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Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

County **GALLATIN**

May 23, 2005

RECEIVED
MAY 25 2005
LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

To Whom It May Concern:

Subject: Cooperating Agency Environmental Documentation

As a Cooperating Agency under the provisions of 23 CFR 771.111 the Montana Department of Transportation (MDT) is providing you a copy of this project's environmental documentation.

This environmental documentation complies with the provisions of 23 CFR 771.117(a) and (d) for categorically excluding this proposed project from further National Environmental Policy Act (NEPA) (42 U.S.C. 4321, et seq.) documentation requirements. The attached also complies with the provisions of 75-1-103 and 75-1-201, MCA (see ARM 18.2.237 and 18.2.261, MEPA "Actions that qualify for a Categorical Exclusion" as applicable to the MDT).

If you have any questions concerning the attached environmental documentation please call the MDT Environmental Services Division at (406) 444-7228.

Sincerely,

Jean A Riley

Jean A. Riley, P.E.
Engineering Bureau Chief
Environmental Services Division

S:\ADMIN\48_GEN_CORRESP\MAILINGS\COOP AGENCY LTR.DOC\JCTUS287N_CN5468

Attachment

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Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

David A. Galt, Director
Judy Martz, Governor

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FHWA
MONTANA DIVISION

April 12, 2005

Janice W. Brown, Division Administrator
Federal Highway Administration (FHWA)
2880 Skyway Drive
Helena, MT 59602

MASTER FILE COPY

Subject: **NH 50-1(21)9**
JCT US 287 - NORTH
(P.M.S. Control # 5468)

This is to request approval of this proposed project as a Categorical Exclusion (CE) under the provisions of 23 CFR 771.117(d), and the Programmatic Agreement as signed by the MONTANA DEPARTMENT OF TRANSPORTATION (MDT) and the FHWA on April 12, 2001. Copies of its Preliminary Field Review Report (dated October 4, 2004) and Project Location Map are attached. This proposed action also qualifies as a CE under ARM 18.2.261 (Sections **75-1-103** and **75-1-201, MCA**).

The following form provides the documentation required to demonstrate that all of the conditions are satisfied to qualify for a Programmatic Categorical Exclusion Approval (PCE) as initially agreed by the (former) MONTANA DEPARTMENT OF HIGHWAYS (MDOH) and the FHWA on December 6, 1989. (Note: An "_X_" in the "N/A" column is "Not Applicable" to, while one in the "UNK" column is "Unknown" at the present time for this proposed project.)

NOTE: A response in a box will require additional documentation for a Categorical Exclusion request in accordance with 23 CFR 771.117(d).

	YES	NO	N/A	UNK
1. This proposed project would have (a) significant environmental impact(s) as defined under 23 CFR 771.117(a).	☐	X		
2. This proposed project involves (an) unusual circumstance(s) as described under 23 CFR 771.117(b).	☐	X		
3. This proposed project involves one (or more) of the following situations where:				
A. Right-of-Way, easements, and/or construction permits would be required.		X		
1. The context or degree of the Right-of-Way action would have (a) substantial social, economic, or environmental effect(s).	☐		X	
2. There is a high rate of residential growth in this proposed project's area.			X	

