction, a speed study is conducted, and the Transportation Board then must take action. *Section 1.3.4, Accident History and Safety,* discusses the historical accident data for the project area.

R3-2 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected.

R3-3 A two-lane roadway with intermittent passing lanes was evaluated specifically for this section of highway in the project study area and eliminated from detailed analysis because it did not meet the purpose and need of the project (see *Section 2.5, Alternatives Considered but Eliminated from Detailed Analysis*).

THAT FLOW FROM THE SLUDGE ON THE S. SHORE OF THE Yellowstone R. There are DOZENS if NOT HUNDREDS OF SPRINGS THAT will be affected By THIS.

I am concerned with the effect of THIS PROJECT on No. White Horse Beach IRRIGATION CANAL. How will we irrigate our parcel on the beach? How will our neighbors be able to get water? R3-4

I am concerned with the AMOUNT of prime AGRICULTURAL LAND TAKEN OUT OF PRODUCTION By THIS PROJECT. R3-5

R3-4 The project would not affect the ability of current users of irrigation facilities to continue using their facilities. Where impacted, irrigation would be relocated outside proposed right-of-way.

R3-5 *Section 4.2.2, Build Alternatives,* discusses the proposed project's impact on agricultural land and points out that an analysis was performed for each alternative in accordance with the Federal Farmland Protection Act. During final design, every effort will be made to further reduce the amount of agricultural impacts.

Montana Department of Transportation

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Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

FLOYD L. BLANK
22 VISTA LANE
LAUREL, MT 59044

Comments: PLEASE SEND ME A SET OF THE COLORED AERIAL PHOTOS (PAGE SIZE) LIKE THOSE IN THE DEIS PLUS THE MAP OF "ALTERNATIVES CONSIDERED". Address as above!

-Thanks

Floyd L Blank

R4-1

R4-1 The colored aerial photos requested were sent to Mr. Blank on August 7, 2008.

12/17/2007 21:17 14069624004 SCHENK CONST INC PAGE 01

Montana Department of Transportation

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Comment form

MASTER FILE COPY

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4-1(21)43 – Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

Cliff & Debbie Schenk
143 GRAPEVINE ROAD
SILESIA MONTANA 59041
REXX @ WILDBLUE . NET

Comments: PLEASE NOTE: BRUSH ROAD NO LONGER EXISTS. IT HAS BEEN CHANGED TO GRAPEVINE ROAD IN ITS ENTIRETY FROM ROCKVALE TO SILESIA. WE ACCESS 212 FROM GRAPEVINE @ ROCKVALE. WE ARE CONCERNED ABOUT THE NEW Approach and the ease of being able to turn South on to 212. WE ALSO THINK YOU ARE DOING The 3 Businesses a Huge disservice by eliminating the Center Turn Lanes as they Currently exist. With the Huge amount of funds that will be spent on this project there has to be a way to configure the median to accomodate these turn lanes.

R5-1

R5-2

R5-3

Thank you. Cliff Schenk

R5-1 Based on Carbon County information, the east-west county road at this location is signed as Brush Road. Grapevine Road is further east and runs north-south.

R5-2 The ability to turn south onto US 212 from Grapevine Road would not be restricted.

R5-3 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. Other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns will be considered during detailed design.

Montana Department of Transportation

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Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services,** at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

John - Evelyn Fischer
Quick Stop Drive-In 4297 Hwy 310
PO Box 191 Joliet MT 59041
john_evfischer@msn.com

Comments: Figure A-6

(1) New Business Access Rd is behind the 3 Businesses - need left Turn signal to get traffic heading South able to Stop!

(2) → Problem is People on highway comp. will not spend a lot of Time looking for access To the 3 Businesses

(3) Re Align Brust Rd direct Across Business So easy Access to us.

Please answer → Why have a median that Blocks the access? make visable and easy! Keep that median in front of Brust Store, south of Laurel.

John Fischer
Evelyn Fischer

R6-1

R6-1 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians and providing a signal to allow left turns will be considered during detailed design. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency.

Montana Department of Transportation

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Comment form

MASTER FILE COPY

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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

Name and address (Include both physical address and your email address):

Russell + Daryl Jurkovich
4499 US Hwy 310
Silesia, MT 59041

Comments: You said you will try not to disturb any spring water, but what happens if you do change or contaminate any water sources? We have multiple springs on our property, one of which supplies water to our houses.

R7-1

R7-1 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected. Any negative changes to the water source on your property, including contamination, that would be a direct result of the project construction, should it occur, would be remedied by MDT.

RECEIVED
DEC 17 2007
ENVIRONMENTAL

Montana Department of Transportation
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Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

Tim Blanchard
17 Bus Lane
Laurel, MT. 59044
F102Tim@AOL.Com.

Comments: My opinion is that alternative 5 would be the best way to go. R8-1

R8-1 Comment noted. Thank you.

From: Sheri Anttila
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Friday, December 14, 2007 7:11:00 PM

Vern W. and Sheri L. Anttila
79 South Whitehorse Road
Laurel, Mt. 59044
[redacted]
vanttila@imt.net

Comments: After reviewing the Draft EIS, we feel that Option 5B is the best alternative. As we currently own the Old Whitehorse School as our primary residence, R9-1

Option 2 would place our home in the middle of an offramp. That is unacceptable living conditions. If Option 2 were selected, it would require the purchase/removal of at least a dozen new homes since the initial estimate in 2000.

In the interim, a visible law enforcement presence on Highway 212 and strict enforcement of the existing speed limits during normal commute hours, would greatly improve traffic safety and reduce the number of accidents. Currently the speed limit of 70 mph on a narrow 2 lane highway with a truck limit of 60 mph could very well be the cause of the several truck/car accidents. If the speed limit were 60 mph across the board, there should be fewer slow moving vehicle accidents. R9-2

R9-1 Comment noted. Thank you.

R9-2 Speed limit enforcement and changes are beyond the jurisdiction of Montana Department of Transportation. Modifications to speed limits are requested by the local jurisdiction, a speed study is conducted, and the Transportation Board must then take action.

From: Darin Foote
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Tuesday, December 11, 2007 10:01:20 PM

To Whom It May Concern:

In reviewing figure 2-5 of the draft EIS the overlay picture is not current. Since July of 2000 the West Bench of Whitehorse South Road has been subdivided into numerous lots and to date approximately half of which have been sold or built on. Although not all houses on the west bench will not be impacted equally, real estate comparisons can affect property values on the west bench as a whole. I am requesting adequate consideration of these new houses on Bus Lane, Quinn Way, and Rocky Point Road in the final EIS. Specifically I would the following to be addressed in the final EIS for these houses: R10-1

- Irrigation Systems (Whitehorse Canal) R10-2
- Visual Impacts: The DEIS is laden with "where feasible" and "if possible" statements regarding the state and federal agencies obligation to mitigate of visual impacts. What specifically is the plan to avoid the adverse visual impacts of a highway moving closer to existing houses on the West Bench Area around South Whitehorse? R10-3
- Noise: Again, the DEIS has similar statements regarding the state and federal agencies obligation to mitigate noise impacts. What is the projected noise impact and what is the plan to mitigate noise for existing houses in the West Bench Area around South Whitehorse? R10-4
- Groundwater Impacts to local wells R10-5

Thank You,

Darin Foote
22 Bus Lane
Laurel, MT 59044

R10-1 New developments and residences were identified in the project area. Relocation impacts were re-assessed in *Section 4.4, Transportation Right-of-Way and Relocations*, and the noise analysis was redone in *Section 4.9, Noise*. Modified figures include Figure 2-5 and Figures 2A, 2B, and 2C in *Appendix D*.

R10-2 The project would not affect the ability of current users of irrigation facilities to continue using their facilities.

R10-3 As stated in the Draft EIS, the roadway would alter the existing landscape, including views from residences. The degree of visual change would be different from each viewing location. Techniques will be developed during final highway design to minimize the visual effect resulting from larger features such as bridges and road cuts.

R10-4 *Section 4.9, Noise,* provides the details for a noise study that lists the impacted residences and considerations for noise abatement.

R10-5 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to groundwater are not expected and, therefore, would not affect the local wells.

From: Robert Barnard
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Friday, November 23, 2007 2:08:09 PM

---

can you send me the map showing where the road will be going between Laurel and Rockvale. R11-1

We live on Whitehorse bench next to the Whitehorse ranch owned by Larry and Marie Hart. Will the road come through part of the Whitehorse Ranch? R11-2

Robert Barnard
155 Whitehorse Ranch Road
Laurel,MT. 59044

bpbarnard@yahoo.com

Get easy, one-click access to your favorites.
Make Yahoo! your homepage.
http://www.yahoo.com/r/hs

R11-1 MDT sent the requested information on November 27, 2007.

R11-2 Yes, the preferred alternative would go through Whitehorse Ranch property.

From:	Fire6,
To:	mdtcommentsrockvaleeis@mt.gov;
cc:	Alters, Steve/CIP; Knight, Jen/BOI; Fire6,; tfork@hotmail.com;
Subject:	Public Comment on Rockvale to Laurel Draft EIS
Date:	Wednesday, December 26, 2007 11:38:28 PM

Dan Smith, P.E.
Acting Bureau Chief
Environmental Services Bureau

In regards to the construction of the new improved 4 lane highway between Laurel and Rockvale, I have a few concerns, questions, and comments.

I live at 1934 Hwy 212, (just south and west of the BN railroad trestle.) My parents, Dennis and Martha Kroft, live at 1835 Hwy 212 (just north and east of the BN railroad trestle.)

Having lived on this stretch of the highway since 1984, my family has heard much talk of this eventual highway expansion. Bruce Barrett can verify our constant contact with him for the past 15+ years. For the last 10 years, this topic has directly affected my living arrangements.

In 1997, with rumors of an impending highway project I hesitated to build a conventional home on the family ranch. Not knowing when, where or what this new highway would look like, I built a modest 2 bedroom apartment with attached shop and beauty salon close to

No comments were delineated for the part of the letter shown on the facing page.

my parent's house. The highway discussions died down.

In 2002, having outgrown the apartment, I sought a site for a home. I had a well drilled. Once again the highway project discussions surface, this time with an EIS and projected dates.
I once again hesitated to build and waited to see the project unfold. The discussions again died down.

In 2004, after waiting two more years, I needed to find a solution for my growing family. That fall I bought the former Merritt and Thelma William's residence, my current address.

This met the need to stay close to the family ranch and offers enough space to build an attached salon for my wife's business.

Once again the highway discussions are front and center and the current proposed routes will have a significant impact on me and my family.

For 10 years I have lived "a stones throw away" from my family's ranch to stay involved with its operations at various levels. It seems very evident that my parent's ranch will be severely impacted. With this, I will no longer have immediate access. When my father does relocate on the property, there will be a major obstruction between our properties which will hinder operations.

The proposed routes indicate my current approach onto ↓ R12-1 (cont.)

R12-1 During final design each affected landowner will be contacted to ensure that reasonable access to their property is maintained.

Hwy 212 will be eliminated. This causes many concerns.

First, it will bring about a new approach which accesses my property from the rear instead of from the front.

Secondly, it will result in having to cross an uncontrolled railroad crossing.

Thirdly, it will move my children's bus stop from the end of the driveway to about a half-mile away, including the uncontrolled railroad crossing.

Fourthly, it will force my wife's salon customers to have to cross the unpredictable railroad route, interfering with scheduled appointments and possibly increasing potential injuries.

R12-1 (cont.)

Fifthly, it will decrease my property value due to the proximity of the new road and how it affects my property access.

R12-2

I have several questions in no particular order.

How is property value addressed with those affected?

What distance is established as being too close for a residence to remain in proximity to a new highway expansion?

R12-3

Why does it appear that where the existing 212 and the new road converge on the north end of the expansion that all options involve traffic being able to travel in one particular direction and then be able to access the opposite direction on the other road from which it was traveling.

R12-4 (Cont.)

R12-2 MDT does not compensate for changed property value. During final design, each affected landowner will be contacted to ensure that reasonable access to his or her property is maintained and that other impacts are minimized as much as practicable.

R12-3 Each property is evaluated on a case-by-case basis to quantify impacts as described in *Chapter 4*.

R12-4 Preliminary traffic studies indicate the potential need for full access at this intersection, and provision for these turning movements is reasonable. More detailed studies, including cost considerations, will be completed during final design that would establish the need, or lack of need for access to a particular direction of travel at this intersection (Old US 212 with the proposed alignment). The EIS presumes the need for a full-access interchange or intersection and has identified the impacts associated with these options.

For example, if a driver travels north on the existing 212 why is it necessary for them to be able to access the south bound new road? If that driver ultimately needs to drive south, he would more likely drive south on the existing 212 until it joins the next interchange to continue south on the new road. My point is they wouldn't drive 2 miles north on the existing 212 to the interchange then drive south on the new road. They would likely drive 1 mile south on the existing 212 until the next interchange then access the new road. They would shorten their trip by 4 miles!

R12-4 (Cont.)

The north bound lane of the existing 212 will need to tie in to the north bound lane of the new road. And certainly the south bound lanes of the new road need to tie into the south bound lane of the existing 212, but not vice-versa.

Why isn't it an option to leave the existing 212 railroad trestle underpass open for southbound traffic only? Making it a single lane south bound one-way would make it safer than its current two-way condition. Doing this would allow my approach to remain where it is with a minor possible adjustment. I'm not sure what an approach going north into and out of my driveway would look like or even if it is possible, but I'm sure I would favor it over relocating my approach from Wilkin's Road. I strongly oppose a new approach to my property involving a railroad crossing.

R12-5

R12-6

Please view the following option from the Draft EIS. Figure A-5d

R12-5 The existing railroad underpass does not meet current standards for safe sight distances and vertical clearance. Secondly, the roadway grades and intersection skew, where the proposed and existing US 212 join to the north of the proposed railroad overpass, and do not allow a connection to access the existing underpass. Modifications to keep the railroad underpass open and providing maintenance for access to a single parcel would not be feasible and would be too expensive.

