

Appendix P

Part 3

In Stream Work and Riparian Buffer Creation



**U.S. Army Corps of Engineers
Memphis District**

IN-STREAM WORK
STREAM CHANNEL / STREAM RESTORATION or ENHANCEMENT AND RELOCATION
WORKSHEET

ST. JOHN'S

Stream Type	Ephemeral 0.05	Intermittent 0.4	Perennial Stream			
			<15' 0.4	15'-30' 0.6	30'-50' 0.8	>50' 1.0
Priority Area	Tertiary 0.05		Secondary 0.2		Primary 0.4	
Existing Condition	Not Applicable 0		Functionally Impaired 0.4		Moderately Functional 0.05	
Net Benefit	Stream Relocation 0.1	Stream Channel Restoration / Stream Enhancement				
		Relocated Stream with In-Stream features 0.5	Moderate 1.0	Good 2.0	Excellent 3.5	
Monitoring/Contingency	Level I 0.05			Level II 0.3	Level III 0.5	
Control / Site Protection	Corps approved site protection without third party grantee 0.1			Corps approved site protection recorded with third party grantee, or transfer of title to a conservancy 0.4		
Mitigation Construction Timing	Schedule 1 0.3			Schedule 2 0.1	Schedule 3 0	

Factors	Net Benefit 1	Net Benefit 2	Net Benefit 3	Net Benefit 4	Net Benefit 5	Net Benefit 6
Stream Type	1.0	1.0	0.8	0.6		
Priority Area	0.05	0.05	0.05	0.05		
Existing Condition	0.4	0.4	0.4	0.4		
Net Benefit	2.0	2.0	1.0	1.0		
Monitoring/Contingency	0.3	0.3	0.3	0.3		
Control/Site Protection	0.4	0.4	0.4	0.4		
Mitigation Construction Timing	0.1	0.1	0.1	0.1		
Sum Factors (M)=	4.25	4.25	3.05	2.85		
Stream length in Reach (do not count each bank separately) (LF)=	12,950.0	6,450.0	43,150.0	59,661.0		
Credits (C) = M X LF	55,037.5	27,412.5	131,607.5	170,042.4		
Total Credits Generated C X Mitigation Factor (MF) =	55,037.5	27,412.5	131,607.5	170,042.4		

Total Channel Restoration/Relocation Credits Generated = 384,099.9

**RIPARIAN BUFFER CREATION, ENHANCEMENT, RESTORATION AND PRESERVATION
WORKSHEET**

ST. JOHNS

Stream Type	Ephemeral 0.05	Intermittent 0.2	Perennial 0.4	
Priority Area	Tertiary 0.05	Secondary 0.2	Primary 0.4	
Net Benefit (for each side of stream)	Additional Improvements (select values from Table 1 times 1.2 multiplier)	Riparian Creation, Enhancement, Restoration, and Preservation Factors (select values from Table 1) (MBW = Minimum Buffer Width = 25' + 2' / 1% slope)		
System Protection Credit	Condition : MBW restored or protected on both streambanks To calculate:(Net Benefit Stream Side A + Net Benefit Stream Side B) / 2			
Monitoring/Contingency (for each side of stream)	Level I 0.05	Level II 0.15	Level III 0.25	
Control / Site Protection	Corps approved site protection without third party grantee 0.05		Corps approved site protection recorded with third party grantee, or transfer of title to a conservancy 0.2	
Mitigation Construction Timing (for each side of stream)	Schedule 1 0.15		Schedule 2 0.05	Schedule 3 0
Temporal Lag (Years)	Over 20 -0.3	10 to 20 -0.2	5 to 10 -0.1	0 to 5 0

Factors	Net Benefit 1	Net Benefit 2	Net Benefit 3	Net Benefit 4	Net Benefit 5	Net Benefit 6
Stream Type	0.4	0.4	0.4	0.4	0.4	0.2
Priority Area	0.05	0.05	0.05	0.05	0.05	0.05
Net Benefit	Stream Side A	0.4	0.4	0.4	0.4	0.4
	Stream Side B	0	0	0	0	0
System Protection Credit Condition Met (Buffer on both sides)	0.2	0.2	0.2	0.2	0.2	0.2
Monitoring/Contingency	Stream Side A	0.15	0.15	0.15	0.15	0.15
	Stream Side B	0	0	0	0	0
Control /Site Protection	0.2	0.2	0.2	0.2	0.2	0.2
Mitigation Construction Timing (none for primarily riparian preservation) < 10% requires planting)	Stream Side A	0.05	0.05	0.05	0.05	0.05
	Stream Side B	0	0	0	0	0
Temporal Lag	-0.2	-0.2	0	0	-0.2	0
Sum Factors (M)=	1.25	1.25	1.45	1.45	1.25	1.25
Linear Feet of Stream Buffer (LF)= (don't count each bank separately)	12,950	6,450	43,150	59,621	14,658.7	99,250
Credits (C) = M X LF	16,187.5	8,062.5	62,527.5	86,512.8	18,323.4	124,062.5
Total Credits Generated C X Mitigation Factor (MF) =	16,187.5	8,062.5	62,527.5	86,512.8	18,323.4	124,062.5

Total Riparian Restoration Credits Generated = 315,716.2

**RIPARIAN BUFFER CREATION, ENHANCEMENT, RESTORATION AND PRESERVATION
WORKSHEET**

NEW MADRID

Stream Type	Ephemeral 0.05	Intermittent 0.2	Perennial 0.4	
Priority Area	Tertiary 0.05	Secondary 0.2	Primary 0.4	
Net Benefit (for each side of stream)	Additional Improvements (select values from Table 1 times 1.2 multiplier)	Riparian Creation, Enhancement, Restoration, and Preservation Factors (select values from Table 1) (MBW = Minimum Buffer Width = 25' + 2' / 1% slope)		
System Protection Credit	Condition : MBW restored or protected on both streambanks To calculate:(Net Benefit Stream Side A + Net Benefit Stream Side B) / 2			
Monitoring/Contingency (for each side of stream)	Level I 0.05	Level II 0.15	Level III 0.25	
Control / Site Protection	Corps approved site protection without third party grantee 0.05		Corps approved site protection recorded with third party grantee, or transfer of title to a conservancy 0.2	
Mitigation Construction Timing (for each side of stream)	Schedule 1 0.15		Schedule 2 0.05	Schedule 3 0
Temporal Lag (Years)	Over 20 -0.3	10 to 20 -0.2	5 to 10 -0.1	0 to 5 0

Factors		Net Benefit 1	Net Benefit 2	Net Benefit 3	Net Benefit 4	Net Benefit 5	Net Benefit 6
Stream Type		0.4					
Priority Area		0.05					
Net Benefit	Stream Side A	0.4					
	Stream Side B	0					
System Protection Credit	Condition Met (Buffer on both sides)	0.2					
Monitoring/Contingency	Stream Side A	0.15					
	Stream Side B	0					
Control /Site Protection		0.2					
Mitigation Construction Timing (none for primarily riparian preservation) < 10% requires planting)	Stream Side A	0.05					
	Stream Side B	0					
Temporal Lag		-0.2					
Sum Factors (M)=		1.25					
Linear Feet of Stream Buffer (LF)= (don't count each bank separately)		5,799.1					
Credits (C) =M X LF		7,248.9					
Total Credits Generated C X Mitigation Factor (MF) =		7,248.9					

Total Riparian Restoration Credits Generated = 7,248.9