Appendix E – Bank Hardening

Table E-1. Existing Riverbank Hardening.

Location	Station/MP	Reach	By	Length
GPS Location		1	Non-NPS	50
GPS Location		1	Non-NPS	50
GPS Location		1	Non-NPS	300
GPS Location		1	Non-NPS	375
N of Ira Rd	1380+00	1	NPS	375
4000' S of Bloanz Rd	1340+00	1	NPS	260
TOTAL, REACH 1				**1410**
GPS Location		2	Non-NPS	175
GPS Location		2	Non-NPS	80
Lock 29 Trailhead		2	NPS	220
SR 303	1132+00	2	NPS	50
2500' S of 303	1160+00	2	NPS	570
1.8 mi. S of 303	1233+00	2	NPS	240
TOTAL, REACH 2				**1335**
GPS Location		3	Non-NPS	200
Stumpy Basin	1060+00	3	NPS	400
North of Lock #30	1100+09	3	NPS	2060
Boston Store	1010+00	3	NPS	200
TOTAL, REACH 3				**2860**
GPS Location		4	Non-NPS	50
GPS Location	55.3	4	Non-NPS	190
GPS Location		4	Non-NPS	120
GPS Location		4	Non-NPS	225
GPS Location		4	Non-NPS	250
GPS Location		4	Non-NPS	500
8000 S of SR 82	57.2	4	NPS	300
TOTAL, REACH 4				**1635**
	805+00	5	Non-NPS	150
GPS Location		5	Non-NPS	120
GPS Location		5	Non-NPS	300
TOTAL, REACH 5				**570**
	758+00	6	Non-NPS	1800
	59.3	6	Non-NPS	1000
	59.6	6	Non-NPS	200
GPS Location		6	Non-NPS	150

Location	Station/MP	Reach	By	Length
GPS Location		6	Non-NPS	1250
GPS Location		6	Non-NPS	180
	61.2	6	Non-NPS	400
GPS Location		5	Non-NPS	250
	680+00	6	NPS	275
2200' S of Canal Rd & Sagamore Rd	677+00	6	NPS	280
2400' S of Canal Rd & Sagamore Rd	675+00	6	NPS	1600
5500' N of SR 82	710+00	6	NPS	300
1400' S of Canal Rd & Sagamore Rd	650+00	6	NPS	650
1400' S. of Fitzwater	61.2	6	NPS	225
3500' S of Fitzwater	60.7	6	NPS	275
RM 17.7	630+00	6	NPS	550
TOTAL, REACH 6				**9385**
Stone Rd.		7	Non-NPS	700
	530+00	7	Non-NPS	350
GPS Location		7	Non-NPS	330
GPS Location		7	Non-NPS	98
GPS Location		7	Non-NPS	1000
	448+00	7	Non-NPS	310
GPS Location		7	Non-NPS	900
GPS Location		7	Non-NPS	180
600 N of Riverview	62.8	7	NPS	100
2400' S of Rockside Rd	63.8	7	NPS	300
Hathaway Road	515+00	7	NPS	500
TOTAL, REACH 7				**4768**
GPS Location		8	Non-NPS	230
GPS Location		8	Non-NPS	1200
Culvert		8	Non-NPS	50
Culvert		8	Non-NPS	50
GPS Location	65	8	Non-NPS	600
TOTAL, REACH 8				**2130**

Table E-2. Proposed Bank Hardening for Valley Railway Milepost Locations.