Environmental Services
Phone: (406) 444-7228
Fax: (406) 444-7245

Web Page: www.mdt.state.mt.us
Road Report: (800) 226-7623
TTY: (800) 335-7592

An Equal Opportunity Employer

	YES	NO	N/A	UNK
3. There is a high rate of commercial growth in this proposed project's area.			X	
4. Work would be on and/or within approximately 1.6 kilometers (1± mile) of an Indian Reservation.		X		
5. There are parks, recreational, or other properties acquired/improved under *Section 6(f)* of the *1965 National Land & Water Conservation Fund Act* (**16 U.S.C. 460L**, *et seq.*) on or adjacent to proposed the project area.		X		
The use of such *Section 6(f)* sites would be documented and compensated with the appropriate agencies. (*e.g.*: MDFW&P, local entities, etc.).		☐	X	
6. Are there any sites either on, or eligible for the National Register of Historic Places with concurrence in determination of eligibility or effect under *Section 106* of the *National Historic Preservation Act* (**16 U.S.C. 470**, *et seq.*) by the State Historic Preservation Office (SHPO), which would be affected by this proposed project.		X		
7. There are parks, recreation sites, school grounds, wildlife refuges, historic sites, historic bridges, or irrigation that might be considered under *Section 4(f)* of the 1966 *U.S. DEPARTMENT OF TRANSPORTATION Act* (**49 U.S.C. 303**) on or adjacent to the project area.		X		
a. "Nationwide" Programmatic *Section 4(f)* Evaluation forms for these sites are attached.		☐	X	
b. This proposed project requires a full (*i.e.*: DRAFT & FINAL) *Section 4(f)* Evaluation.	☐		X	
B. The activity would involve work in a streambed, wetland, and/or other waterbody(ies) considered as "waters of the United States" or similar (*e.g.*: "state waters").	X			
1. Conditions set forth in *Section 10* of the *Rivers and Harbors Act* **(33 U.S.C. 403)** and/or *Section 404* under 33 CFR Parts 320-330 of the *Clean Water Act* **(33 U.S.C. 1251-1376)** would be met.	X	☐		
2. Impacts in wetlands, including but not limited to those referenced under Executive Order (E.O.) #11990, and their proposed mitigation would be coordinated with the Montana Inter-Agency Wetland Group.		☐	X	
3. A 124SPA Stream Protection permit would be obtained from the MDFW&P?	X			

	YES	NO	N/A	UNK
4. There is a delineated floodplain in the proposed project area under FEMA's Floodplain Management criteria.		X		
The water surface at the 100-year flood limit elevation would exceed floodplain management criteria due to an encroachment by the proposed project.	☐		X	
5. Tribal Water Permit would be required.		X		
6. Work would be required in, across, and/or adjacent to a river which is a component of, or proposed for inclusion in Montana's Wild and/or Scenic Rivers system as published by the U.S. Department of Agriculture, or the U.S. Department of the Interior.		X		
The designated National Wild & Scenic River systems in Montana are:				
a. Middle Fork of the Flathead River (headwaters to South Fork confluence).				
b. North Fork of the Flathead River (Canadian Border to Middle Fork confluence).				
c. South Fork of the Flathead River (headwaters to Hungry Horse Reservoir).				
d. Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge).				
In accordance with *Section 7* of the *Wild and Scenic Rivers Act* (**16 U.S.C. 1271 – 1287**), this work would be coordinated and documented with either the Flathead National Forest (Flathead River), or U.S. Bureau of Land Management (Missouri River).		☐	X	
C. This is a "Type I" action as defined under 23 CFR 772.5(h), which typically consists of highway construction on a new location or the physical alteration of an existing route which substantially changes its horizontal or vertical alignments or increases the number of through-traffic lanes.		X		
1. If yes, are there potential noise impacts?			X	
2. A Noise Analysis would be completed.		☐	X	
3. There would be compliance with the provisions of both 23 CFR 772 for FHWA's Noise Impact analyses and MDT's Noise Policy.		☐	X	

	YES	NO	N/A	UNK
D. There would be substantial changes in access control involved with this proposed project.		X		
If yes, would they result in extensive economic and/or social impacts on the affected locations?			X	
E. The use of a temporary road, detour, or ramp closure having the following conditions when the action(s) associated with such facilities:				
1. Provisions would be made for access by local traffic, and be posted for same.	X			
2. Adverse effects to through-traffic dependant businesses would be avoided or minimized.	X			
3. Interference to local events(*e.g.*: festivals) would be minimized to all possible extent.	X			
4. Substantial controversy associated with this pending action would be avoided.	X			
F. Hazardous wastes /substances, as defined by the U.S. Environmental Protection Agency (EPA) and/or the Montana Department of Environmental Quality (MDEQ), and/or (a) listed "Superfund" (under *CERCLA* or *CECRA*) site(s) are currently on and/or adjacent to this proposed project.		X		
All reasonable measures would be taken to avoid and/or minimize substantial impacts from same.			X	
G. The Montana Pollutant Discharge Elimination System's conditions (ARM 16.20.1314), including temporary erosion control features for construction would be met.	X			
H. Permanent desirable vegetation with an approved seeding mixture would be established on exposed areas.	X			
I. Documentation of an "invasive species" review to comply with both E.O.#13112 and the *County Noxious Weed Control Act* (**7-22-21, M.C.A.**), including directions as specified by the county(ies) wherein its intended work would be done.			X	