R12-6 During final design, each affected landowner will be contacted to ensure that reasonable access to his or her property is maintained and that impacts to the property are minimized as far as practicable. In the case of Mr. Kroft's property, the configuration of the preferred intersection alternative would allow an opportunity to explore access options. During final design, options that avoid a railroad crossing will be explored.

ALTERNATIVES 1, 5A, & 5B
212/PTW INTERSECTION
OPTION 4

If an option like this is chosen, I would suggest an approach to my property onto the lane that underpasses the new expansion and continues onto the existing Hwy 212. R12-7

Something I haven't even seen addressed is the location and design of an approach into and out of the existing 1835 and
1835½ Hwy 212. R12-8

Obviously this residence gets eliminated, but the ranch does not, nor does its residents, my parents, Dennis and Martha Kroft. As of December 26, 2007 no one has contacted them to see where they plan to relocate. I would think that should be considered when the final design is to be chosen. Obviously they are going to need an approach. Currently they have 2 approaches off of Hwy 212, one primarily for access to the residences and one primarily used for agricultural purposes. This matter causes great concern because of the implications it has on my wife and me. As I mentioned before I am involved with the operations of the cattle ranch and 1835½ is a rental property as well as my wife's hair salon. We are <u>all</u> going to need access to this property. R12-9

At what point is an individual affected in a significant enough manner that that individual gets bought out?

R12-7 This access option would be feasible for intersection Options 1, 2, and 4 if Michael Kroft is the owner of both parcels.

R12-8 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. An access management plan will be developed during preliminary design, which will address access to this parcel.

R12-9 Relocation assistance will be provided by MDT in accordance with federal guidelines. Property owners will be contacted during final design to work out the necessary details.

I understand the need for this expansion to happen, and please don't get me wrong, I do support it. I believe it to be long overdue. However, I have concerns with how it will affect my family, property, livelihood and safety. I feel it necessary to continue an open discussion and will continue to listen to all possible options. R12-10

I request a written response to my letter and would like to have a face to face dialogue to express my concerns and clarify my questions and comments. R12-11

Thank you for you concern.

Respectfully,

Michael A. Kroft
1934 Hwy 212 S.
Laurel, MT 59044
[redacted]

R12-10 MDT will continue to coordinate on project issues with affected landowners.

R12-11 As outlined by the governing agency for environmental impact statements, the Council on Environmental Quality (CEQ), all responses to comments have been provided in the Final EIS document (*CEQ – Regulations for Implementing NEPA*, Section 1503.4, Response to Comments). Conforming with this approach allows MDT to ensure that everyone has equal access to information about the project and how MDT has addressed the public's concerns. During final design, each affected landowner will be contacted to ensure that reasonable access to his or her property is maintained and that impacts to the property are minimized as far as practicable. In the meantime, a request for a face-to-face meeting can be made through the MDT District office in Billings.

From: Mike Schweitzer
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Wednesday, December 26, 2007 1:05:19 PM

Mr. Tom Martin
Montana Department of Transportation
PO Box 201001
Helena MT 59620-1001
mdtcommentsrockvaleeis@mt.gov

Dear Sir,

We just learned of the proposed Rockvale to Laurel highway EIS a few days ago. We respectfully request extending the public comment period by 60-90 days. The EIS that we downloaded is 478 pages and took years to create. It would seem reasonable to permit interested members of the public to have time to review, digest and comment on the environmental impact of this major highway route change along the Yellowstone River. The timing of this two week public comment period over the Holiday season has increased the difficulty for communication with interested individuals. R13-1

We have not had time to evaluate this long detailed report in the few days we have had it over the Christmas Holiday. Please extend the comment period to allow us and others more time to review and make comments.

Thank you,

Mike and Jolyn Schweitzer
1927 Holstein Lane
Laurel, MT 59044

R13-1 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

From: Baker, David/BOI
To: nuttika@wildblue.net;
cc: Alters, Steve/CIP; "Studt, Mark"; Knight, Jen/BOI;
Subject: RE: Comment on Rockvale to Laurel Draft EIS
Date: Monday, December 24, 2007 2:43:32 PM

Keay,
Thank you for your comments. I'll try to address your questions in this email.

1. How access will be provided to the Nutting Farmstead House and the impact of that new access to the context

At this time, access specific to this house has not been determined. Access may be by 'right in/right out' directly to the new roadway, or by frontage road north to the proposed intersection with the existing roadway (see Figure A-18 in Appendix A). Approach details would be developed during the design phase of the project.

2. Explain the numbers in the draft document to my satisfaction, I don't believe they make sense.

*I believe the distances pertaining to the existing edge of pavement in the determination of effect to be incorrect. The main house is located approximately 210 ft from the **existing** edge of pavement, 230 ft from the **existing** roadway centerline and 220 ft from the **proposed** edge of pavement of Alternative 5B (the proposed edge of pavement would be located further away from the main house than the existing edge of pavement). The necessary Right of way is not yet determined, Alternative 5B would require minimal right of way, if any, in front of the main house. Approximate distance to a new right of way from the main house would be 168 ft. This will be corrected in the FEIS.*

3. Additional information on the impact to all my property not just the house and outbuildings.

Alternative 5B would impact parcels 1-9 and 12 of the undeveloped Hughes Orchard Tract and then would enter Hanna's property to the north.

4. Explain how access will be provided to the Jeanne Rizzotto and Audrey Waddell and in the future my 320 acres.

Access specific to parcels, especially those that are not adjacent to the alternatives, has not been determined. Reasonable access would be maintained to existing parcels adjacent to the highway, but would not be determined until the design phase of the project (also see Section 2.2.3 Access Management)

I hope this helps, let me know if you have any other questions.

Sincerely,

No comments were delineated for the part of the letter shown on the facing page. Comments are addressed below where the commentor summarized the comments.

David L. Baker, P.E.
CH2M Hill
322 East Front Street
Suite 200
Boise, ID 83702

From: Keay Nutting [mailto:nuttika@wildblue.net]
Sent: Thursday, December 13, 2007 10:14 PM
To: mdtcommentsrockvaleeis@mt.gov
Cc: Alters, Steve/CIP; Knight, Jen/BOI
Subject: Comment on Rockvale to Laurel Draft EIS

My name is Keay Nutting. I live at 4339 US Highway 310, Silesia, MT 59041. I am the sole proprietor of the Nutting Farmstead, which includes the Nutting house, outbuildings and 474 acres that was a part of the Nutting Trust and an additional 320 acres behind the 474 acres.

I am a fairly new owner of the property (I took ownership in April of 2006 of the House, outbuildings and 474 acres) , although I grew up in the house and on the property. Mona Nutting, who was trustee of the property earlier in your discussions, has not communicated any of the information that she may have gotten from MDOT with me or any of the other remainderman of the trust. The trust was recently dissolved and I am now the sole owner of the property above.

My phone # is
My cell phone # is

My email is nuttika@wildblue.net.

I live at the Nutting farmstead that is noted as a Significant Cultural Resource in the Draft Environmental Impact Study (24CB1642). In the Determination of Effect sections, it states that the existing pavement edge is 361 feet from the farmstead and the existing centerline is 373 feet from the farmstead. It also states that the proposed R/W boundary would be 262 +_ feet from the Nutting farmstead. This to me would indicate that the new R/W would take at least an additional 100 feet. It does say the centerline would move away from the farmstead, but by taking an

No comments were delineated for the part of the letter shown on the facing page. Comments are addressed below where the commentor summarized the comments.

additional 100 feet of right of way and making the highway a 4 lane compared to a 2 lane the setting of the Nutting farmstead would be significantly affected from a sound standpoint and a visual standpoint.

,

The numbers (361 to pavement) noted in the study do not seem correct. I believe that the pavement edge is not currently 361 feet from the front of the house but perhaps 100 feet closer. If the measurement is from some other reference point other than the front of the house, that is not at all clear. It is also very unclear to me how access to the farmstead would be provided and how that new access might affect the property its context and setting. It is very difficult for me to believe that a change from a 2 lane highway to a 4 lane highway and having to provide new access which would include increased R/W requirements of 100 feet from the property could possibly be considered no substantial change. The noise level and visual impact would be significant if traffic increases as expected.

The farmstead is more than just the house and immediate outbuildings. It also includes the agricultural property around it, which includes the 474 acres. The current 5B alternative cuts through an irrigated portion of this 474 acres and it is unclear to me how much more of the eastern border of my property will be affected and how that affects the context of the historic site.

The corner of the property the road appears to impact most is, from an agricultural standpoint and also from a development standpoint, the most appealing. This 5B alternative will cut through irrigated property and make the current fields so much smaller that it will make them difficult if not impossible to farm with modern farm equipment. If the property can't be farmed then it would be ideal to develop, but this proposed will cut through the property that would be best for development. There is an platted 120 acre subdivision called Hugh's Orchard Estates that was platted in 1914. The current 5 B would also go right through this platted subdivision. I will attach a copy of the plat in this email along with another excel document, which shows Audrey Waddell's, Jeanne Rizzoto's current easement and the where the newly build road is. The excel document also shows where the platted subdivision is.

The 5B alternative cuts across a 60 foot easement and road that has recently been put in. It is unclear to me how the county road which is also part of the access to these properties will be affected. This road is the only legal access to Jeanne Rizzotto's 320 acres, Audrey Waddell's 240 acres

No comments were delineated for the part of the letter shown on the facing page. Comments are addressed below where the commentor summarized the comments.

and planned access to an additional 320 acres that I own.

Additional information is needed so that affected parties can comment appropriately (Jeanne Rizzotto, Keay Nutting and Audrey Waddell) regarding access to the acreage noted in the prior paragraph.

I want the people at MDOT to contact me personally prior to the Dec 26th so that I have a chance to complete my comments once I have more information.

I need to know prior to comment period ending:

1. How access will be provided to the Nutting Farmstead House and the impact of that new access to the context | R14-1
2. Explain the numbers in the draft document to my satisfaction, I don't believe they make sense. | R14-2
3. Additional information on the impact to all my property not just the house and outbuildings. | R14-3
4. Explain how access will be provided to the Jeanne Rizzotto and Audrey Waddell and in the future my 320 acres. | R14-4

Things that need to be addressed in final EIS

1. How access will be provided to my dryland property, Jeanne Rizzotto's and Audrey's Property | R14-5
2. Determine the risk/affect of impacting the 120 acre platted subdivision | R14-6
3. Determine how access will be provided to Nutting Farmstead (house and outbuildings) | R14-7
4. Determine and mitigate any affect (including sound and visual impact) to Historic Nutting Farmstead including the farming aspects. | R14-8

R14-1 At this time, access specific to this house has not been determined. Access may be by "right in/right out" directly to the new roadway, or by frontage road north to the proposed intersection with the existing roadway (see Figure A-18 in Appendix A). Approach details would be developed during the design phase of the project.

R14-2 Only the main residence at the Nutting Farmstead was found eligible for the National Register of Historic Places. It was determined eligible under Criterion C for its structural and architectural integrity. The rest of the homestead buildings on the site were determined ineligible for the National Register of Historic Places (NRHP) because of lack of integrity. Generally, when we evaluate historic properties such as this one, the surrounding acreage is taken into account. In this case, there had been too much loss of integrity for a good connection to be made in that respect. The house on the site did meet the National Register criteria. The distances pertaining to the existing edge of pavement in the determination of effect (see *Appendix H*) are incorrect. The main house is located approximately 210 feet from the **existing** edge of pavement, 230 feet from the **existing** roadway centerline, and 220 feet from the **proposed** edge of pavement under Alternative 5B (preferred) (the proposed edge of pavement would be located further away from the main house than the existing edge of pavement). The necessary right-of-way has not yet been determined. Alternative 5B (preferred) would require minimal right-of-way, if any, in front of the main house. Approximate distance to a new right-of-way from the main house would be 168 feet. MDT Historian Jon Axline reviewed the corrected numbers and determined that it is not sufficient to change the determination of effect (see *Appendix H*) approved by the Montana State Historic Preservation Office (SHPO) with regard to the historic Nutting Farmstead.

R14-3 Alternative 5B (preferred) would impact parcels 1-9 and 12 of the undeveloped Hughes Orchard Tract and then would enter Hanna's property to the north.

R14-4 Access specific to parcels, especially those that are not adjacent to the alternatives, has not been determined. Reasonable access will be maintained to existing parcels adjacent to the highway, but would not be determined until the design phase of the project (also see *Section 2.2.3, Access Management*).

R14-5 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project.

R14-6 Alternative 5B (preferred) would impact eight parcels in Hughes Orchard Estates. Parcels affected by each alternative are identified in *Section 4.4.2, Build Alternatives*.

R14-7 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project.

R14-8 In recent consultation, SHPO concurred with the MDT in finding that the proposed project would have "no effect" to historic resources. The noise analysis and impacts to the buildings in the project area are discussed in the document in *Section 4.9, Noise*. Noise impacts would be dealt with in accordance with MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual* (2001). *Section 4.19, Visual Resources,* discusses the visual impacts and mitigation. Techniques will be developed during final highway design to minimize the visual effect resulting from larger features such as bridges and road cuts. *Section 3.17.4, Site Descriptions,* and the response to Comment R14-2 discuss the historic features of the Nutting Farmstead, and explain why the land is not recommended for NRHP listing. Acquisition for right-of-way use would not affect the ability to farm the property.

From: Priscilla Bell
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Monday, December 24, 2007 1:04:18 PM

We live at 167 Whitehorse Ranch Rd. The proposed highway cuts across our access road in two places, including at the corner of our neighbor's property. We would like to suggest that it be moved West a little ways (1/2 way in between our houses and Larry Hart's) so that neither side is so close. We would prefer you using the #1 route as it appears to impact less people. It does not make sense to us that with all of the possible routes, you are putting the road right in front of our houses and that you will have to create a new access road for all of us to use. We are also concerned about the noise level with the highway being so close to our homes. The subdivision we are in was there before the proposal was initiated. We have at least one spring on our place, and we do not know if the impact of the road on our spring has been researched. R15-1 R15-2 R15-3 R15-4

Thank you,

Wayne & Jeryl Schneider

R15-1 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project.

