FEDERAL HIGHWAY ADMINISTRATION, Federal Lands Highway

DAMAGE SURVEY REPORT

(Title 23, Federal-Aid System/Federal Domain)

Sheet No: 3 of 15

DSR No: **MORA-Rte. 102-1**

Disaster No: WA2007-1NPS

Applicant: Mount Rainier National Park	County: Pierce	State: WA	Inspection Date: 01/23/2007
Route 102 - Carbon River road MP 0.8 to MP 2.0			ADT:
Bridge Data:	Road Data:	Classification:	Photograph #:
Type:	Traveled Way Width: 18 ft	Surface Type: gravel	Thickness:4"-6"
ID#:	Shoulder Width:	Surface Type:	

Description and Cause of Damage: Flood flows of November 6 and 7, 2006 eroded river banks, resulting in flood flows overtopping riverbanks and flowing down the Carbon River road. Significant portions of the road were severely eroded and damaged.

Scope/Description of Repair: **MP 0.8 - 2.0** Repair severe surface scour with 4" gravel surfacing (MP 0.8-1.6); repair major washout with select borrow, topped with 4" compacted aggregate (MP 1.6-2.0).

COST ESTIMATE for EMERGENCY REPAIRS*

Quantity	Unit	Item Description	Unit Price	Cost
1	LS	MP. 1.4-1.7: Temporary stabilization to prevent further damage in fall/winter 07/08	$ 25,000.00	$25,000
		(cost includes A/E consultant, staffing, equipment, supplies)		
Proposed:	Force Account	Contract	Total Emergency Repairs	$25,000

COST ESTIMATE for PERMANENT REPAIRS*

Quantity	Unit	Item Description	Unit Price	Cost
1	LS	Mobilization, survey, testing, etc.	$30,000	$30,000
6700	CY	select borrow	$25.00	$167,500
1090	CY	roadway aggregate surfacing (5/8-in minus)	$50.00	$54,500
40	LF	42-inch CMP culvert	$100.00	$4,000
1	LS	clean out plugged Falls Cr 8x12 CMP culvert and excavate sediment trap	$12,000	$12,000
1	LS	Removal downed timber from roadway prism	$10,000	$10,000
1	LS	Revegetation (5%)	$17,000	$17,000
		Falls Creek culvert: excavate inlet basin to 2-ft below invert and clean debris		
		out of culvert to restore function; excavate buried Falls Cr channel, and connect to		
		existing Falls Cr channel; remove deposited material for approx 100' x 100' above		
		inlet to provide for a sediment trap; reuse material for general fill		
		Subtotal Permanent Repairs (continuation sheet)		
Proposed:	Force Account X	Contract	Total Permanent Repairs	$295,000

Identify Betterment, if any, and provide justification*: Install 4-inch minus angular or Class III riprap as an erosion resistant cap over fill as recommended in the 1996 hydraulic report from WFLHD. With this cap only the 5/8 inch minus aggregate surfacing would need to be replaced following future flooding events.

Preliminary Engineering 15%	$44,250
Construction Engineering 10%	$29,500
Right-of-Way	
Other: Compliance (5%)	$14,750
TOTAL ESTIMATED COST (Emergency and Permanent Repairs)	$408,500

Submitted By: (Name and Title) Eric Walkinshaw, Park Engineer		Signature: /s/ Eric Walkinshaw	2/13/2007
Reviewed By: (Name and Title) David F. Kruse, PWR ERFO Coordinator	Eligible **X** Ineligible	Signature: /s/ David F. Kruse	Date: 2/16/07
Recommended By: (Name and Title)	Eligible Ineligible	Signature:	Date:

*Attach Supplemental Sheets if necessary