	YES	NO	N/A	UNK
J. There are "Prime" or "Prime if Irrigated" Farmlands designated by the Natural Resources Conservation Service on or adjacent to the proposed project area.		X		
If the proposed work would affect Important Farmlands, then an AD-1006 Farmland Conversion Impact Rating form would be completed in accordance with the *Farmland Protection Policy Act* (**7 U.S.C. 4201**, *et seq.*).			X	
K. Features for the *Americans with Disabilities Act* (**P.L. 101-336**) compliance would be included.			X	
L. A written Public Involvement Plan, would be completed in accordance with MDT's Public Involvement Handbook.	X			
4. This proposed project complies with the *Clean Air Act's Section 176(c)* (**42 U.S.C. 7521(a)**, as amended) under the provisions of 40 CFR 81.327 as it's either in a Montana air quality:				
A. "Unclassifiable"/attainment area. This proposed project is not covered under the EPA's September 15, 1997 Final Rule on air quality conformity.	X			
and/or				
B. "Nonattainment" area. However, this type of proposed project is either exempted from the conformity determination requirements (under EPA's September 15, 1997 Final Rule), or a conformity determination would be documented in coordination with the responsible agencies: (Metropolitan Planning Organizations, MDEQ's Air Quality Division, etc.).			X	
C. Is this proposed project in a "Class I Air Shed" (Indian Reservations) under 40 CFR 52.1382(c)(3)?		X		
5. Federally listed Threatened or Endangered (T/E) Species:				
A. There are recorded occurrences, and/or critical habitat in this proposed project's vicinity.	X			

	YES	NO	N/A	UNK
B. Would this proposed project result in a "jeopardy" opinion (under 50 CFR 402) from the Fish & Wildlife Service on any Federally listed T/E Species?		X		

The proposed project would not induce significant land use changes, nor promote unplanned growth. There would be no significant effects on access to adjacent property, nor to present traffic patterns.

This proposed project would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations (E.O.#12898). It also complies with the provisions of *Title VI* of the *Civil Rights Act* of 1964 (**42 U.S.C. 2000d**) under the FHWA's regulations (23 CFR 200).

In accordance with the provisions of 23 CFR 771.117(a), this pending action would not cause any significant individual, secondary, or cumulative environmental impacts. Therefore, the FHWA's concurrence is requested that this proposed project is properly classified as a Categorical Exclusion.

Jean A. Riley

Tom Hansen, P.E.
Engineering Section Supervisor
MDT Environmental Services

Concur Jeffrey A Patten, Date: 4/18/05
Federal Highway Administration

Attachments

"ALTERNATIVE ACCESSIBLE FORMATS OF THIS DOCUMENT WILL BE PROVIDED ON REQUEST."

cc: Jeff Ebert, Butte Administrator - MDT
Kent Barnes, P.E. – MDT Bridge Engineer
Paul Ferry, P.E. - MDT Highway Engineer
John H. Horton - MDT Right-of-Way Bureau Chief
Suzy Althof - MDT Contract Plans Section Supervisor
David W. Jensen, Supervisor - MDT Fiscal Programming Section
Tom Hansen - MDT Engineering Section Supervisor
file

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Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

RECEIVED
FEB 25 2005

Memorandum

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To: Distribution

From: Paul Ferry, P.E.
Highways Engineer

Date: February 15, 2005 PF

Subject: **NH 50-1(21)4**
Jct US 287-North and South
CN 5468
Work Type 180 & 181

Attached is the **Scope of Work Report** for the subject project, dated January 24, 2005. We request that those on the distribution review this report and submit your concurrence ~~two~~ 3 weeks from the above, signed date.

Your comments and recommendations are also requested if you do not concur or concur subject to certain conditions. When all personnel on the distribution list have submitted their concurrence, this report will be submitted to the Engineering Division Administrator for final approval.

Distribution:

J. H. Horton, R/W	w/attachment
M. Strizich, Materials	"
K. M. Barnes, Bridge	"
D. J. Blacker, Maintenance	"
Sandy Straehl, Planning	"
[redacted]y, Environmental	"
J. M. Ebert, Butte District	"
Mac McArthur, Construction	(2 copies)
D. E. Williams, Traffic	"

I Recommend approval with attached email

Jean A. Riley

Date 3/9/05

Return to Bill When "Initial Column" Completed By 3-8-05

Comments?	Y	N	Initials/Date
Biological P8	X		DW 2/28
Cultural		X	Jm 2/25
Haz Mat Joe		X	JR 2/28
Erosion Control		X	3/3
Engineer		X	3/2
Seeding		X	

cc:

FHWA,	w/attachment
L. Frazier, Engineering	"
D. W. Jensen, Fiscal Programming	"
Highways File,	"

DK:kjg:5468000RDSOWDist.doc

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Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Paul Ferry, P. E.
Highways Engineer

From: Damian Krings, P. E.
Road Design Engineer

Date: October 4, 2004

Subject: **NH 50-1(21)4**
Jct US 287-North & South
CN 5468
WORK TYPE 180 & 181

We request that you approve the attached **Preliminary Field Review Report** for the subject project.