R15-2 Comment noted. Thank you. Your comment will be considered during the selection of the preferred alternative and during development of the Record of Decision.

R15-3 The noise analysis and impacts to the buildings in the project area are discussed in the document in *Section 4.9, Noise*. Noise impacts will be dealt with in accordance with MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual* (2001).

R15-4 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected.

From: eileen pinkerton
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Wednesday, December 19, 2007 11:38:52 AM

Dear Sirs:

As a landowner on your "Preferred Route" along the bluffs of the Yellowstone River I have several issues with this road.

1. Extremely poor communication with affected land holders. We purchased our farm at 164 N. Whitehorse Road, Laurel MT in Octoberof 2003 from Dave and Elaine Head. They said they had not heard from you in response to their email expressing their concerns about the springs in the bluffs. We send a letter in February of 2004, which is attached. We also received no response. We have on email saying the DEIS is not out yet from about two years ago. R16-1

2. Your notification process is inadequate regarding the DEIS and the public hearing. We received a postcard on Dec 8th for the Public Hearing on Dec 11th with the comment period closing on Dec 26th. A show of hands at the meeting indicated that half of the people there had just received a postcard the day before. Yellowstone County Comissioner, Bill Kennedy, asked for an extension of the comment period. I am asking for an additional 90 days. This is a 478 page document that took you 7 years to compile and we get 15 days during the holiday season to look at it and comment on it? This looks like you are trying to slip a bad plan under the table to me. R16-2 R16-3

3. What traffic studies were done to show that drivers will use the preferred route? R16-4

4. What time of year were noise readings taken to determine noise pollution levels and mitigation? R16-5

5. Neither the Heads nor us were contacted when field studies were done. I would like to know if and when you were on our property and what you were doing there. Are all of the freshwater springs noted in the DEIS? Can you move freshwater springs? How will you prevent contamination from road bed runoff or a catastrophic accident involving toxic materials? This river is the water source for everyone downriver, including Billings. R16-6 R16-7

6.This part of the river has an ecological specialness that people traveling 75 miles and hour cannot appreceiate. It is a wildlife corridor for Moose, elk, blackbear, beaver, whitetail deer, mule deer, coyotes etc. The birds living and nesting along the river include Bald Eagles, osprey, wood ducks, white pelicans,

R16-1 Communication will be maintained through updating the website.

R16-2 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

R16-3 MDT has fully disclosed the project and its impacts through the National Environmental Policy Act (NEPA) process. The public will have another opportunity to review the document. Comments made on the Draft EIS have been considered in the development of the Final EIS. There will be an opportunity for public comment on the Final EIS once distributed and comments made on this document will be considered during the development of the Record of Decision.

R16-4 Traffic studies are detailed in *Section 1.3.2, Transportation Demand*, Section 1.3.3, *Traffic Operations/Level of Service*, and *Section 2.2.2, Typical Sections*.

R16-5 As stated in *Section 3.9.3, Existing Noise Levels*, noise levels were measured in October 2001.

R16-6 Property access was performed under a survey entry letter. Alternative 1 was surveyed/staked through what was then the Head property in May 2001. Alternative 5 was surveyed/staked through the same property in October 2002. Permission for recent hydrogeological studies of springs was requested but not given. Entry to this parcel was not made.

R16-7 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected.

corrmorants, Canadian geese, lazuli buntings, many species of raptors etc. It is also the last good trout fishery on the Yellowstone River. The Yellowstone is the last undammed major river in the lower 48 states.

7. This part of Yellowstone River is heavily used by boaters, floaters, hunters and fisherman from the largest population area of Montana. They will not be happy to loose this quiet part of the river. I haven't found anyone, not directly affected, who knows about this plan. R16-8

8. By moving the road and maintaining the existing highway, you have not addressed the safety issues that you have used to illlustrate a need for this project. You will still have too many railroad crossings, need for turn lanes, etc. Local people will continue to use the existing road. The new road will be extremely inconvenient for people on the west and north side of it. R16-9

9. You can move the road, but you cannot move the river. Once the wildness is gone, it is gone forever. I do not think you have the best route yet. It is probaly right through the Kaufman place on the west side of their house and continueing through the Sherman place to the south. You are trying to save two center pivots while trashing the Yellowstone River with your preferred route. The path of least resistance and most direct is right through those fields. When they are sold, they will be sold for development values and use anyway. The land values are already far above the possibility of running an economic farm operation. R16-10

Thank you for your time and consideration.

Eileen R. Pinkerton
3340 Gregory Drive West
Billings MT 59102

R16-8 MDT shares your concern regarding proper use of the environment. The environmental analysis presented in this document was prepared in accordance with NEPA as implemented for federally funded projects (42 U.S. Code [USC] 4321 et seq.) and the Montana Environmental Policy Act (MEPA) (Montana Code Annotated [MCA] 75-1-101 et seq.).

R16-9 Reduction of high-speed traffic volumes on the existing route would contribute to safer private railroad crossings and local traffic use.

R16-10 During the development of the alignments for screening multiple routes were considered and the relative impacts were compared. -The locations of the proposed alignments were presented to the public at the public meetings, and discussions were conducted with the affected landowners. The overall impacts are less with the currently proposed alignment than if it was moved to go through the agricultural land referenced.

RECEIVED
FHWA
MONTANA DIVISION

Frank Boring Fitzgerald
ROCKCREEK CAMPGROUND Manager
6 Fitzgerald Lane Rockvale
Joliet, MT 59041-9304
[redacted]
Email: quantumfitz@gmail.com

BEFORE THE
US DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION, AND,
MONTANA DEPARTMENT OF TRANSPORTATION

IN THE MATTER OF:	)	**FORMAL COMMENTS ENTERED**
Draft Environmental Impact Statement	)	**for US212 RECONSTRUTION**
for NH 4-1 (21)43 ROCKVALE-LAUREL	)	**ROCKVALE TO LAUREL**
(PPMS-OPX2 Control #4070) in Yellowstone	)	**DRAFT ENVIRONMENTAL**
and Carbon Counties, Montana	)	**IMPACT STATEMENT**

COMES NOW, FRANK BORING FITZGERALD and respectfully enters formal filing of comments in the above entitled matter in the public interest, convenience, and necessity.

These comments are specifically directed to the Rockvale environs of the Draft EIS in the above entitled matter and are not intended to address the Draft EIS at any other specific points. That remains for knowledgeable persons of those other points. However, upon careful study, it would appear Alternative 5B north and east of Rockvale meets with my unopposition. R17-1

I am making these herein comment and proposal in opposition to parts of the 478 page password secured Draft EIS, as presented on the internet, with my background of having resided at ROCKCREEK CAMPGROUND as Manager, with my wife Velma Morris Fitzgerald as Camp owner, continuously since 1995, and my having knowledge in the sciences to have written and published five theoretical physics papers.

On Friday night, December 21, 2007, another serious accident occurred at the same

R17-1 Comment noted. Thank you.

location as a previous accident on the curve of US212-US310 highway just northeast of the Rockvale community requiring transport services of a Medicopter.

We have seen far too many accidents on the existing highway route this Draft EIS addresses. It is a tragic display of a lack of timely attention to matters of life and death by the State. It should have been obvious many years ago, this Draft EIS was needed long before now. This speaks to the subject of an incompetent State structure. R17-2

A.

Drawing attention to the Draft EIS at the Rockvale area: There is to be found, particularly at pages 345 and 351, maps of proposed highway reconstruction involving the Rockvale "T" intersection of US212 and US310, and, its environs. If the State can pay attention on its maps to the need for arterial "stop condition" signs, it can also pay attention to traffic velocities and my proposed proper speed limits of 35 MPH, 45 MPH, and 55 MPH duly posted at appropriate locations drawn herein on my proposed Alternative 6 attached as Exhibit 1. And in addition, Alternative 6 proposes appropriately placed traffic directional signs. We have seen persons make U turns having gone, uninformed, the wrong way. Signs appropriately placed would be "CENTER LANE FOR LEFT TURN"; "SOUTH TURN CENTER LANE", etc. R17-3 R17-4 R17-5

B.

The Draft EIS does not pay attention to physics of a proper highway design as to proper radius of curvatures, particularly at turns, for heavy fully loaded long multi-sectioned trucks and RVs, instead only to lighter shorter vehicles. At the main "T" intersection in Rockvale, long bed, double long bed, 18 wheeler, towed recreational trailers towing a third vehicle, and double tanker trucks are now unable to safely negotiate the north path US310 to west path US310-US212 left turn at that intersection after stopping at the arterial stop. State Alternatives drawn on pages 345 and 351 are without long enough radius of curvature to safely accommodate such heavy west turning traffic. Particularly unsafe is the State proposed interference to R17-6 R17-7

R17-2 Comment noted. Thank you.

R17-3 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency.

R17-4 As noted above, many of the design details would be developed during the detailed design phase of the project. One of the most important considerations during the design of transportation facilities is safety, and your suggestions regarding proper signing are important and would be considered during the detailed design.

R17-5 As noted above, many of the design details would be developed during the detailed design phase of the project. One of the most important considerations during the design of transportation facilities is safety, and your suggestions regarding proper signing are important and would be considered during the detailed design, not only in the Rockvale area, but the entire project corridor.

R17-6 The proposed highway geometry has been laid out in accordance with MDT standards, which are based on nationally accepted geometric design standards. This includes consideration of the turning radius and off-tracking for all legal highway vehicles, including recreational vehicles.

R17-7 During the preliminary design stage, the US 212/US 310 Intersection layout would be finalized to accommodate a design vehicle appropriate for this section of roadway in accordance with MDT standards, which are based on nationally accepted geometric design standards. This includes consideration of the turning radius and off-tracking for all legal highway vehicles, including recreational vehicles.

turning westward presented by a raised median just west of the intersection on either maps. Any interference created by a median raised, or flat covered by yellow barrels with red reflectors, must be set in the highway far enough westward to allow a maximum radius of curvature of that turn for all traffic not just lighter vehicles. Alternate 6 proposes no raised medians but instead proposes a center left turn lane in addition to the Alternate 5B 4 lanes. R17-8

C.

The side-road, Map page 345, from west to east at the north of the Casino-Restaurant and its paved parking lot, is both an unsafe and virtually un-negotiable State design for a double tanker to reach and leave the Fuel-Convenience Store. The same applies to longness of towed recreational trailers towing a vehicle in need of services at Rockvale businesses. This is due to failure of the State to take into account the need for a large radius of curvature for such traffic at the far east entrance-exit of such side-road. There would be barely long enough turning radius at the northwest corner of that proposed side-road. Therefore, after careful study of the side-road and is positioning, it is my recommendation the side-road be deleted from any further consideration by the State on that one short-turn radius argument alone. There are other arguments such as failure of the State to recognize there often exists a spontaneity of need of motorists to enter those Rockvale businesses from the highway itself directly. The 4 lane concept of Alternate 5B is not enough to prevent State consideration of leaving those business entrance-exits as is, without closing them off. But incorporate highway-business access with a 5th lane the rest of the full length of Rockvale passing those existing entrance-exits, and, a reduction in speed limit to 35 MPH properly posted. Eliminate from consideration a median as raised anywhere in Rockvale per se. This brings Rockvale into the arena of a safe travel into and through Rockvale. A 5th lane, a from-into turn lane, gives drivers of double tankers and full length triple RVs options of deciding where to negotiate the beginning of a turn into an entrance. Reliance solely on the State creating narrow intersections for entrance-exit at those R17-9

R17-8 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns would be considered during detailed design. All medians, whether raised or flush with paint stripes would be located in such a manner that large vehicles needing to access the properties can properly navigate the turning movements.

R17-9 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns would be considered during detailed design. All tuning radii, whether they are on access roads or driveway approaches, would be designed to accommodate the type of vehicle that needs to access the business. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency.

businesses gives us reason to suggest now each such proposed intersection be wide enough to accommodate long length vehicular traffic. A speed limit of 35 MPH gives reason enough to suggest termination of any plans to create raised medians [along those business fronts] for lack of a safety reason to so raise. Otherwise, leaving it solely up to the State, as we have seen on P345 and P351, would require we be right back here trying to convince the State to post 35 MPH speed limit and to widen those created narrow intersections and remove raised medians opposing business fronts. Too narrow is the norm for the State in its creating rural intersections because it has no insight to consider long vehicular traffic, only short vehicles having much tighter turning radiuses. So the State should change its attitude and view the public interest, convenience, and necessity for wider intersections and a 35 MPH speed zone in Rockvale in particular, leaving it up to drivers to decide where to turn from a center 5th lane left turn. R17-10

D.

The best State choice, Alternative 5B, as proposed design of Rockvale, as well as the other State proposed Rockvale alternatives, such as on page 351, are badly in need of reconsideration. Proposed herein is Alternative 6 on its own map for a page 345B insert. Alternative 6 applies only to the Rockvale community and not to any other section of Rockvale-Laurel highway reconstruction. Alternative 6 would replace State choice Alternative 5B, as well at the other Alternatives, 1 through 5A at Rockvale. Alternative 6, map page 345B insert is attached herein as Exhibit 1. R17-11

Alternative 6, herein, removes the north east-west access side-road of page 345, Removes east-west raised median at all points through Rockvale of page 345. Moves any median [at the west end of Rockvale westward of the business areas] a necessary distance westward and then the median further west is covered with yellow impact barrels, having red reflectors. At the east end of Rockvale, heading northeastward, end the 5th proposed center lane into a widened median covered by impact yellow barrels with red reflectors then further northeast- R17-12 (cont.)

R17-10 Section 2.2.3, Access Management, describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency. Your suggestions for consideration of long vehicles is also sound and would be considered during detailed design.