MILEPOST	RIVER SECTION	EST. MAX. ARMORING LENGTH	ALT 1 ARMORING LENGTH	ALT 2 ARMORING LENGTH	ALT 2 RECOMMENDATIONS
65.73	8	1000	1000	0	Condition A
TOTAL	**8**		**1000**	**0**	
64.3	7	270	270	270	Condition C
64.14 to 64.17	7	500	500	0	Condition A
63.05 to 63.08	7	350	350	0	Condition B
62.6	7	540	540	0	Condition A
62.42	7	250	250	250	Condition D
TOTAL	**7**		**1910**	**520**	
61.26	6	50	50	50	Condition C
61.1	6	450	450	0	Condition B
60.86	6	1150	1150	0	Condition A
60.7	6	240	240	0	Condition A
59.34 to 60.0	6	150	150	150	Condition C
TOTAL	**6**		**2040**	**200**	
57.94	5	100	100	0	Condition A
57.77	5	240	240	0	Condition A
TOTAL	**5**		**340**	**0**	
57.36	4	420	420	0	Condition B
57.24	4	320	320	0	Condition B
55.31 to 55.36	4	140	140	140	Condition C
TOTAL	**4**		**880**	**140**	
52.5	2	100	100	0	Condition A
TOTAL	**2**		**100**	**0**	

Table E-3. Proposed Bank Hardening for Towpath Trail Locations.

STATION	RIVER SECTION	EST. MAX. ARMORING LENGTH	ALT 1 ARMORING LENGTH	ALT 2 ARMORING LENGTH	ALT 2 RECOMMENDATIONS
448+00	7	300	300	0	Condition A
514+00	7	100	100	100	Condition C
TOTAL	**7**		**400**	**100**	
610+00	6	225	225	0	Condition A
680+00	6	650	650	0	Condition A
710+00	6	50	50	50	Condition C
758+00	6	630	630	0	Condition A
TOTAL	**6**		**1555**	**50**	
781+00	5	150	150	0	Condition A
790+00	5	740	740	0	Condition A
805+00	5	280	280	0	Condition A
TOTAL	**5**		**1170**	**0**	
875+00	4	400	400	0	Condition B
900+00	4	300	300	0	Condition A
TOTAL	**4**		**700**	**0**	
1010+00	3	140	140	140	Condition C
1045+00	3	390	390	0	Condition A
1075+00	3	600	600	0	Condition A
1100+00	3	180	180	0	Condition B
1107+00	3	500	500	0	Condition B
1115+00	3	300	300	300	Condition C
TOTAL	**3**		**2110**	**440**	
1130+00	2	160	160	0	Condition A
1233+00	2	120	120	120	Condition C
TOTAL	**2**		**280**	**120**	

Table E-4. Proposed Bank Hardening for Bridge Locations.

BRIDGE	RIVER SECTION	EST. MAX. ARMORING LENGTH	ALT 1 ARMORING LENGTH	ALT 2 ARMORING LENGTH
FITZWATER ROAD	4	100	100	100
RAIL SPUR	6	100	100	100

Table E-5. Summary of Existing and Proposed Bank Armoring Condtions.

Study Reach Number	River Length (feet)	Existing Armoring		Proposed Bank Armoring Conditions							
		Length (ft.)		Alt. 1 - No Action				Alt. 2 - Riverbank Management			
			%	Length (ft.)	%	% Change	Inc. Length (ft.)	Length (ft.)	%	% Change	Inc. Length (ft.)
1	43,200	1,410	3.3%	1,410	3.3%	0.0%	0	1,410	3.3%	0.0%	0
2	44,200	1,335	3.0%	1,715	3.9%	28.5%	380	1,455	3.3%	9.0%	120
3	29,000	2,860	9.9%	4,970	17.1%	73.8%	2,110	3,300	11.4%	15.4%	440
4	45,400	1,635	3.6%	3,315	7.3%	102.8%	1,680	1,875	4.1%	14.7%	240
5	15,200	5,800	3.8%	7,310	13.7%	264.9%	1,510	5,800	3.8%	0.0%	0
6	45,800	4,155	20.5%	7,850	28.6%	39.4%	3,695	4,505	21.3%	3.7%	350
7	32,000	4,768	14.9%	7,078	22.1%	48.4%	2,310	5,388	16.8%	13.0%	620
8	11,000	2,130	19.4%	3,130	28.5%	46.9%	1,000	2,130	19.4%	0.0%	0
TOTAL	265,800	24,093	9.1%	36,778	13.8%	52.7%	12,685	25,863	9.7%	7.3%	1,770