Approved **LESLY TRIBELHORN** Date 10/4/04
Paul Ferry, P.E.
Highways Engineer

We are requesting comments from the following individuals, who have also received a copy of the Report. We will assume their concurrences if no comments are received by two weeks from the above, signed date.

Distribution: (all with attachment)

J. M. Ebert, Butte
P. Ferry, Highways
Damian Krings, Road Design
J. H. Horton, R/W
Matt Strizich, Materials
K. M. Barnes, Bridge
D. J. Blacker, Maintenance
Sandy Straehl, Planning
Jean Riley, Environmental
Mac McArthur, Construction-
(2 copies)
Duane Williams, Traffic
M. A. Goodman, Hydraulics
Danielle Bolan, Traffic
P. A. Jomini, Safety
B. A. Larsen, Survey
W. F. Scott, Utilities
Susan Rowell, Proj. Mngmnt
B. F. Juvan, Proj. Mngmnt
J. A. Walther, Engineering
R. Jackson, Geotechnical
Carol Strizich, Planning
Susan Sillick, Research

cc: D. W. Jensen, Fiscal Programming, w/attachment
File, w/attachment

JD:kjg:5468rdpfr001.doc

Preliminary Field Review Report

A preliminary field review was held April 27, 2004 for this project. The following attended:

Lesly Tribelhorn, P. E., District Engineering Services Supervisor-Butte
Jim Davies, P. E., Project Design Manager-Helena
Joe Olsen, District Project Engineer-Butte
Kevin Gilbert, P. E., Road Design-Helena
Roger Schultz, Road Design-Helena
Mary Gayle Padmos, Planning-Helena
Deb Wambach, Environmental-Helena
Ed Shea, Surfacing Design-Helena

Proposed Scope of Work

The scope of this project is to overlay from RP 3.5± to RP 8.5± and to mill and overlay from RP 8.5± to RP 9.5± to maintain existing width, (this section is approximately seven feet narrower than the first section.) This project will also provide seal and cover, and pavement markings, guardrail upgrades, and erosion protection at the Cougar Creek Bridge. The Helena Road Design Section will design this project. **(This project will be developed in English units.)**

Project Location and Limits

LOCATION: Gallatin County, T 13 S, R 5 E, sections 10, and 3, and T 12 S, R 5 E, sections 33, 34, 28, 27, 21, 22, 16, and 15, on National Highway Route 50/US 191. See map on page 10.

LIMITS: The project begins just south of the Madison River Bridge at RP 3.5±, the end of the West Yellowstone-North project. The project continues north and ends at the Grayling Creek project, STPHS 50-1(20)9, 2001-GRAYLING CR N OF US 20, CN 5026, English as-built station 80+50±, RP 9.5±, at the Aspen Loop approach. (See Related Projects section on page 7 of this report.)

Physical Characteristics

The project is on a principal arterial according the Montana 1992 Rural Functional Classification of Highways, revised 1995. The design speed is 60 mph for NH route (non-interstate) in rolling terrain.

Existing width and pavement thickness:
RP 3.508 to RP 8.531, width 37.1 ft, thickness varies, (last overlay) 0.30 ft to 0.35 ft.
RP 8.531 to RP 9.5±, width 30.5 ft, and thickness is 0.5ft.

The existing horizontal and vertical alignment will be perpetuated.