R17-11 We appreciate the thought and ideas presented in your Alternate 6. Although, as you state, these suggestions apply only to the Rockvale community, the principals of adequate access, safety and accommodation of all vehicle types expected to be using the proposed project would apply to the entire project. The elements of your Alternative 6 are design details that would be considered in the detailed design phase of the project, and are applicable to all of the Build Alternatives discussed in the Final EIS.

R17-12 As pointed out above, for the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners. Your suggestion to modify and/or eliminate the proposed medians in the Rockvale area would be considered as a part of the design phase of the project.

ward end the barrels and gently lower the median to harmonize with the lower median farther northeast. Reduce or eliminate risk of head-on accidents on that curve to the east of Rockvale via that addition of the impact yellow barrels, having red reflectors, in the median instead of a raised or lowered median. Add the appropriate speed limit signs in that east-end area. That curve is where 2 serious accidents have occurred. This proposal, Alternative 6, instead of the State's choice of Alternative 5B, for Rockvale, would end the present risk of head-on. R17-12 (cont.) R17-13

Such impact barrels should be used on any curve in the median and at a bridge over-crossing pilings to lessen the risk of death in accidents. The insurance companies would also thank you for your consideration of impact barrels. R17-14

E.

On US310, now, at the southeast corner of the US212-US310 "T" intersection stands the Atkins Used Tractor Lot with its present entrance-exit on the US310 highway. To the south of Atkins stands RockCreek Campground with its present entrance-exit access to US310 at the Camp's northwest corner. Apparently, Alternative 5B would leave that Campground entrance-exit as is. Alternative 5B would close Atkins access to US310 at its present location and establish a narrow side-road on his northeast corner to access re-routed Brush Road. Such narrow alternate road access for Atkins of Brush Road denies the realities of heavy long bed trucks needing access thru large radius of curvature which are not provided on Alternative 5B. The present wide access is adequate from existing US310. On Alternative 6 proposal, it is agreed between Atkins and the Camp his present access to US310 be closed but a new access be estabied at to his southwest corner adjacent, next to, and parallel to the Camp present access. Two cottonwood trees would have to be removed so as the elevation of the two access lanes would not be in conflict. We have agreed to negotiate the exact placement and widths of our two accesses to US310. We have to consider the easements the utitlity companies have: five easements on the east side of US310 boundary for Oil Pipeline, Natural Gas, Buried Phone Cable, R17-15 R17-16

R17-13 As pointed out above, for the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. Your suggestions to provide a positive barrier in proposed medians in the Rockvale area and to reduce the speed limit would be considered as a part of the design phase of the project. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency.

R17-14 As pointed out above, for the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. Your suggestions to provide to a positive barrier in proposed medians for traffic separation and crash protection at obstacles such as bridge pilings would be considered as a part of the design phase of the project.

R17-15 *Section 2.2.3, Access Management*, describes the purpose of access management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion to modify the access to Atkins Tractor and combine it with the access to the Rock Creek Campground would be discussed with all affected land owners during detailed design.

R17-16 Once detailed design commences, coordination with land owners and utility companies would be conducted. Specific information on utilities as you have provided here is extremely important for the project. During detailed design, existing utilities would be avoided wherever possible, and where relocations are necessary, the optimum locations would be determined with the utility owners and the adjacent land owners.

Buried Fiberoptic Cable, and the overhead Electric Power Lines. On the east of the US310 highway boundary on our respective properties lies one 20 foot easement that of a second Oil Pipeline. The present 5 foot easement for Rockvale Ditch Company, Inc., will be abandoned due to all ditch water rights having been sole and the Company will cease to exist. Atkins and the Camp could, if required, petition the State to provide a double wide access for use by both Atkins and the Campground with our mutual east-west property line down the center of the access. This double wide access gives both Atkins and the Campground greater entrance-exit ability for wide and long vehicles. Atkins then would not need the Alternative 5B northeast relocated access point and narrow access road to Brush. This is our mutual understanding and is now conveyed to the State for consideration of Alternative 6 map. R17-17

E.

Alternative 6 takes into account the State adequately considering the utilities at the southwest and southeast corners of the Rockvale "T" intersection of US310 and US212. That would be a matter between the State and the utilities. Except to say do take into account, all of the utilities more or less co-exist with the State and the eastward drain ditch at that intersection. We do want to see flood waters and run-off waters of the drain ditch pass under the south part of that intersection. This could conflict with the easements of the buried utilities on re-alignment of intersection components. R17-18 Wetlands of the property southwest and southeast of the intersection have been adequately attended to over the years since the horse-and-buggy days of old. Within the last decade, the southwest wetland corner of the intersection has been filled in by that property owner who now has it as crop-land. Since the radius of curvature of the right turn from east bound to south bound at the Rockvale "T" intersection as proposed in Alternative 5B and in my Alternative 6 is to be considerably increased, some of that filled-in wetland will have to be re-evaluated for the right turn highway use. Otherwise, heavy loaded truck traffic will differentially sink the road-bed into the marshy sub-surface, due to braking caused R17-19

R17-17 For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion to modify the access to Atkins Tractor and combine it with the access to the Rock Creek Campground would be discussed with all affected land owners during detailed design.

R17-18 Once detailed design commences, coordination with land owners and utility companies would be conducted. Specific information on utilities as you have provided here is extremely important for the project. During detailed design, existing utilities would be avoided wherever possible, and where relocations are necessary, the optimum locations would be determined with the utility owners and the adjacent land owners. As you point out, the storm drainage, in addition to all other aspects of the proposed project, would need to be designed to functionally co-exist.

R17-19 Thank you for the specific information regarding the old filled-in wetland. As part of the detailed design process, geotechnical testing would be conducted to evaluate subsurface conditions. This would be critical for an adequate design to compensate for the potential boggy conditions you describe.

resonance of bouncing. Apparently, there is no known deep bog there.

F.

Make Re-aligned Brush Road much wider near to and at its intersection with US212-US310 but elevate the road approach to the intersection so as to be at the same elevation as the highway intersection so traffic waiting to enter the highway from Brush Road can see east and west a longer distance which is short now. As pointed out above, that highway intersection itself needs to be wider to accommodate turns of heavy truck and RV traffic in the likely event of diversion of highway traffic around an accident scene upon the old road Rockvale to Laurel. Or, for that matter an accident up on the new Alternative 5B highway. R17-20

G.

The Alternative 6 proposed speed limits of 35 MPH, 45 MPH, and 55 MPH, as mentioned above, need to be appropriately posted. The present posted 45 MPH speed limit sign on the highway eastward bound approaching Rockvale should be reset westward another 500 feet and re-labeled as 35 MPH with installation of new speed limit of 45 MPH begun west 500 feet more. Further west another 500 feet should be installed a new 55 MPH speed limit. The reason for this proposed re-alignment of eastbound speed limits is due to the night-time obscurity of all traffic at the "T" intersection which in reality is not simply a "T" because it is also an entrance-exit to the Casino-Restaurant and Rockvale Road. Night time accidents have occurred at this intersection due to drivers not having enough time to make valid decisions on traffic conditions. With a 35 MPH through that intersection, eastbound and west-bound through Rockvale, this ought to allow more time to timely make and effectuate safer driver decisions. A posted "stop condition" westbound to southbound left turn from that 5th lane, along with the 35 MPH speed zone, should greatly improve valid driver decisions. With a larger longer intersection this should also help increase decision time and clearness of line of sight. R17-21

The present 45 MPH speed limit sign posted at the east entrance to Rockvale is located

R17-20 Your suggestions for the design details of sight distance and adequate turning radii would be considered during detailed design. Sight distance is a critical safety consideration, particularly at intersections where there is superelevation on the main line.

R17-21 Your suggestion of reducing the speed limit is noted and would be considered during detailed design. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency.

inadequate and should have been placed another 500 feet back towards Laurel years ago. In my Alternative 6, it would be proper to post a new 35 MPH speed limit sign back towards Laurel from the present location of the 45 MPH sign. Then post a new 45 MPH sign back towards Laurel a distance of 500 feet from the new 35 MPH sign. And post a new 55 MPH sign back towards Laurel another 500 feet.

The north-south traffic on US310 should also pass through speed limits posted as 35 MPH, 45 MPH, and 55 MPH. Northbound, the 35 MPH should be posted at the northern end of Rock Creek US310 bridge, with a 45 MPH posted about 500 feet south of the intersection of Gibson Road at US310 and the 55 MPH posted at the beginning of the downgrade of northbound US310 some 1000 feet south of Gibson Road near US310 mile marker 42 just north of E Wilsey Road. Leaving US310 on its present straight north route from Gibson Road to intersect with US212 at the Rockvale "T" intersection permits northbound traffic to see the intersection flashing red light, on clear enough nights, and to do so from the beginning of the northbound downgrade south of Gibson Road just north of mile marker 42. But, as it was shown in an accident on a clear day and clear road involving a northbound jack-knifed truck-trailer at the access point to RockCreek Campground, the present speed limit of truck 60 MPH passed the Camp is far too high for safe deceleration of heavy trucks on the downgrade to northbound mate with the present speed limit of 45 posted midway of Atkins Tractors property. And present 45 MPH is far too high for safe right turn of northbound heavy loaded trucks heading east at the Rockvale intersection in any of the maps displaying the State's Alternatives. With the State alternatives proposed as well as my Alternative 6, a 45 MPH speed limit for fully loaded and long vehicles at that right turn is much too high for safety while 35 MPH is marginal but can be safely negotiated with caution of driver adequate observations. After the turn heading east into the slow lane, all such traffic meets eastbound fast lane traffic and at 35 MPH they both can safely co-exist side-by-side because the reconstructed Rockvale to Laurel

R17-22

R17-22 Your suggestion of reducing the speed limit would be considered during detailed design. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency. Your suggestions for design details including sight distance would be considered during detailed design. Sight distance is a critical safety consideration for avoidance of fixed obstacles and other vehicles, particularly at intersections.

highway will have two eastbound lanes instead of having to merge into one lane as is. A posting of a sign indicating northbound traffic turning right at the "T" intersection should slow to X MPH is not appropriate at the turn itself because the downgrade northbound to the intersection requires slowing down prior to the turn. A proposed right turn caution sign posted as 20 MPH should be located some 100 feet prior to beginning the right turn. Many fully loaded sugar-beet trucks have flung some of their cargo during the right turn at posted speed limit. As have rock loaded trucks. I have removed many such objects from the roadway at that right turn. The installation of additional light standards to light up the intersection would greatly help during heavy rain, snow, and fog.

This new speed limits arrangement should give traffic the opportunity and notice to slow down just as it does at Joliet. Because of downslope grades into Rockvale from the south, the east, and the west, this arrangement would give heavy loaded trucks and long RVs adequate chance and notice to slow down. Approximately 1% of all traffic is truck, truck-trailer, RV, and towed recreational trailers, often further towing a third vehicle. None of this traffic can now possibly slow down adequately and safely from 70 to 45 MPH at the presently posted spend limit sign locations. But Alternative 6 proposed posting gives traffic the necessary advanced notice of where to apply brakes and down-shift transmissions.

The MHP now gives tickets to speeders through Rockvale in an appropriate fashion. Their program of flagging speeders is to be commended. But Rockvale through traffic needs to be at a reduced speed limit of 35 MPH so as to adequately anticipate turnoff traffic yet provide for a safe feed-thru of longer distance traffic.

R17-23 (cont.)

IN CONCLUSION

Alternative 6 is hereby proposed in hopes the State will not consider adopting any of its own alternatives, 1 through 5B, for the Rockvale community. Pointed out above are arguments in favor of adopting Alternative 6. Alternative 6 would not impact Alternative 5B be-

R17-23 Your suggestion of reducing the speed limit is noted and would be considered during detailed design. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency. Your suggestions for intersection lighting would be considered during detailed design.

In conclusion, your Alternative 6 provides some good detailed information that would be considered during detailed design, and are applicable to all of the Build Alternatives presented in the Final EIS throughout the project corridor.

yond the northeast of Rockvale towards Laurel. As to costs, Alternative 6 is the least expensive for Rockvale. Alternative 6 posts speed limits different from existing; and, different from State's Alternatives 1 through 5B which do not change speed limits 70/65, 60/55 MPH or 45 MPH. Alternative 6 proposes to arrange speed zones via appropriately placed signs of 35 MPH, 45 MPH, 55 MPH and 70/65, 60/55 MPH, which allows all of us, moving and fixed, to co-exist in harmony with minimum risk of accidents; surely, far less than now. Because of the snow can cover up unlit signs, it is recommended the amber flashing lights at the "T" intersection be accompanied with a lit sign indicating 35 MPH seen eastbound and westbound and protected from snow obscruity via shielding.

R17-23 (cont.)

