

P2 Bridge Preservation - Scour Repair

2009-11 Bien Priority Array

(Sorted by Priority#)



09-11 #	Bridge Number	Bridge Name	Mile post	Width	Length	Region	Bridge Item\$'s
1	9/222	THUNDER CR	63.50	24.0	31	Northwest	\$84,500
1	20/232	COAL CR	69.93	36.0	38	Northwest	\$110,500
3	410/101	WHITE R	21.99	32.0	292	Northwest	\$141,000
11	2/39	ANDERSON CR	34.25	25.0	93	Northwest	\$90,000
12	2/40	S FK SKYKOMISH R	35.21	24.0	446	Northwest	\$140,000
14	2/119	S FORK SKYKOMISH RIVER	51.02	24.0	260	Northwest	\$110,000
Total Number of Bridges = 6					Total of Bridge Item\$ =		\$676,000



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Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0001706C	Bridge Number: 2/39	Bridge Name: ANDERSON CR	State Route: 2 Mile Post: 34.25	Northwest Cnty: Snohomish	
Year Built: 1933 Rebuilt:	Span Type: CTB	ADT: 6726 ADT Truck Pct: 10 %	Structure Length: 93 ft. Width: 25 ft.	main span 3 aprch: 0	Detour Length: 99 miles
Substructure Stability: Code: 1 Spread footing, simple spans.		Streambed Material: 3 Gravel	Scour History: Code: H History of scour problems but scour conditions are now stable.		Last Scour repair Project Yr: 1996 C#: 005000
Scour Code: 3	Scour Rating Description:	Bridge is scour critical; bridge foundations determined unstable for calculated scour depths: 1) Within limits of footings or piles (Figure WB 76-80B) 2) Below footing base or pile tips (Figure WB 76-80C).		Substr Code: 6	sufficiency_rating: 58.57 FO



Deficiencies:

Photo 1 shows bridge scour, 6/2006. Photo 2 shows exposed footing at SE retaining wall, 4/2004. Piers 2 and 3 are scour critical. Rip rap must be maintained. Thalweg elevation is less than 5' above footing bottom elevation. Last repair by contract was in 1996.

First Noted: 4/28/2004

BPO Repair List Priority: 1

Funding - P2 or M: P2

07-09 Priority Rank: 7

09-11 Priority Rank: 11

Recommended Action:

BPO - Replace missing rip rap at SE retaining wall. Replace missing rip rap at the downstream side of P3. Bridge Management Unit - Program a P2 funded project, prioritize against other needs for 2009-11.

PIN:

Bridge\$ Est: \$90,000

Total\$ Est: \$457,000

Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0001667A	Bridge Number: 2/40	Bridge Name: S FK SKYKOMISH R	State Route: 2 Mile Post: 35.21	Northwest Cnty: Snohomish	
Year Built: 1933 Rebuilt:	Span Type: STrus CTB	ADT: 6726 ADT Truck Pct: 10 %	Structure Length: 446 ft. Width: 24 ft.	main span 1 aprch: 4	Detour Length: 99 miles
Substructure Stability: Code: 3 Pile foundation, simple spans.	Streambed Material: 3 Gravel	Scour History: Code: C Current scour problems.	Last Scour repair Project Yr: 1996 C#: 005004		
Scour Code: 3	Scour Rating Description:	Bridge is scour critical; bridge foundations determined unstable for calculated scour depths: 1) Within limits of footings or piles (Figure WB 76-80B) 2) Below footing base or pile tips (Figure WB 76-80C).		Substr Code: 5	sufficiency_rating: 41.98 FO



Deficiencies:

Approach CTB piers on spread footings. Main Truss piers on piles. There is riprap and river boulders at the east face and the nose of Pier 3. The tail and west side of Pier 3 has up to 3' of the side of the footing exposed (no undermining found). The upstream bank is eroding next to pier 2. The last contract repair was in 1996.

First Noted: 12/15/1998

BPO Repair List Priority: 1

Funding - P2 or M: P2

07-09 Priority Rank:

09-11 Priority Rank: 12

Recommended Action:

BPO - Repair the missing riprap at the downstream end of pier 3.
Bridge Management Unit - Program a P2 funded project, prioritize against other needs for 2009-11.

PIN:

Bridge\$ Est: \$140,000

Total\$ Est: \$675,000

Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0002561B	Bridge Number: 2/119	Bridge Name: S FORK SKYKOMISH RIVER	State Route: 2 Mile Post: 51.02	Northwest Cnty: King	
Year Built: 1940 Rebuilt:	Span Type: CTB	ADT: 4882 ADT Truck Pct: 15 %	Structure Length: 260 ft. Width: 24 ft.	main span 5 aprch: 0	Detour Length: 4 miles
Substructure Stability: Pile foundation, continuous spans.	Code: 4	Streambed Material: 3 Gravel	Scour History: Code: C Current scour problems.	Last Scour repair Project Yr: 1996 C#: 005005	
Scour Code: 3	Scour Rating Description:	Bridge is scour critical; bridge foundations determined unstable for calculated scour depths: 1) Within limits of footings or piles (Figure WB 76-80B) 2) Below footing base or pile tips (Figure WB 76-80C).		Substr Code: 7	sufficiency_rating: 75.05 FO



Deficiencies:

No rip rap along pier 3 columns. Up to 3 ft. exposed of face on Southeast corner. Top of pile cap is totally exposed. East face stream side footing is totally exposed. Sufficient pile length.