PvMS Index Numbers & Recommended Treatment for 2004*

Section	Survey Year	Ride	Rut	ACI	MCI
MP 3.508-7.348	2003	69.3	71	92.6	95
MP 7.348-8.531	2003	69.9	71.2	89.9	97.2
MP 8.531-10.5	2003	75.4	73.9	87.4	80.6

Recommendations

Section	Construction	Maintenance
MP 3.508-7.348	C_AC Thin Overlay	M_AC Thin Overlay
MP 7.348-8.531	C_AC Crack Seal & Cover	M_AC Crack Seal & Cover
MP 8.531-10.5	C_AC Crack Seal & Cover	M_AC Crack Seal & Cover

** This project will receive an overlay, seal and cover from RP 3.5± to RP 8.5±, and a mill and overlay from RP 8.5± to RP 9.5± due to its existing 30.5 ft width. The Preliminary Field Review personnel agreed this is the appropriate treatment.*

Traffic Data

RP 3.50 to RP 8.50		RP 8.50 to RP 10.50	
2003 ADT = 3350	(Present)	2003 ADT = 2390	(Present)
2004 ADT = 3440	(Letting Date)	2004 ADT = 2470	(Letting Date)
2024 ADT = 5630	(Design Year)	2024 ADT = 4920	(Design Year)
DHV = 910		DHV = 790	
D = ____ %		D = ____ %	
T = 11.5 %		T = 16.3 %	
EAL = 280		EAL = 320	
AGR = 2.5 %		AGR = 3.5 %	

Accident History

The following information is from Safety Management's memo dated August 17, 2004:

The analysis and evaluation are for National Highway Non-Interstate, Route 50, reference posts 3.5 to 8.5, for the dates January 1, 1994 through December 31, 2003.

ENGINEERING STUDY EVALUATION

DESCRIPTION: JCT US 287-SOUTH

ROUTE & MP: **N-50 RP 3.5 TO 8.5**

DATA TIME FRAME: 01-01-1994 TO 12-31-2003

STATEWIDE AVERAGE FOR RURAL NHS PRIMARY		STUDY AREA
All Vehicles Accident Rate:	1.30	1.57
All Vehicles Severity Index:	2.32	2.09
All Vehicle Severity Rate:	3.02	3.28
Truck Accident Rate:	1.15	2.24
Truck Severity Index:	2.33	2.07
Truck Severity Rate:	2.68	4.63
Truck Accidents:		15
Total Recorded Accidents:		85

VARIATIONS FROM AVERAGE OCCURRENCE:

- 34.1% icy (road condition) vs. 17.0% statewide rural non-interstate NHS average.
- 60.0% dark-not lighted (light condition) vs. 33.1% statewide for rural non-interstate NHS average.
- 42.4% wild animal (first harmful event) vs. 20.3% statewide rural non-interstate NHS average.
- 42.4% wild animal (most harmful event) vs. 19.9% statewide rural non-interstate NHS average.

ACCIDENT CLUSTERS AND SAFETY PROJECTS:

In 2000, the section between reference points 3.1 and 4.1 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified, it was noted that animal crossing signs were in place.

In 1999, the section between reference points 3.4 and 4.1 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified.

In 1994, the section between reference points 7.5 and 8.4 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified.

In 1997, the section between reference points 7.5 and 8.1 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified, it was noted that animal crossing signs were in place (bison crossing at RP 1.0±).

In 1999, the section between reference points 7.4 and 7.9 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified.

In 2000, the section between reference points 7.4 and 7.9 was identified as an accident cluster area. No feasible countermeasures to address a specific crash trend were identified, it was noted that animal crossing signs were in place.

A safety improvement project, STPHS 0002(386), N. of W. Yellowstone, UPN 3379 (rumble strips) between RP 000.5 and 008.2 was completed in August 2000. Also, a safety improvement project, STPHS 50-1(15)8, Gallatin Canyon, UPN 2544 (signs, guardrail) between RP 8.3 and 70.2 was completed in October 1998.

REMARKS:

Thirty-eight crashes were vehicle-wild animal collisions. Ninety-five percent of these crashes occurred when the light conditions were dark, dawn, or dusk. Check the signing for animal crossing.

Thirty-four out of 85 recorded crashes occurred when road conditions were icy, snowy or slushy.

Fifteen out of 85 recorded crashes involved commercial vehicles. Sixty percent of these crashes were vehicle-wild animal collisions, all of which occurred when the light conditions were dark.

The accident trend in the last 10 years has continued to be single vehicle collisions with wild animals at night.

Traffic will check animal-crossing signs from RP's 3.5 to 8.5.

The following information is from Safety Management's memo dated April 28, 2004:

The analysis was performed for National Highway 50, reference posts 8.3 to 10.5, for 1994 through 2003.