Respectfully submitted:

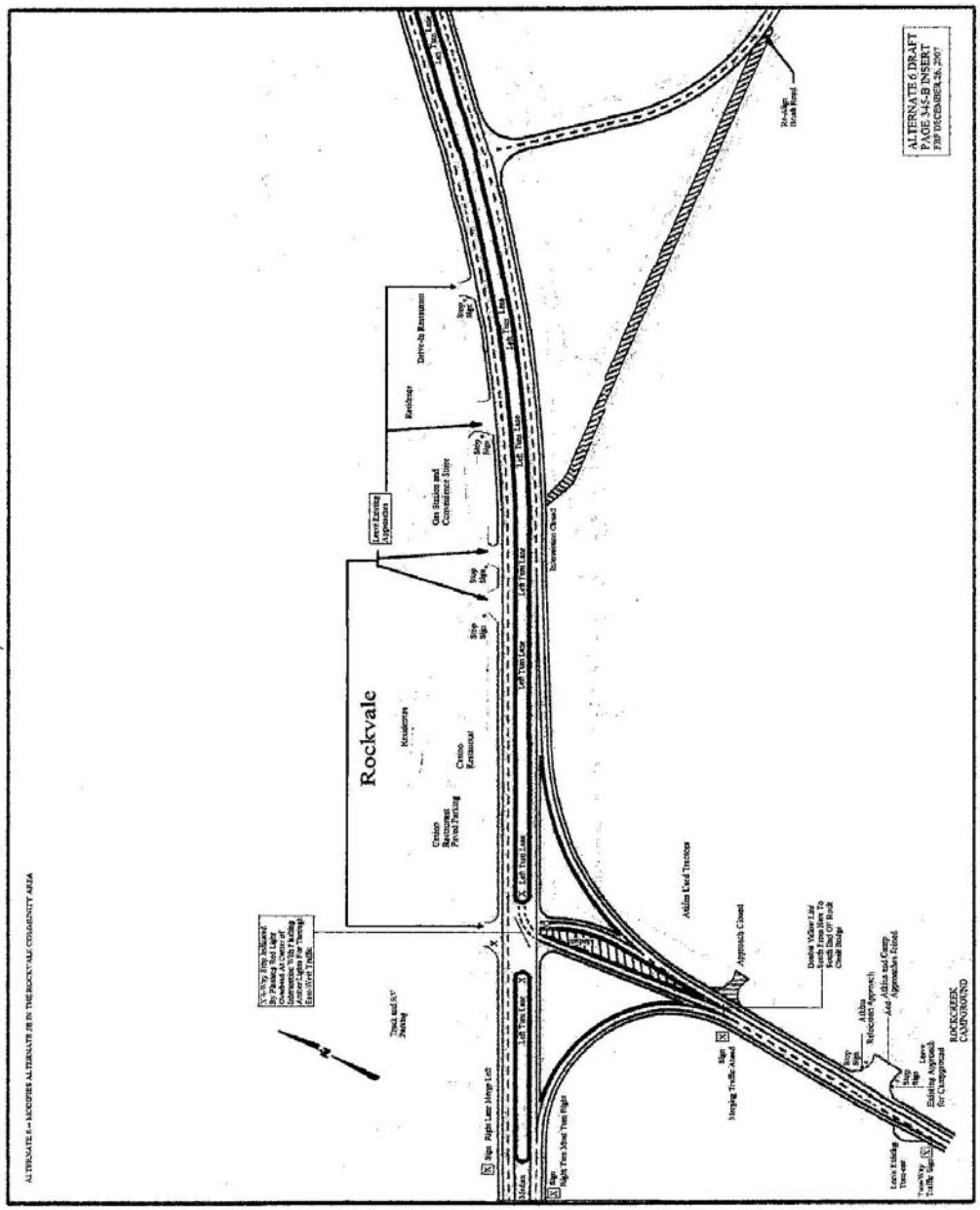
Frank Boring Fitzgerald

Frank Boring Fitzgerald

Dated: December 26, 2007

See response to Comment R17-23 on the previous page.

Exhibit 1


ALTERNATE 6 DRAFT
PAGE 345-B INSERT
FEB DECEMBER 26, 2007
Rockvale
Cruiso Restaurant
Cruiso Restaurant Patrol Parking
Knudsens
Gas Station and Convenience Store
Restroom
Drive-In Restaurant
Leave Existing Appearance
Stop Sign
Stop Sign
Stop Sign
Stop Sign
Stop Sign
Left Turn Lane
Left Turn Lane
Left Turn Lane
Left Turn Lane
Left Turn Lane
Extension Closed
Rockville Road Ahead
Sign Right Lane Merge Left
Sign Right Turn Must Turn Right
Sign Merging Traffic Ahead
Approach Closed
Drive Yellow Dot Bench Installed To Each End Of Rock Chair Bridge
Attdin Level Thereon
Attdin Relocated Approach
Add Attdin and Camp Approaches Paved
Leave Existing Trees
Leave Existing Mowed for Campground
ROCK CREEK CAMPGROUND
Trees and SAT Parking
Trees Existing Thereon
Trees Existing Thereon
Trees Existing Thereon

No comments were delineated for the part of the letter shown on the facing page.

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Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007**.

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

Name and address (Include both physical address and your email address):

Dennis Kroft
1835 Hwy 212 So
Laurel Mt. 59044
blackbullman@netzero.net

Comments: There should be carefull consitration to the spring that is just north of railroad overpass at the north end of this project. We would like to see the spring flow naturally like it does now without picking up a lot of extra run off from this new project. Trust you will contact me with your plans. Spring could be buried with perforated pipe and go under the highway and runoff could go down the ditch.

R18-1

R18-1 A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to shallow groundwater are not expected.

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Name and address (Include both physical address and your email address):

Dennis Kroft
1835 Hwy 212 So
Laurel Mt. 59044
blackbullman@Netzero.net

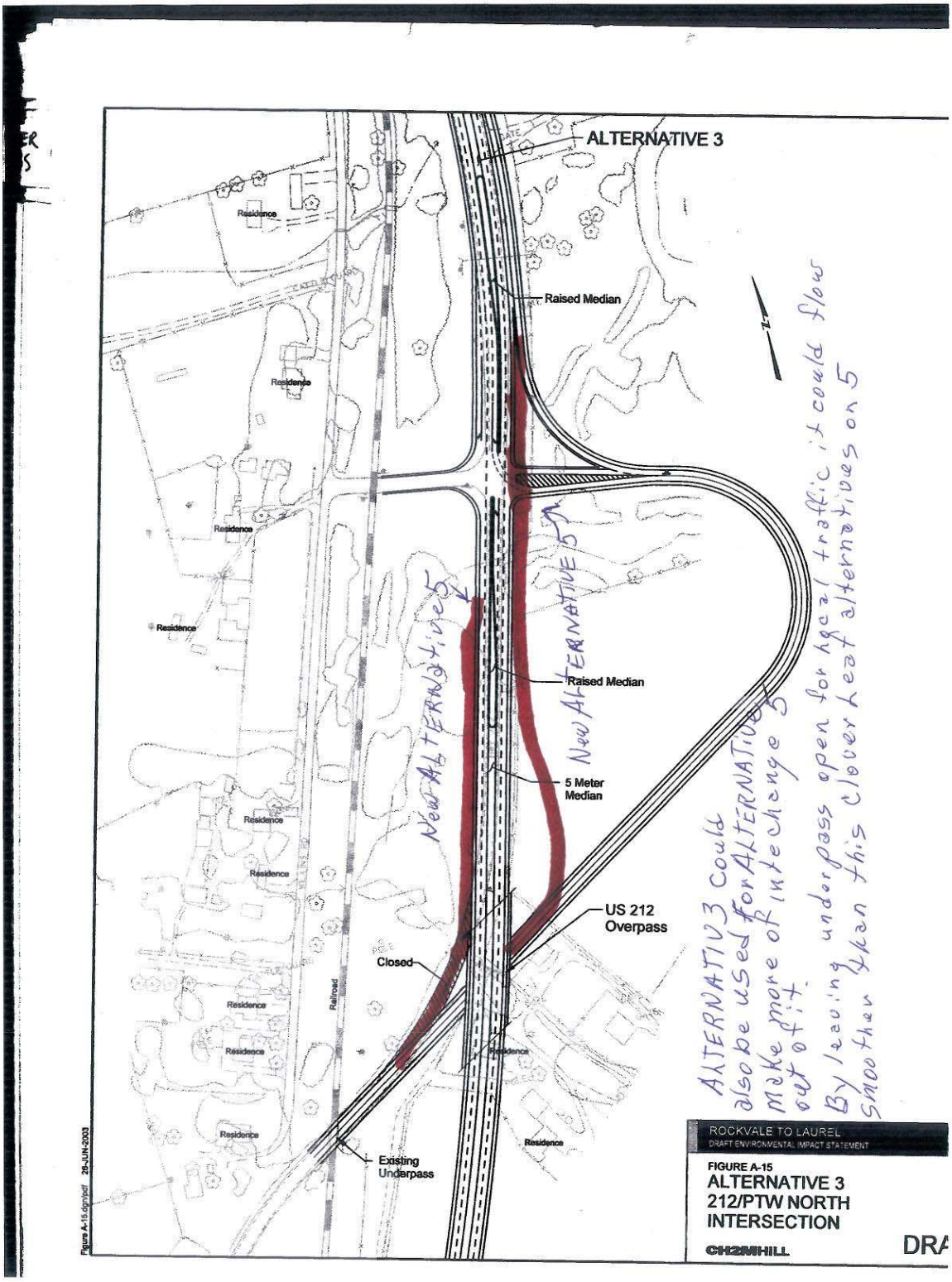
Comments: We think you should look at leaving the old underpass open on Route 5 like you did on Route 3 Figure A-15 alternative 3 except the intersection should be made more like an interchange. There should be a lane going south to stay to the right and go off on old Highway 212. The north bound lane after going under new 212 should stay as close to new highway as possible. Then the north bound lane on old road could enter into new 212 without stop sign. This seems like it would be cheaper and flow traffic better than Figure A-5a alternative 1, 5A + 5B Option 1, Figure A-5b alternative 1, 5A + 5B Option 2 and Figure A-5c alternative 1, 5A + 5B Option 3. The underpass has been handling all this traffic now it could still handle local traffic for a long time in the future.

R19-1

R19-2

R19-1 The existing railroad underpass does not meet current standards for safe sight distances and vertical clearance. Secondly, the roadway grades and intersection skew, where the proposed and existing US 212 join to the north of the proposed railroad overpass do not allow a connection to access the existing underpass. Modifications to keep the railroad underpass open and providing maintenance for access to a single parcel would not be feasible and would be too expensive.

R19-2 Providing continued maintenance and eventual replacement of this railroad structure is not feasible or cost effective.


ALTERNATIVE 3
Residence
Raised Median
Residence
Residence
Residence
Raised Median
5 Meter Median
Residence
Residence
US 212 Overpass
Closed
Railroad
Residence
Residence
Residence
Residence
Existing Underpass
Figure A-15.dgn/pdf 20-JUN-2003
ROCKVALE TO LAUREL
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FIGURE A-15
ALTERNATIVE 3
212/PTW NORTH
INTERSECTION
CH2MHILL
DRA
New ALTERNATIVE 5
New ALTERNATIVE 5
ALTERNATIVE 3 could also be used for ALTERNATIVE 5 Make more of interchange 5 out of it.
By leaving underpass open for local traffic it could flow smoother than this closer Least alternatives on 5

R19-3

R19-3 Thank you for your input. Unfortunately, this layout does not meet project design standards and would only be possible if Alternative 3 were chosen as the Preferred Alternative.

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12/20/2007

Montana Department of Transportation
Fax: (406) 444-7245
E-mail: www.mdt.mt.gov/pubinvolve/eis_ea.shtml.

Pertaining to the meetings of late regarding the proposed Rockvale-Laurel highway project , I Raymond J. Kramer residing at 5126 King Avenue West Blgs., owner of parcels 1 (tax code 0002309201), 3 (tax code 0002309203), & 4 (tax code 0002309204) located West of Highway 212 in the NE1/4 of Section 35, T.3S, R. 23E., P.M.M., Carbon County, Montana, wish to make the following comments:

Inasmuch as option 5B appears to be the preferred route, the negative impact of the new highway bisecting my property will have a negative marketing & desirability impact on these parcels. With that said, I feel the only choice that I have is to encourage the State of Montana to enter into negotiations with me for the purchase of my 3 parcels in their entirety. I have been actively marketing these parcels to the public and have sold parcel 2 which now has a residence on it, and parcel 5 which is currently vacant. I am now in a quandary of not knowing what I can, cannot, should, or should not do regarding the sale of these properties. This is no small item as I depend to a certain degree on the sale of these parcels to assist me in the retirement of farm debt. R20-1

I would further strongly suggest that alternate #1 would be the better route in my situation. R20-2

These parcels were Judge ordered to be made available for sale on 4/18/2003 under document #DV03-37.

Please feel free to contact me at any time to discuss this matter further, [redacted]

Best Regard,
Raymond J. Kramer

R20-1 Relocation assistance will be provided by MDT in accordance with federal guidelines.

R20-2 Comment noted. Thank you.

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Comment form

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

Name and address (Include both physical address and your email address):

William M. Hanna
31 Chilcott Road
Joliet, MT 59041

The proposed route of Highway 212, Alternate 5B meets with strong disapproval from William M. Hanna for the following reasons:

1. The proposed route and subsequent devaluation of my property will adversely affect on my retirement assets. This is particularly evident when the property is viewed as a whole or subdivided. R21-1
2. The new road's gradual angle to my back pasture means I will have constant nighttime headlights shining into the 10 picture windows of my house. R21-2
3. The proposed route will cause me to endure vehicle noise and in particular, "jake" brakes from semis. I currently have no road noise. It will also affect my air quality. It will also affect my privacy and seclusion. R21-3
4. My home was built on a view location that currently looks out on the Pryor Mountains and the valley below. Alternate 5B will destroy the view and peace I currently enjoy. My view is so important to me that I had all my utilities buried to preserve the beauty. R21-4
5. Alternate 5B will cut my back pasture into two parts and prevent me from accessing the entire pasture with my pickup to fix fence, feed and move my livestock. R21-5
6. Mule deer and white tail deer migration will be interrupted by the proposed route as they reside in my back pasture coulees and drink from the Free Silver Ditch. R21-6

I am asking for personal comments from you to address my concerns.

R21-1 MDT does not compensate for changed property value. During final design, each affected landowner will be contacted to ensure that reasonable access to his or her property is maintained and that other impacts are minimized as much as practicable.

R21-2 Additional coordination with affected landowners will be done during detailed design to ensure that impacts are minimized as much as practicable.

R21-3 Noise impacts and possible mitigation are detailed in *Section 4.9, Noise*. Air quality impacts are discussed in *Section 4.8, Air Quality*, and it was determined that the proposed project would not require mitigation.

R21-4 Visual resources were evaluated in the Draft EIS. The highway would be visible from various residences.

R21-5 Access to this property will be handled with the property owner during final design.