First Noted: 6/12/2006

BPO Repair List Priority: 1

Funding - P2 or M: P2

07-09 Priority Rank: 31

09-11 Priority Rank: 14

Recommended Action:

BPO - Rip rap along Pier 3 columns. Up to 3 ft. exposed of face on southeast corner. Top of pile cap is totally exposed. East face stream side footing is totally exposed.
Bridge Management Unit - Program a P2 funded project, prioritize against other needs for 2009-11.

PIN:

Bridge\$ Est: \$110,000

Total\$ Est: \$598,000

Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0003349A	Bridge Number: 9/222	Bridge Name: THUNDER CR	State Route: 9 Mile Post: 63.50	Northwest Cnty: Skagit	
Year Built: 1900 Rebuilt: 1947	Span Type: CTB	ADT: 3200 ADT Truck Pct: 10 %	Structure Length: 31 ft. Width: 24 ft.	main span 1 aprch: 0	Detour Length: 3 miles
Substructure Stability: Code: 1 Spread footing, simple spans.	Streambed Material: 3 Gravel	Scour History: Code: C Current scour problems.	Last Scour repair Project Yr: C#:		
Scour Code: 2	Scour Rating Description:	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations. Immediate action is required to provide scour countermeasures.		Substr Code: 5	sufficiency_rating: 63.68 FO



Deficiencies:

The footings are exposed. Stream bear against SE wingwall and corner of the bridge (Up to 3' deep scour hole) and shifts across to the East corner of the North abutment (15" deep scour hole). The N. abut. Footing is exposed up to 1' deep along 70% of its length. Bridge is not aligned with stream. Large trees on NE bank deflect the stream flow to SE wingwall.

First Noted: 3/19/2003

BPO Repair List Priority: 1

Funding - P2 or M: P2

07-09 Priority Rank: 1

09-11 Priority Rank: 1

Recommended Action:

BPO - Repair the Scour hole (up to 3 ft. deep) at SE corner of the bridge, 1 ft. deep Scour hole at NE corner and the scour hole along 70% of the North Abutment where top of footing is exposed, and up to 1 ft. of the footing side is exposed.
Bridge Management Unit - Scour Repair PS&E complete, Construction of scour repair planned for 2008.

PIN:

Bridge\$ Est:

Total\$ Est: \$541,000

Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0003478B	Bridge Number: 20/232	Bridge Name: COAL CR	State Route: 20 Mile Post: 69.93	Northwest Cnty: Skagit
Year Built: 1948 Rebuilt:	Span Type: CTB	ADT: 8100 ADT Truck Pct: 10 %	Structure Length: 38 ft. Width: 36 ft.	main span 1 aprch: 0 Detour Length: 3 miles
Substructure Stability: Code: 1 Spread footing, simple spans.	Streambed Material: 5 Cobbles	Scour History: Code: C Current scour problems.	Last Scour repair Project Yr: C#:	
Scour Code: 2	Scour Rating Description:	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations. Immediate action is required to provide scour countermeasures.	Substr Code: 5	sufficiency_rating: 79.59



<p>Deficiencies:</p> <p>Exposed Footings. Top of northeast wing wall spread footing is exposed (photo 1). History of exposure of spread footings (1'-9" footing on 2'-6" seal). Riprap required. Photo 2 shows Downstream end of the bridge, showing degradation of creek bed.</p>	First Noted: 10/1/1996
	BPO Repair List Priority: 1
	Funding - P2 or M: P2
	07-09 Priority Rank: 1
	09-11 Priority Rank: 1
<p>Recommended Action:</p> <p>BPO - Cover the exposed footings with riprap. Build a rock drop structure (9"-1' drop) at the downstream end of the bridge. See USACOE plan sheets for details. Remove all cottonwood trees and debris north of bridge. Cottonwood trees have been cut and dropped into creek north of bridge. Bridge Management Unit - Scour Repair PS&E complete, Construction of scour repair planned for 2008.</p>	PIN:
	Bridge\$ Est:
	Total\$ Est: \$520,000

Bridge Foundation Scour Repair

Northwest Region

Bridge ID: 0003523A	Bridge Number: 410/101	Bridge Name: WHITE R	State Route: 410 Mile Post: 21.99	Northwest Cnty: Pierce	
Year Built: 1949 Rebuilt:	Span Type: STrus CTB	ADT: 16066 ADT Truck Pct: 8 %	Structure Length: 292 ft. Width: 32 ft.	main span 1 aprch: 3	Detour Length: 38 miles
Substructure Stability: Code: 1 Spread footing, simple spans.		Streambed Material: 3 Gravel	Scour History: Code: C Current scour problems.		Last Scour repair Project Yr: C#:
Scour Code: 2	Scour Rating Description:	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations. Immediate action is required to provide scour countermeasures.		Substr Code: 5	sufficiency_rating: 53.1



<p>Deficiencies:</p> <p>Pier 2 consists of spread footings 14' x 16' and 2.25' on 4' seals. The as-built plans say the foundation is on cemented sands. The footing at North end of Pier is exposed 1.3ft on the upstream side and 2.4ft on the down stram side. Hydraulics Office 5/28/96 - This bridge is scour critical if the thalweg migrates to Pier 2 or Pier 3. Riprap must be maintained at pier 2. Calc scour depth is 10ft below bottom of footings.</p>	First Noted: 7/18/2005
	BPO Repair List Priority: 1
	Funding - P2 or M: P2
	07-09 Priority Rank: 2
	09-11 Priority Rank: 3
<p>Recommended Action:</p> <p>BPO - Place heavy loose riprap, 2 layers thick over footing, at a minimum of 2:1 slope. Bridge Management Unit - The PE phase (\$80,000) for this P2 funded project is part of the 2007-09 bien.</p>	<p>PIN:</p> <p>Bridge\$ Est: \$141,000</p> <p>Total\$ Est: \$646,000</p>