ENGINEERING STUDY EVALUATION

DESCRIPTION: JCT US 287-N

ROUTE & MP: **N-50 RP 8.3 TO 10.5**

DATA TIME FRAME: 1-1-1994 TO 12-31-2003

STATEWIDE AVERAGE FOR RURAL NON-INTERSTATE NHS		STUDY AREA
All Vehicles Accident Rate:	1.31	3.16
All Vehicles Severity Index:	2.34	2.04
All Vehicle Severity Rate:	3.08	6.45
Truck Accident Rate:	1.15	3.40
Truck Severity Index:	2.33	3.20
Truck Severity Rate:	2.68	10.88
Truck Accidents:		10
Total Recorded Accidents:		52

VARIATIONS FROM AVERAGE OCCURRENCE:

- 57.7% icy road conditions vs. 17.0% statewide average for rural non-interstate NHS routes
- 26.9% snow/blowing snow weather conditions vs. 11.4% statewide average for rural non-interstate NHS routes
- 48.1% dark-not lighted conditions vs. 33.1% statewide average for rural non-interstate NHS routes

ACCIDENT CLUSTERS AND SAFETY PROJECTS:

In 1994 a project was initiated to make safety improvements on N-50 between reference posts 8.3 and 70.2. The first phase of the improvements, signing and guardrail, was implemented in project STPHS 50-1(15)8 SAFETY IMPVTS-GALLATIN CANYON UPN 2544, completed in October of 1998. The second phase of the improvements, slope flattening and turn bays, will be implemented in project STPHS-NH 50-1(17)8 SAFETY FLTN-WID-GALLATIN CNYN UPN A544.

Curve signs and chevrons were installed by maintenance forces in November of 1993 between reference posts 9.6 and 10.5 as the result of a 1992 accident cluster investigation.

In 2001 the vicinity of the Grayling Creek Bridge, reference posts 9.9 to 10.3, was again identified as an accident cluster location. The initial safety improvement recommendation was a wider bridge with signing and flashers. After a field review and further analysis the recommendation was changed to roadway realignment and bridge replacement. This reconstruction will be implemented in project STPHS 50-1(20)10 2001-GRAYLING CR-N OF US 20 UPN 5026.

REMARKS:

Thirty of the fifty-two recorded crashes, including seven of the ten recorded truck crashes, occurred between reference posts 9.9 and 10.3. Reconstruction of this section of roadway and bridge is pending in the project noted above and there should be coordination with the Bridge Bureau with regard to that project.

There was also a concentration of crashes at the intersection with P-87/US 287. The most common crash is vehicles eastbound on P-87 failing to stop for the T intersection and going off the road on the east side of N-50. Since improvements to address this trend would be on P-87 and are outside the scope and limits of the subject project, the Safety Management section will pursue the improvements in the 2004 Safety Improvement Program.

This project will exclude the Grayling Creek project limits.

Major Design Features:

Design Speed

The design speed is 60 mph for this National Highway Route in rolling terrain on NH 50, US 191.

Clear Zone

Based on the design speed of 60 mph and a design ADT of 3350, the clear zone from the edge of the travel lane is:

FILL SLOPE	CLEAR ZONE
5:1 to 4:1	32-40 ft
6:1 or flatter	26-30 ft

This information is from the 2002, Roadside Design Guide.

Surfacing and Typical Section

The typical section:

RP 3.5 to 8.5	35.1 ft finished top 6:1 surfacing inslopes	overlay 0.15 ft
RP 8.5 to RP 9.5	30.5 ft finished top 6:1 surfacing inslopes	mill and fill 0.20 ft

The surfacing will be grade S.

All public approaches will be paved to the right-of-way and gravel private approaches will receive a 12 ft plant mix strip.

Alignment

The horizontal and vertical alignment will be perpetuated throughout this project.

Guardrail

Existing guardrail end sections will be replaced and the guardrail will be checked for present standard height. The bridge approach sections on the Madison River and Cougar Creek bridges will be brought up to current standards by replacement. The intersecting roadway terminal section at RP 8.3± on the east side of the roadway will remain in place.

Rumble Strips

Rumble strips exist from RP's 3.5± to 8.2± and will be replaced in kind and in the same locations with this project.

Geotechnical Considerations

There is no Geotechnical involvement on this project.

Hydraulics

Hydraulics will review the Cougar Creek Bridge site for scour problems that may exist or may result

from the erosion protection included in this project.

Bridges
There are two bridges within the project limits.

Madison River Bridge,	P00050 003+0.722-1, 1968
Cougar Creek Bridge,	P00050 007+0.562-1, 1964

The bridge rail may need revisions to allow a proper connection of the new approach sections.