R21-6 Based on consultation with MFWP, no specific or potential "hot spots" have been identified, therefore the construction of full-fledged wildlife crossing are not currently being considered. As stated under *Section 4.14.2.6, Mitigation,* "…as the design process evolves, MDT will continue to evaluate appropriateness and necessity of wildlife crossing mitigation measures such as signage, wildlife detection systems, over-sized culverts, etc."

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Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

H. L. Moore
Physical: 4889 US Hwy 310 (212) (Silesia) Joliet MT 59041
Mailing: P.O. Box 31151 - Billings Montana 59107

Comments: I would like to address 3 points of interest concerning the Rockvale-Laurel Highway project.

1. The proposed re-alignment of Hwy 212-310 is acceptable. R22-1

2. Rockvale Junction: It is my considered opinion that traffic should be handled-controlled at Rockvale as it is in any other community in a business district where highways pass through. This is: SLOW IT DOWN! Examples: Lame Deer MT - Stop Light. Preservation of business needs to be of 1st consideration. Safty at the Junction needs to be of 1st consideration. Business is the life blood of communities no matter thier size. Making frontage roads is NOT acceptable. See scetch. (on existing 310-212) R22-2 R22-3

3. Safty and reduced Accidents need to be acheived in the interim that it takes to build the new Alignment. The existing roadway can be safer if the MDT and The Highway Patrol and Legislature will PAY Attention! It is ELEMENTARY. over R22-4

R22-1 Comment noted. Thank you.

R22-2 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. The speed limit would be changed if warranted by a speed limit study. This study has to be requested from MDT by a local agency. Your suggestion of a turn signal will be considered during detailed design.

R22-3 Similar to the response above, your suggestion of allowing left turns in a center turning lane is a sound idea and will be considered during detailed design.

R22-4 Enforcement of Montana's traffic laws is beyond the jurisdiction of MDT. A representative of MDT will contact you to discuss your suggestions.

Please Contact Me for Elementary Suggestions, [redacted]

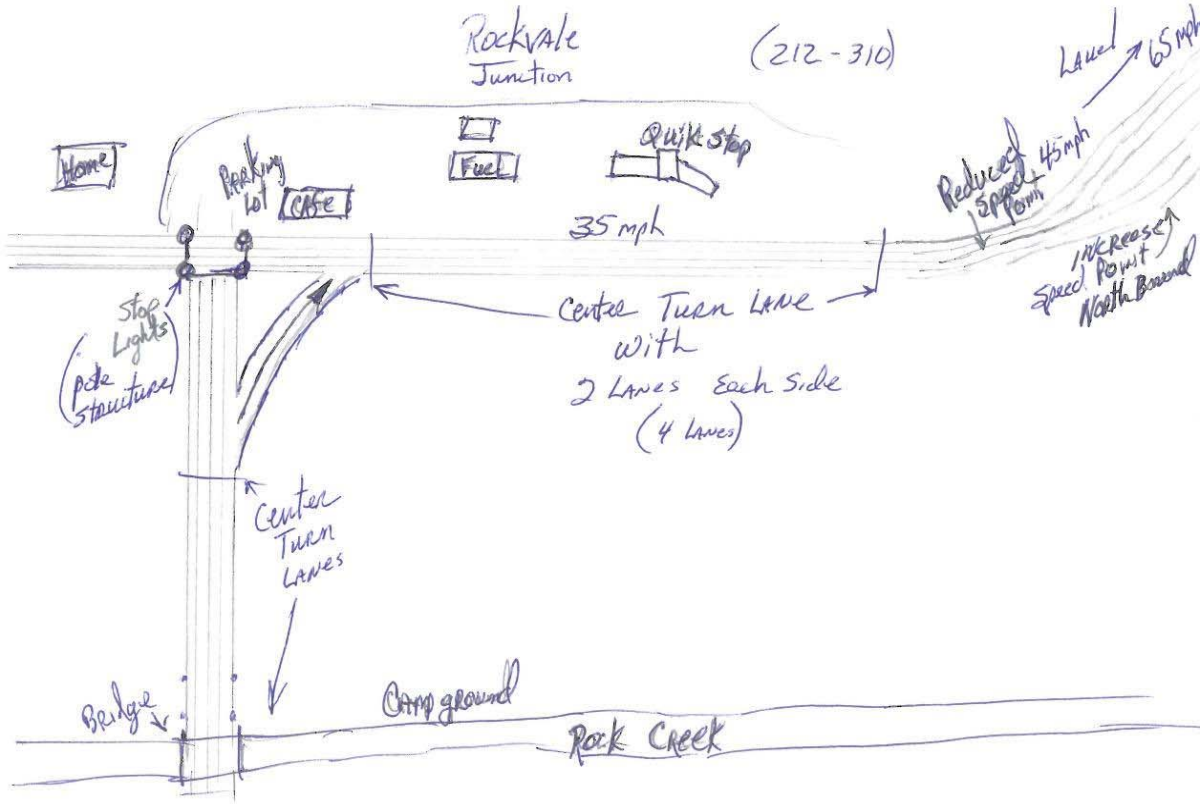
H L Moore

No comments were delineated for the part of the letter shown on the facing page.

Submitted By:
H.L. Moore
4889 Hwy 310 (212)
Silesia

N

This concept provides safty at the junction by slowing Traffic and preserves business opportunity. (Which pays taxes!) (When business goes away taxes go away!) This is very simple! There is no need to speed traffic up through this community point.



R22-5

R22-5 Thank you for your ideas. Access to businesses and lane configuration details for safe operations would be considered as a part of the design phase of the project.

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Comment form

(1)

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: 4070
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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

Name and address (Include both physical address and your email address):

Tom McNew DBA - Rockvale Travel Plaza
Sct. 212 & 310
Soliet, MT 59041

Mailing Address:
P.O. Box 80002
Billings, MT 59108

Comments: I am writing to you in heavy concerns of Figure A-6 of Rockvale to Laurel highway project.

I own the Exxon Convenience Store at Rockvale and your current design with the Business access Road and our approaches being closed would hit all three businesses pretty drastically. We rely on this highway to maintain our businesses, as at least 60% of our business is done with travelers and tourists, passing through. Closing these approaches and having a solid raised median with no left turn signal would heavily devalue our business, if not put us out of business. The north end of the access road is hidden behind a hill

R23-1 (cont.)

R23-1 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway. Your suggestion of eliminating raised medians to allow left turns would be considered during detailed design.

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Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: 4070
Meeting date and time: 6:00 pm, December 11, 2007
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Please indicate your name, address and affiliation (if any) below. Thank you for your interest in and comments about this project. Please use the back and/or additional sheets of paper if necessary.

Name and address (Include both physical address and your email address):

Comments: Where travelers passing thru would not have any idea what that is being used for. The people coming on the South wouldn't even know about the South end access road to get to us. The proposed access road in front of the Convenience Store would take out all of my frontage property, with it being right in front of my gas pumps and my fuel tanks would have to be relocated also.

The access road going behind the Casino would go right over the top of his septic system and would also destroy any future business development.

This current design would not be very friendly to semis and big trucks

R23-1 (cont.)

R23-2

R23-3

R23-4

R23-2 Similar to the response above, modifications to the proposed solutions to provide reasonable access to your property will be explored with you and considered during detailed design, with a goal of trying to avoid relocation of your gas pumps.

R23-3 As pointed out above, modifications to the proposed solutions to provide reasonable access to your property will be explored with you and considered during detailed design. In consideration of access road options, the detailed design will consider where utilities and other infrastructure features may be in conflict, and the best way to mitigate the impacts.

R23-4 As pointed out above, modifications to the proposed solutions to provide reasonable access to your property will be explored with you and considered during detailed design. In consideration of access road options, the detailed design will consider the types of trucks and other vehicles that would need to access the properties so that adequate turning movements could be accommodated.

3

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Comment form

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

Name and address (Include both physical address and your email address):

Comments: All 3 of us do have a fair amount of truck trade.

My proposal to this intersection is to leave both approaches open to the convenience store and drive in resturant or possibly relocating the approaches a little bit farther north, with a left turn signal on the approach farthest north and then there would be no need for a access road.

Then to realign Brush Road on the highway to the approach to the farthest north with the left turn signal.

Then I think there should be a speed limit of no faster than 55 mph coming from Highway 310 that is swinging

R23-5

R23-5 *Section 2.2.3, Access Management,* describes the purpose of Access Management and points out that it is necessary to balance access needs of individuals with those of the transportation system, including providing a safe facility. For the purposes of evaluating the environmental impacts, the designer develops a conceptual design that satisfies these goals. It is recognized that many other details need to be worked out during detailed design when the definition of the issues is clearer. This process may result in changes to the details of the project. During the detailed design, information would be solicited from the affected land owners and business owners to ensure that reasonable access would be maintained to existing parcels adjacent to the highway including the best solution for access and traffic operations through and around this intersection area. Speed limit enforcement and changes are beyond the jurisdiction of MDT. Modifications to speed limits are requested by the local jurisdiction, a speed study is conducted, and the Transportation Board then must take action.

(4)

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Comment form

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

Name and address (Include both physical address and your email address):

Comments: Around to connect on to Highway 212 and then proceed faster after the Drive in Restuarant.

We would appreciate your heavy consideration to have Figure A-6 to be re-designed. I figure my proposal to this still would make it a safe and better highway without doing any damage to existing businesses. Cost would be cut down considerably not having to purchase near as much right-of-away, less construction cost and less maintenace afterwards. R23-6

Thank-you for your attention to this serious matter!

Tom McNew

R23-6 In recapping the response to your comments above, consideration will be made to all of your suggestions presented in your Figure A-6 during the detailed design phase of this project.

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5 Cheyenne Lane
Laurel, MT 59044-9224

26 December 2007

Tom Martin
Environmental Services Division
Montana Department of Transportation
P.O. Box 201001
Helena, MT 59620-1001

Dear Mr. Martin:

This letter is a formal response to the *Draft Environmental Impact Statement for Rerouting of US 212–310, Laurel to Rockvale* of September 2007 and the meeting at Laurel High School on 11 December. The meeting was very informative and well presented. However, we do have several comments and a question that we would like to raise.

Recommendations:

- We received by mail the postcard announcing the 11 December meeting only two days in advance of the meeting. Several of our neighbors did not receive this notification until the day of the meeting, and one never received the postcard at all. Our recommendation would be to mail the cards out at least *a week earlier* than you did. We did read several notices of the draft and 11 December meeting in the *Billings Gazette* (twice) and the *Laurel Outlook* (once); however, not everyone reads the newspapers or listens to television. R24-1

- Your figures showing the *Intersection Alternative* maps (Figs. A-1 thru A-22) are based on your MDT surveys. They do *not* have map scales depicted on them, thus making them very hard to generally interpret and translate onto 1:24,000 scale maps. As a matter of form, all such figures should have scales as an integral part of the map! R24-2

Question:

- We gathered from the meeting that the MDT was planning on putting access roads onto the rerouted US 212-310 approximately every one mile. **Are you planning on putting access roads on the relatively unpopulated areas of the higher part of Whitehorse Bench (e.g., secs. 1, 11, 12, & 14, T3S, R23E. see preferred alternative route 5)?** If no accesses were planned for this region, there would be a gap of approximately 4.5 mi. without access between the Whitehorse (S) access and Farewell Road. If you are planning on access roads in this gap, these are not shown on any of your figures or mentioned in the text. There are a few houses off Whitehorse Ranch Road that would need access, but much of this area is bordered by dry pasture and is not likely to be developed. So, why would you plan for accesses in these areas? R24-3

Sincerely yours,

Thomas W. Henry

Thomas W. Henry

Susan J. Henry

Susan J. Henry

R24-1 Communication will be maintained through updating website in addition to other methods.

R24-2 Scale bars were added.

R24-3 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project. It is anticipated that access points on the preferred alternative would be located in the vicinity of where it crosses the section line between Sections 1 and 12, and then another approximately 1 mile south. *Section 2.2.3.2, General Access Management,* discusses general access management and points out that the details of the access management plan, which will be developed in the design phase of the project, would maintain reasonable access to existing parcels adjacent to the highway.

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December 22, 2007

Tom Martin, PE
MDT Environmental Service Bureau Chief
2701 Prospect Avenue
P.O. Box 201001
Helena, Montana 59620-1001

Subject: US 212 Reconstruction Rockvale to Laurel
DEIS #NH 4-1 (21)43, Control # 4070

Dear Mr. Martin:

After studying the "US 212 Rockvale to Laurel DEIS", we are submitting our support for the project proposal and **Preferred Alternative 5B – Combined West Bench**. The benefits of 5B address the purpose and need, as well as considering the mitigation of cumulative impacts. R25-1

Furthermore, in all honesty, we moved to the Joliet, Montana area from Idaho in November 2007. Implementation of the highway reconstruction Preferred Alternative 5B would directly affect us in a positive way, and conversely, the selection of Alternative 1 – Far West Bench would have an adverse affect. That particular Alternative route leaves the PTW at RP 42.6 east-north-east of our residential neighborhood, the Bridle Trail Estates development.

Commuting to work and for business in Billings, it is obvious to us that the purpose and the need justify this project. Additionally, socio-economic forecasts for the Yellowstone and Carbon County areas estimate a rapid, significant increase in population. Therefore, transportation safety is the predominant concern. R25-2

Thank you for the opportunity to comment.

Sincerely,

Laura Button
Tim Button

Laura & Tim Button
P.O. Box 80933
Billings, Montana 59108-0933

R25-1 Comment noted. Thank you.

R25-2 Comment noted. Thank you.

