



Detailed Damage Inspection Report FHWA Emergency Relief

Applicant Lewis County Public Works		County Lewis	FHWA Disaster No. ER-WA-21-01
Location of Damage 40098-Shorey Road (Route 5655), 0.621 miles south of State Route 6, on the Yes No east side of the road, and adjacent to the Newaukum River. Route is on BIA's inventory classified as Tribal Transportation Facility (TTF): ☐ ☒		Milepost From 0.598 To 0.618	Revision Number Click here to enter text.
Date, Cause, and Description of Damage The damage occurred January 13, 2021. Beginning January 3 rd , the Newaukum River began to swell in height and flowing at increased velocities. This caused ground saturation and bank erosion to Shorey Road. The slide includes an 8-foot strip of right of way that is 106' in length on the east side of the roadway, and adjacent to the river.			Local/State Project Number(s) HFO-WA/WAP3533S1161 Functional Class Urban Minor Collector

A breakdown of the cost estimate can be provided as a separate document attached to the DDIR. If the cost estimate (including preliminary and construction engineering) increases by 10% a revised DDIR must be approved by FHWA.

Temporary/Emergency Repair (work that is necessary to restore essential traffic, minimize the extent of damage, or protect the remaining facilities.) Not Applicable		Temporary/Emergency Repair ☐ 100% Federal Aid Original Estimate Click here to enter text. Revised Estimate Click here to enter text.
Method of Work: ☒ Local/State Force Account ☐ Emergency Contract		
Incidental Repair (The remaining portion of the work that is completed during the temporary/emergency repair.) Install temporary bank stabilization to ensure that the unstable slope adjacent to Shorey Road will remain until the permanent stabilization project can be permitted in 2022. Project will entail installing large woody debris along the toe of the Newaukum River for approximately 300' with steel anchors.		Incidental Repair Federal Aid % ☒ 86.5% ☐ 90.66% ☐ 100% Original Estimate \$575,000 Revised Estimate Click here to enter text.
Method of Work: ☐ Local/State Force Account ☒ Emergency Contract		
Permanent Restoration (This work is eligible for Federal participation at the normal pro-rata share and is administered using normal Federal-aid procedures.) Bank stabilization will include a combination of a continuous bank roughening Large Woody Material (LWM) jam and LWM barbs. The LWM barbs will redirect the flow away from the bank, while the continuous bank roughening LWM jam will protect the bank above. A rock layer will be placed between the bank and LWM to further protect the bank material against erosion. The bank protection will extend upstream, tie into the side-channel, and will reduce the likelihood that approaching flow could flank the bank protection. The extent of the downstream bank protection will be determined during the design phase of the project. Native vegetation plantings will be completed that will further stabilize the bank, and the LWM jam and LWM barbs.		Permanent Restoration Federal Aid % ☒ 86.5% ☐ 90.66% ☐ 100%
Preliminary Engineering		\$630,223
Right of Way		\$10,000
Construction		\$1,844,777
Total Perm. Restoration		\$2,485,000
Method of Work: ☐ Local/State Force Account ☒ Contract		Revised Total Perm. Restoration Click here to enter text.
		Total Estimated Cost \$3,060,000
		Revised Total Estimated Cost Click here to enter text.
Recommendation for Eligibility ☒ Yes ☐ No	Local Agency Representative Signature <i>[Signature]</i>	
Recommendation for Eligibility ☒ Yes ☐ No	State Representative Signature <i>[Signature]</i> Digitally signed by Michael A Williams, PE Date: 2021.08.12 16:21:08 -0700	
FHWA Approval	GARY MICHAEL MARTINDALE JR 2021.08.31 13:19:30 -07'00'	

Shorey Road Bank Stabilization - Incidental Repair

Engineer's Estimate

Description:

Incidental Repair - Intall temporary bank stabilization to ensure that the unstable slope adjacent to Shorey Road will remain until the permanent stabilization project can be permitted in 2022. Project will entail installing large woody debris along the toe of the Newaukum River for approximately 300' with steel anchors.

Item	Item Description	Quantity	Unit	Unit Cost	Total Cost
1	Preliminary Engineering	1	L.S.	\$50,000	\$50,000
2	Permitting	1	L.S.	\$25,000	\$25,000
3	Mobilization	1	L.S.	\$50,000	\$50,000
4	Temporary Traffic Control	1	L.S.	\$20,000	\$20,000
5	Permanent Signing	1	L.S.	\$10,000	\$10,000
6	Large Woody Debris	100	Each	\$4,000	\$400,000
7	Steel Anchors	200	Each	\$100	\$20,000
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Prepared by:



Total Estimated Cost - \$575,000

Shorey Road Bank Stabilization

Engineer's Estimate

Description:

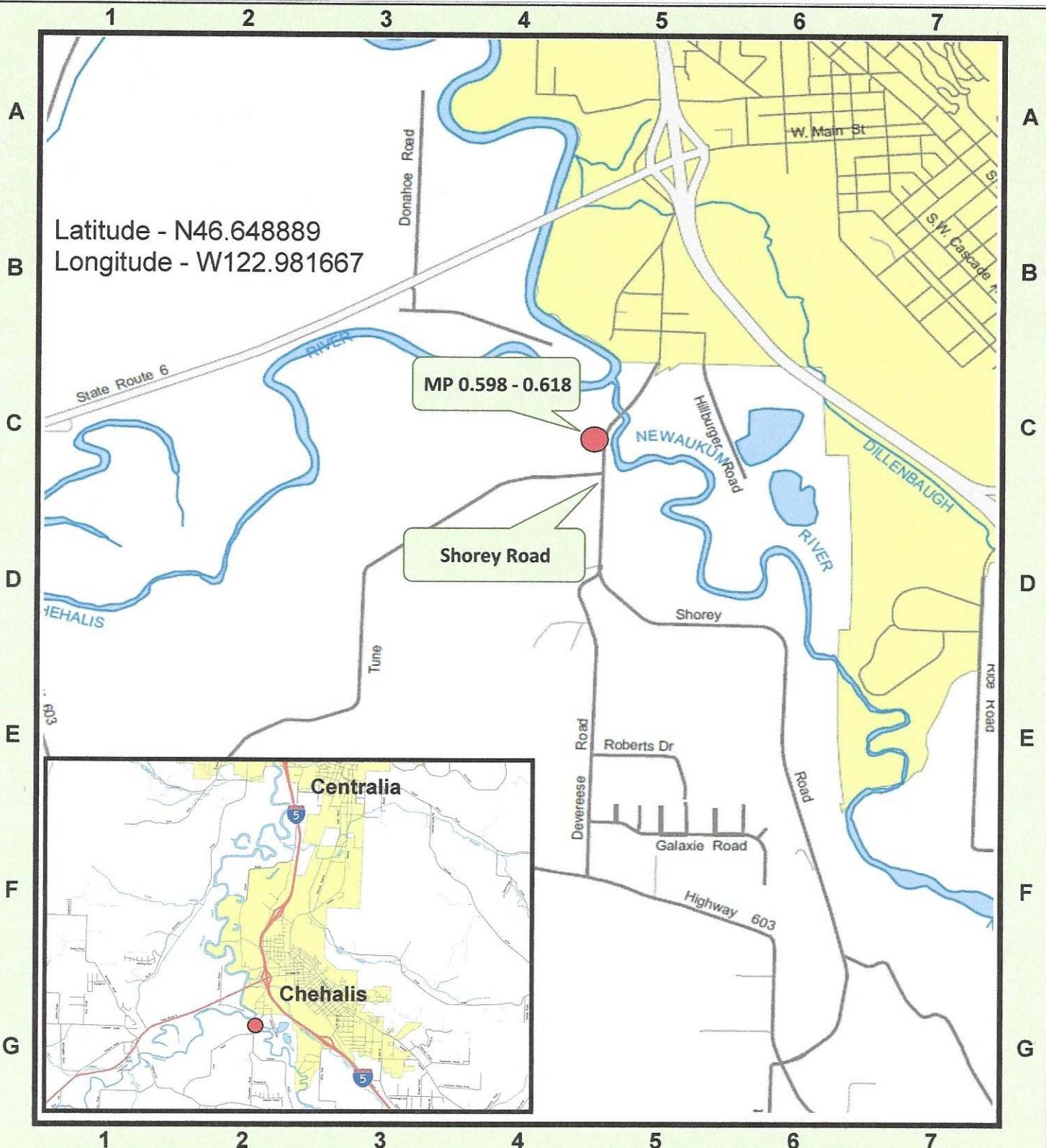
Bank stabilization including: Continuous bank roughening Large Woody Material (LWM) jam and LWM barbs. A rock layer will be placed between the bank and LWM to further protect the bank material against erosion. Native vegetation plantings will be completed that will further stabilize the bank, and the LWM jam and LWM barbs.

Item	Item Description	Quantity	Unit	Unit Cost	Total Cost
1	Preliminary Engineering:				
2	Design	1	L.S.	\$150,000	\$150,000
3	Hydraulic Study with Survey	1	L.S.	\$200,000	\$200,000
4	Wetlands/OHW Delineation	1	L.S.	\$7,830	\$7,830
5	Geomorphic Study	1	L.S.	\$15,000	\$15,000
6	Cultural Resources	1	L.S.	\$60,000	\$60,000
7	Environmental Permitting	1	L.S.	\$10,000	\$10,000
8	Right of Way	1	L.S.	\$10,000	\$10,000
9	Consultant Administration	1	L.S.	\$187,393	\$187,393
10					
11	Construction:				
12	Mobilization	1	L.S.	\$139,650	\$139,650
13	Site Preparation & Clearing and Grubbing	1	L.S.	\$22,000	\$22,000
14	Rock for Erosion and Scour Protection, Class B	3,700	Ton	\$110	\$407,000
15	Logs for Bank Roughening	100	Each	\$2,750	\$275,000
16	Engineered Log Spurs	5	Each	\$41,250	\$206,250
17	Native Vegetation Plantings	1	L.S.	\$11,000	\$11,000
18	Water Isolation	1	L.S.	\$132,000	\$132,000
19	Traffic Control	1	L.S.	\$44,000	\$44,000
20	Erosion & Sedimentation Control	1	L.S.	\$109,725	\$109,725
21	Contingency 30%	1	L.S.	\$329,175	\$329,175
22	Construction Management	1	L.S.	\$168,977	\$168,977
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Total Estimated Cost - \$2,485,000

Prepared by:





Vicinity Map
Lewis County, Washington
40098 - Shorey Road

milepost 0.598 - 0.618