The Madison River Bridge will not receive a plant mix overlay. The present surfacing leading into the bridge will be milled at both bridge ends to accommodate the 0.15 ft roadway overlay.

The surfacing on the Cougar Creek Bridge (4" of existing plant mix) will be completely milled off and a waterproof deck membrane will be put down on the bridge deck. The bridge deck will then be overlayed 0.15 ft with plant mix surfacing.

The Cougar Creek Bridge will receive erosion control protection at the bridge ends as needed.

Traffic
This project includes pavement markings. The Traffic and Safety Bureau will check animal-crossing signs from RP's 3.5 to 8.5, as requested in the accident history section of this report.

Safety Enhancements
The overlay will eliminate any existing rutting and the seal and cover will provide more skid resistance. Guardrail upgrades will also improve safety.

As-built Road Plans
RP 3.508 to RP 7.348: FHP 45-3(1), 1968, F 50-1(8)1, 1990
RP 7.348 to RP 8.531: ERFO 41-1, 1964, F 50-1(8)1, 1990
RP 8.229 to RP 8.531: ERFO 41-1, 1964, FLH 50-1(2), 1987
RP 8.531 to RP 9.326: FHP 42-1(1), 1962, FLH 50-1(2), 1987

Related Projects

CN	PROJECT #	PROJECT NAME	SCOPE	YEAR
5469	NH 50-1(22)0	WEST YELLOWSTONE-N	MILL/O'LAY, WT=181	2005
5026	STPHS 50-1(20)9	2001-GRAYLING CR N OF US 20	RECONSTRUCT, WT=140	2007
5796	NH 50-1( )11	YELLOWSTONE NATIONAL PARK	S & C, WT=183	2006
4800	NH 50-2(44)31	YELLOWSTONE PARK-BIG SKY	MILL, FILL, O'LAY, S&C, WT=160	2009
2544	STPHS-NH 50-1(17)	SAFETY IMPRVMTS-GALLATIN CAN	SLP FLT, TURNBAY, STR, WT=310	2006
5103	NH 50-2(49)57	EROSION PROT-GALLATIN CANYON	EROSIONPROT/GRAIL, WT=310	ASAP

Design Exceptions
No design exceptions are anticipated for this project.

Right-of-Way
No new right-of-way is anticipated for this overlay and mill and overlay project.

Utilities/Railroads

There are utilities present; however, they should not be impacted by this project.

There is no railroad involvement.

Survey

Survey will be needed at the Cougar Creek Bridge. Survey will include a DTM survey with cross sectioning the roadway from the bridge ends 50 ft, north and south. The survey will also include cross sections of the stream 36 ft and 200 ft, upstream and downstream, of the bridge, and thalweg shots every 20 ft upstream and downstream of the bridge.

Survey will also provide the existing guardrail heights for the entire project.

Environmental Considerations

Environmental Document

A programmatic categorical exclusion will be prepared for this project. SPA 124 will be needed for the erosion protection work at the Cougar Creek Bridge, which may include work in the water.

Endangered, Threatened Species/Large Carnivores/Sensitive Plant Species

Environmental will prepare any necessary special provisions.

Temporary Erosion and Sediment Control

The following note will be included in the Notes section of the plans:

If situations are observed during construction that may potentially impact water quality, including wetland areas, utilize Best Management Practices (BMP) and/or temporary erosion control measures as necessary to protect resource. Refer to Section 208 of the MDT Detailed Drawings (2002 English edition) for erosion and sediment control Best Management Practices. The installation of temporary erosion control measures will be paid as "miscellaneous work".

Traffic Control

A traffic control plan will be developed as the design of the project progresses. Traffic will be maintained during construction activities throughout the project.

Appropriate traffic control devices and signing will be used throughout the project in accordance with the *Manual of Uniform Traffic Control Devices.*

Public Involvement

It is anticipated that this project will require level "B" involvement and may include the following:

- A news release explaining the project, including a Department point of contact. Alternatively, contact with a newspaper or papers serving the area to develop a story and graphics that explain and illustrate the proposal. Radio and TV contacts.
- Personal contacts with local officials, interest groups.
- Personal contacts with adjacent landowners explaining final design.
- Construction notification and information during construction.

ost Estimate and Ready Date

ie preliminary cost estimate for this project is $817,000.

$ 813,700	Road work includes 10% CE, 10 % CN, 15% Mob, 20 % Traffic Control
$ 26,900	Bridgework, includes waterproof membrane and $20,000 lump sum
$ 840,600	**TOTAL (includes 3% inflation for road and bridge work)**

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: cost estimate will be updated as the design progresses.