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Comment form

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Project ID: NH4~1(21)43 ~ Control Number: **4070**
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Name and address (Include both physical address and your email address):

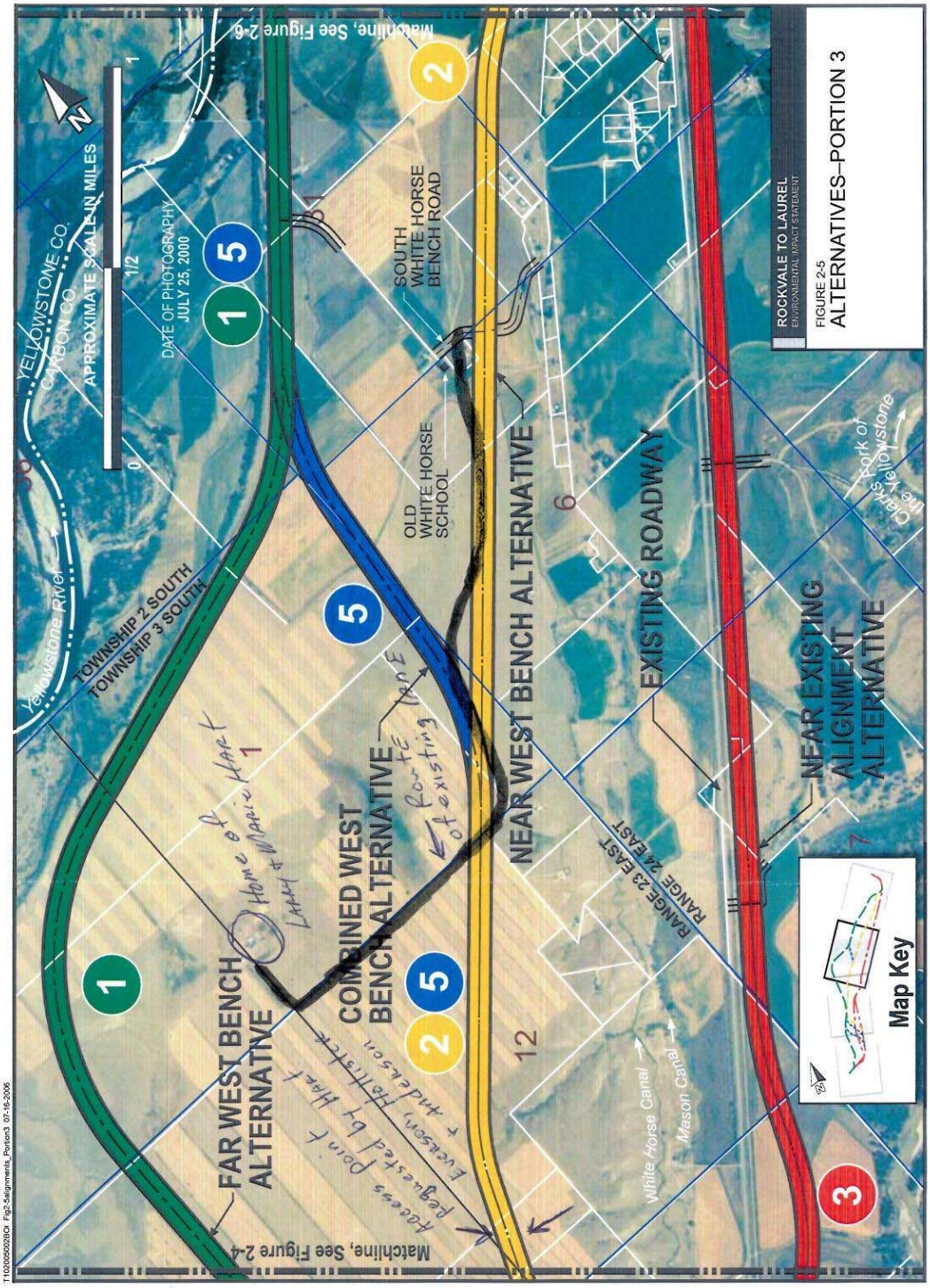
Larry + Marie Hart
84 Whitehorse Ranch Rd
Laurel MT 59044

Comments: We would like to have an access onto the preferred route of 5B, we live west of the new road and would be cut off from our existing route out without an access. We own the land in partnership with Gary Everson who is also requesting an access point. Just West of the South East corner of section 1 and the Nort East corner of section 12 township 3s Range 23 East is where the new Highway will cross our existing road
We would also like an access near the Southwest corner of Section 12 along with Jim Anderson and Robert Hollister who own the land bordering us. the Highway will also be going through these land see enclosed map

Larry Hart

R26-1

R26-1 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project.


FAR WEST BENCH ALTERNATIVE
COMBINED WEST BENCH ALTERNATIVE
NEAR WEST BENCH ALTERNATIVE
NEAR EXISTING ALIGNMENT ALTERNATIVE
EXISTING ROADWAY
SOUTH WHITE HORSE BENCH ROAD
OLD WHITE HORSE SCHOOL
TOWNSHIP 2 SOUTH
TOWNSHIP 3 SOUTH
RANGE 23 EAST
RANGE 24 EAST
Yellowstone River
White Horse Canal
Mason Canal
Clarks Fork of Yellowstone River
YELLOWSTONE CO.
CARBON CO.
APPROXIMATE SCALE IN MILES
DATE OF PHOTOGRAPHY JULY 25, 2000
Matchline, See Figure 2-6
Matchline, See Figure 2-4
Map Key
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 2-5
ALTERNATIVES–PORTION 3
T:\020050\028\01_Fig2-5alignments_Portion3_07-16-2006

No comments were delineated for the part of the letter shown on the facing page.

From: Robert Lininger
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Sunday, December 16, 2007 12:04:19 AM

To whom it may concern;

I am a former resident and longtime recreationist along the proposed route of the new Highway 212 expansion project from Laurel to Rockvale. I also hail from a long line of roadbuilders. Given both my familiarity and love for this particular stretch of river, and my firsthand knowledge of what a project such as this will entail, I feel obligated to voice my strong disapproval of this proposed plan. R27-1

I traveled highway 212 for over 3 years, daily, from Laurel to Billings and back to Whitehorse North Road, and can honestly say that the traffic situation does not currently necessitate a road expansion project like this. I am aware of the need to plan for the future, but under no circumstances do I see this project as an acceptable alternative to the current Route 212. R27-2

Given the serene natural beauty, the agricultural industry, and the wildlife habitat that stands to be interrupted or forever destroyed, and as a frequent fisherman and hunter along this stretch, I am personally appalled at the though of bringing road traffic right to the river's edge, ruining yet another beautiful stretch of the Yellowstone. I urge you to use the time that we have before the traffic problems indeed necessitate a decision of this magnitude to explore alternatives to your plan. R27-3

I guarantee that I have spent more time on that stretch of river than all of your planners combined, especially considering that I have never seen anyone involved with the project, and considering that my input was never solicited at any time during the three years that I lived on Whitehorse North road. I know the fragility of the terrain, the value in conserving it. Please reconsider moving a busy highway such as this to the river's edge. R27-4

Sincerely,

Rob Lininger
2306 Brentwood Lane
Billings, MT 59102
[redacted]

R27-1 Comment noted. Thank you.

R27-2 *Chapter 1* of the EIS discusses the purpose and need of the proposed project in detail.

R27-3 *Chapter 2* of the EIS discusses the range of alternatives considered and analyzed. *Section 2.6, Basis for Recommending the Preferred Alternative,* discusses the methodology for recommending a preferred alternative.

R27-4 *Chapter 7* of the EIS describes the public involvement activities conducted for the proposed project, including the notification process used (*Section 7.3.1.1, Notification Process Used).*

Rob Lininger
lininger@rocky.edu
Rocky Mountain College
http://www.rocky.edu

No comments were delineated for the part of the letter shown on the facing page.

From: Leslie Marty
To: mdtcommentsrockvaleeis@mt.gov;
cc: Alters, Steve/CIP; Knight, Jen/BOI;
Subject: Comment on Rockvale to Laurel Draft EIS
Date: Monday, December 24, 2007 2:49:24 PM

I applaud you on designing a bike lane into the plans for the highway between Rockvale and Laurel. I and many other local cyclists as well as touring cyclists will make good use of it. R28-1

Sincerely,

Leslie Marty
Roberts, MT

R28-1 Comment noted. Thank you.

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Comment form

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

Name and address (Include both physical address and your email address):

Comments: We object to the hwy being built on the bluffs due to certain noise, air and water pollution, as well as disturbance to the wildlife, contamination to existing springs that feed our water supply. R29-1

Please extend comment period an additional 90 days. R29-2

R29-1 Noise impacts and possible mitigation are detailed in *Section 4.9, Noise*. Air quality impacts are discussed in *Section 4.8, Air Quality*, and it was determined that the proposed project would not require mitigation. *Section 4.10, Water Flow and Quality,* discusses the proposed project's impact to water quality and the mitigation measures. *Section 4.14, Wildlife Resources,* and *Section 4.15, Threatened and Endangered Species and State Species of Concern,* discuss the impacts and mitigation to wildlife and threatened and endangered species. A hydrogeologist has investigated the spring concerns, and the results of those investigations have been included in the Final EIS. A new section on groundwater has been added in *Section 3.10.7, Groundwater*. Impacts to groundwater are not expected.

R29-2 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

K
Mr. & Mrs. David Klarich
2512 Hancock Dr
Billings, MT 59102-1602

BILLINGS MT 593
20 DEC 2007 PM 4 L

LOUIS COMFORT TIFFANY

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

No comments were delineated for the part of the letter shown on the facing page.

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Susan Howe
718 Windham Sq.
Glendive MT 59330

MDT Environmental Services
201 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

December 17, 2007

RE" Save the Yellowstone River

To Whom It May Concern:

I strongly object to another encroachment on the Yellowstone River, the only major undimmed wild and scenic river in the loser 48 states. R30-1

Please extend the comment period regarding this issue. R30-2

Sincerely,

Susan Howe

Susan Howe

R30-1 Comment noted. Thank you.

R30-2 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

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ENVIRONMENTAL

MASTER FILE
COPY

2109 11th Street West
Billings, Mt. 59102
December 14, 2007

Mr. Tom Martin
Montana Department of Transportation
PO Box 201001
2701 Prospect Ave.
Helena, MT 59620-1001

Dear Mr. Martin:

This letter contains my comments on the Reconstruction Project for Highways 212 and 310 between Laurel and Rockvale, Montana. While I was unable to attend the public hearing, I have reviewed the project on-line.

Whichever plan is ultimately chosen, it is paramount that the highway be rerouted in such a manner that it will eventually cross the Yellowstone River on a new bridge at some point west of the present Cenex refinery. I base my rationale on the following: R31-1

A. Situating a major highway through a refinery is extremely poor planning. Potential terrorism threats should be obvious. Should a disaster occur, all traffic to the south from Laurel would be stopped. This has already occurred due to a "situation" at the refinery.

B. Traffic in and out of the Cenex refinery is currently causing congestion. Tanker trucks entering the refinery, while waiting to cross the railroad, presently block one lane of traffic on a regular basis.

C. The interchange to Interstate 90 is barely adequate for current traffic flows. Increased traffic will only add to the inadequacy of the interchange.

D. Building a new railroad underpass or overpass south of Laurel would be a further waste of money. These funds would be better spent on developing a new approach to Interstate 90, including old Highway 10, west of the Cenex refinery.

I believe the Highway 212, 310 Reconstruction Project should be the highest priority in the Billings region, if not statewide. I think that the safety of the traveling pubic is more important than developing roads, access, etc., to accommodate commercial interests, which I consider to be the case in much of the Shiloh Road reconstruction efforts. Highway 212, 310 is not safe! R31-2

Sincerely,

J. Jeffrey Dietz

R31-1 The crossing referred to is outside the project boundary.

R31-2 Comment noted. Thank you.

HENDRICKSON, EVERSON, NOENNIG & WOODWARD, P.C.

ATTORNEYS AT LAW
208 N. BROADWAY SUITE 324
P.O. BOX 2502
BILLINGS, MONTANA
59103-2502

GARY B. EVERSON
MARK E. NOENNIG
VERNON E. WOODWARD
KELLY J. VARNES
JO MESSEX CASEY*
TANYA DVARISHKIS
DANIELA E. PAVUK
*Also licensed in Washington

ROBERT E. HENDRICKSON
Of Counsel

TELEPHONE 245-6238
FACSIMILE 245-6253
AREA CODE 406

MASTER FILE COPY

FACSIMILE COVER SHEET

TO: MDT Environmental Services

FROM: Gary Everson Fax No. (406) 245-6253

DATE and TIME: December 19, 2007

NUMBER OF PAGES: 6 (Including Cover Sheet)

DESTINATION FAX NO: 406-444-7245

DESTINATION'S TELEPHONE NO.:

RE: Proposed Highway

MEMO: See attached Comment Form.

If you have problems receiving this transmission, please call (406) 245-6238.

The original will (XXXXX) will not ( ) follow by mail.

**CONFIDENTIAL AND PRIVILEGED INFORMATION: The pages which follow are intended solely for the person to whom addressed. If you are not the intended recipient or an authorized agent of the intended recipient, then this is notice to you that copying, dissemination, or distribution of this transmission is prohibited. If this transmission is received by you in error, please call the sender at once.

No comments were delineated for the part of the letter shown on the facing page.

Montana Department of Transportation

serving you with pride

Comment form

Project name: Rockvale ~ Laurel DEIS Public Meeting in Yellowstone & Carbon counties
Project ID: NH4~1(21)43 ~ Control Number: **4070**
Meeting date and time: 6:00 pm, December 11, 2007
Location: Laurel High School Auditorium, 203 East 8th St. Laurel, MT

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: **MDT Environmental Services**, at 2701 Prospect Avenue, PO Box 201001, Helena, MT 59620-1001. Comments may also be submitted by fax to (406) 444-7245 or online at **www.mdt.mt.gov/pubinvolve/eis_ea.shtml.** The deadline for comments is **December 26, 2007.**

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

Name and address (Include both physical address and your email address):

Gary Everson
4032 Moser Dome Rd.
Silesia, MT 59041
gary@henwlaw.com

Comments: See attached.

No comments were delineated for the part of the letter shown on the facing page.

Gary Everson
4032 Moser Dome Road
Silesia, MT 59041
gary@henwlaw.com

I am the owner of a ranch in Sections 1, 2, 3, 10, 11 and 12 of Township 3 South, Range 23 East. The preferred Alternative 5 would go through the east corner of our ranch for a substantial distance. My partner, Larry Hart, farms the ranch, and we run cows together on the ranch. He also lives on the boundary between Sections 1 and 2 on the west side of the preferred Alternative 5 of the new proposed Highway 212 between Laurel and Rockvale. I live on the east side of the proposed highway.

Your present access locations do not show any access for Larry Hart to access his home nor for me to have access to the ranch. Our present access is from the Whitehorse Bench Road at the southwest corner of that road by Al Yager's property. Our access road is named "Whitehorse Ranch Road." The Whitehorse Ranch Road continues from the Whitehorse Bench Road through the Al Yager property up to approximately the section line between Section 1 and Section 12 where it continues west to the residence of Larry and Marie Hart. Two maps showing the location of Larry and Marie Hart's homestead, our current access road, and the proposed highway are attached.

As you may imagine, it is necessary for Mr. Hart to use this road for his livelihood in moving big farm machinery, livestock and grain over and across this access road to market. In order for us to cooperate on the relocation of the Highway 212 through our property, it is imperative that we continue to have access at or near our existing location. Thus, please let us know where you intend to provide access to the new proposed road for Mr. Hart and his family and for me and my family.

I would also note that there are four other families that use the same Whitehorse Ranch Road to access their residences. These four residences are on the east side of the proposed highway and are located Lot 1 of the NW¼ of Section 12, Township 3 South, Range 23 East.

R32-1 (cont.)

Further, I presently have an access easement along the south side of the Whitehorse Canal. This access easement takes off from the Whitehorse Ranch Road just on the south side of the Whitehorse Canal and continues in a westerly direction to provide access to the northern part of the ranch. Sometimes this access to the ranch is more convenient than going up the hill and taking the main ranch access road. What provisions do you intend to make in order that I can continue to use this access easement.

Next, I note that the proposed Alternative 5 would split a portion of the ranch in the NW¼ of Section 12. How would we access the property on the east side of the proposed

R32-1 As stated in *Section 2.2.3.2, General Access Management*, reasonable access would be maintained to existing parcels adjacent to the highway. Access to businesses and residences would be determined during the design phase of the project.

R32-1 (cont.)

highway?

I presume that you fence both sides of this road. Is that correct? Who is responsible for the maintenance of the fences once they are built? Do you build cattleguards on the access road? Also, who is responsible for picking up litter along the highway? Are there any provisions being designed to reduce the noise of the cars on the highway?

R32-2
R32-3
R32-4
R32-5
R32-6

I would appreciate it if you could have someone contact us regarding the questions raised in this comment sheet, particularly the access issues.

Gary Everson

R32-2 Continuous fence will be installed on both sides of the new roadway.

R32-3 Maintenance of fence along the right-of-way would be the responsibility of MDT.

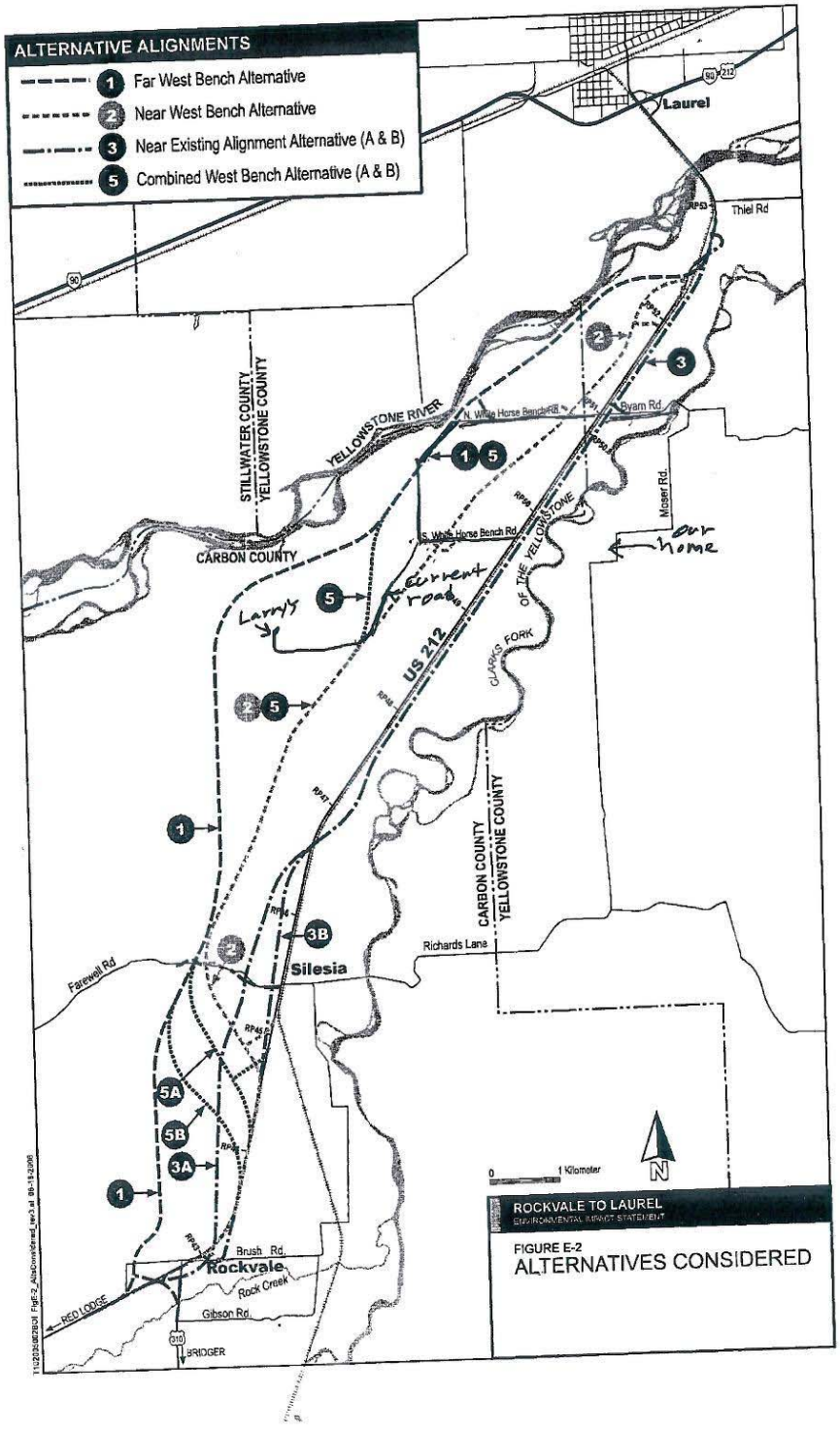
R32-4 Where needed, cattleguards would be installed at the fenceline for access roads.

R32-5 Litter cleanup on MDT highways is done on a volunteer basis.

R32-6 The noise analysis and impacts to the buildings in the project area are discussed in the document in *Section 4.9, Noise*. Noise impacts would be dealt with in accordance with MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual* (2001).


Matchline, See Figure 2-4
FAR WEST BENCH ALTERNATIVE
COMBINED WEST BENCH ALTERNATIVE
NEAR WEST BENCH ALTERNATIVE
White Horse Canal
Watson Canal
Clarks Fork of the Yellowstone
Yellowstone River
Map Key
YELLOWSTONE CO.
CARBON CO.
APPROXIMATE SCALE IN MILES
DATE OF PHOTOGRAPHY JULY 25, 2000
Matchline, See Figure 2-6
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE 2-5
ALTERNATIVES–PORTION 3

No comments were delineated for the part of the letter shown on the facing page.


ALTERNATIVE ALIGNMENTS
1 Far West Bench Alternative
2 Near West Bench Alternative
3 Near Existing Alignment Alternative (A & B)
5 Combined West Bench Alternative (A & B)
Laurel
Thiel Rd
STILLWATER COUNTY
YELLOWSTONE COUNTY
YELLOWSTONE RIVER
N. White Horse Bench Rd
Byam Rd
Moser Rd.
our home
S. White Horse Bench Rd
CARBON COUNTY
current road
Larry's
US 212
CLARKS FORK OF THE YELLOWSTONE
CARBON COUNTY
YELLOWSTONE COUNTY
Richards Lane
Silesia
Farewell Rd
5A
5B
3A
3B
Brush Rd.
Rockvale
Rock Creek
Gibson Rd.
RED LODGE
BRIDGER
0 1 Kilometer
N
ROCKVALE TO LAUREL
ENVIRONMENTAL IMPACT STATEMENT
FIGURE E-2
ALTERNATIVES CONSIDERED

No comments were delineated for the part of the letter shown on the facing page.

From: Lee Scherer [l.scherer@energyconsultantsllc.com]
Sent: Thursday, December 20, 2007 2:41 PM
To: MDT Comments - Rockvale EIS
Cc: steve.alters@ch2m.com; Jennifer.Knight@ch2m.com
Subject: Comment on Rockvale to Laurel Draft EIS

Gentlemen:

As a Billings resident who travels this corridor frequently, I am fundamentally opposed to the new proposed routing over the bench. This simply adds one more unnecessary highway in a more pristine and environmentally sensitive area, and does not even remove the existing road. R33-1

I realize that congestion is a problem, primarily caused by farmers and ranchers that prefer 50-55 mph versus Billings residents who travel the posted 70 mph. Rather than go to the excessive expense of a new highway, it is my personal opinion that if 4 to 5, one mile passing lanes were constructed and spaced between Red Lodge and Billings, the majority of the problem would be solved. This would be a far more fiscally responsible alternative in the short run. The ultimate long term solution is to fight the extra right-of-way issues, including the railroad, and widen the existing highway, not just to RockVale but all the way to Red Lodge. R33-2

I am also concerned that the extremely short comment period, during the Christmas holidays is inappropriate given the sensitivity of the proposed highway and request that a reasonable extension for comments be granted. R33-3

Respectfully submitted,

Lee R Scherer
Engineer
4715 Rock Ledge Rd
Billings, MT 59106

R33-1 *Chapter 1* of the EIS discusses the purpose and need of the proposed project in detail.

R33-2 A two-lane roadway with intermittent passing lanes was evaluated specifically for this section of highway in the project study area and eliminated from detailed analysis because it did not meet the purpose and need of the project (see *Section 2.5, Alternatives Considered but Eliminated from Detailed Analysis*).

R33-3 The close of the comment period was stated at the bottom of the signature page as being December 26, 2007, which allowed for the required comment period of 45 days as specified in the Council on Environmental Quality (CEQ), *Regulations for Implementing NEPA*, Section 1506.10, *Timing of Agency Action*. Also in accordance with the CEQ 1506.10, an extension to the comment period was not deemed warranted. The Draft EIS notice was published in the Federal Register on November 9, 2007, and that date officially started the 45-day comment period. The Draft EIS was made available for public review at the locations described in Chapter 7, Section 7.5.2 of the Draft EIS. The availability of the Draft EIS for comment was advertised with a display advertisement in the Billings Gazette on November 9, 2007, the Laurel Outlook on November 14, 2007, and the Red Lodge Carbon Co. News on November 15, 2007. To further support that reasonable notification and time were given for the comment period include the following actions: (1) Postcards announcing the public hearing were sent to businesses, local agencies and governments, landowners in the project area, and residents expressing interest in the proposed project, and individual addresses for the public hearing resulting in approximately 165 members of the public and agency representatives attending the meeting; and (2) More than 200 comments were received during the comment period for the Draft EIS.

From: Melissa Koepke [melissa_koepke@hotmail.com]
Sent: Wednesday, December 12, 2007 12:57 PM
To: MDT Comments - Rockvale EIS; Jennifer.Knight@ch2m.com&Subject=CommentonRockvaletoLaurelDraftEIS
Cc: steve.alters@ch2m.com
Subject: us 212

I travel this hwy 212 almost daily. I wonder why you do not propose on the alternate rout heading north somewhere around the Yellowstone count line to the interstate coming out west of Laurel around Wald road. R34-1

This would help to serve Laurel since there is not a west end exit to go both east and west from, and would help to alleviate there traffic problem. It would make a more direct rout to the interstate maybe even saving on travel time. The area it wold go through is scattered farm houses with very little rural development. The existing 212 from Laurel to Rockville would be a count road and alleviate the traffic problems from the current resident and future developments . I could continue on-- this is guest a thought.
Thank you for your time.
Richard Koepke
Belfry MT.

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R34-1 A separate connection between Rockvale and Interstate 90 (I-90) is beyond the scope of this project.

From: Studt, Mark
Sent: Monday, December 31, 2007 9:55 AM
To: steve.alters@ch2m.com; 'Knight, Jen/BOI'
Subject: FW: Rockvale EIS Comment

for your files

From: Streeter, Stefan
Sent: Thursday, December 27, 2007 1:34 PM
To: Barrett, Bruce; Bruner, Heidy; Grant, Paul; Hansen, Thomas; Martin, Tom; Neville, Gary; Semmens, Bill; Streeter, Stefan; Studt, Mark; Thunstrom, Eric; Woodmansey, Alan
Cc: Streeter, Stefan
Subject: Rockvale EIS Comment

I Received a phone call this morning at 11:10 from a concerned resident. She owns a home off of 212 at 72 DeVries Lane. She heard that the new roadway will be going adjacent to her property. I told her we would be sending her a map of the proposed alternative next week for review. She wanted it noted that she is not is support of the road. Her property appears to be 2 miles south of Rockvale and not impacted by the project. R35-1

Irene Shumway
PO Box 30221
Billings MT 59107

Concern over noise impacts to her property when roadway is taken off of bench and brought down to existing highway. R35-2

1

R35-1 Comment noted. Thank you.

R35-2 The noise analysis and impacts to the buildings in the project area are discussed in *Section 4.9, Noise*. Noise impacts would be dealt with in accordance with MDT's *Traffic Noise Analysis and Abatement: Policy and Procedure Manual* (2001).

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