:ording to the Tentative Construction Plan (Red Book) this project has a scheduled letting date of
ember 2005, (ready date of September 2005), depending on design and funding.

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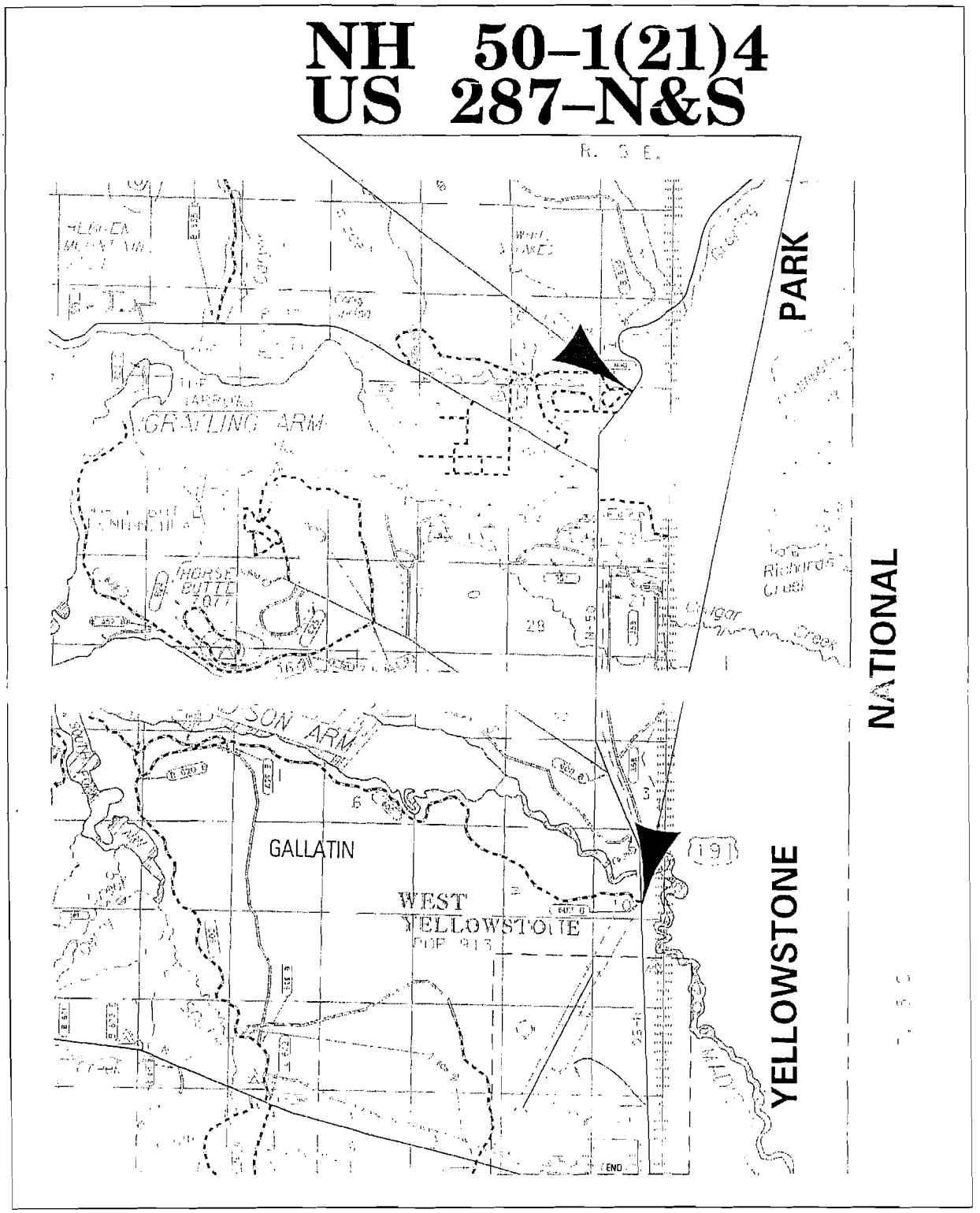
NH 50-1(21)4
US 287-N&S
GRAYLING ARM
HORSE BUTTE
Richards Creek
Cougar Creek
28
SON ARM
GALLATIN
WEST YELLOWSTONE
191
END
YELLOWSTONE
NATIONAL
PARK