WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

Stream Type	Intermittent Pe			Perennial	Stream > 15	' in width	Perennial Stream ≤ 15' in width		
Impacted		0.1			0.4 0.8				
Priority Area	Tertiary			Secondary			Primary		
-		0.5			0.8			1.5	
Existing	F	Fully Impaired			Somewhat Impaired			ully Functiona	ıl
Condition		0.25			0.5			1.0	
Duration	Temporary			Recurrent			Permanent		
		0.05			0.1		0.2		
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill
Impact	Clear	X-ing	Armor		Crossing	-	logic	>100'	
•				1.5	(≤ 100')́		Change		
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0
Scaling	< 100'	100-200'	201-500'	501-1000'		>	 1000' impac 	et	
Factor	impact	impact	impact	impact		0.4 for ea	ch 1000' feet	of impact	
(Based on #						(round impa	acts to the ne	arest 1000')	
linear feet				0.2	(example: 2	,200' of imp	act - scaling	factor $= 0.8;$	2,800' of
impacted)	0	0.05	0.1			impact -	- scaling fact	or – 1.2)	

STREAM

		SINCAN		
Reaches to Be Impacted	1	2	3	4
Simon Channel Evolution Stage	II			
Rosgen Stream Type/D50	B4			
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 20			
una Dopun	Depth:2-6			
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.4	0.1	0.1	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	4.8	4.5	4.5	4.5
Feet Stream in Reach Impacted	5,202.4	328.2	253.2	302.9
M X LF =	24,971.52	1,476.90	1,139.40	1,363.05

Total Mitigation Credits Required

28,950.87

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

Stream Type		Intermittent		Perennial	Stream > 15' in width Perennial Stream			Stream ≤ 15	' in width
Impacted		0.1			0.4 0.8				
Priority Area	Tertiary			Secondary			Primary		
-		0.5		0.8			1.5		
Existing	I	Fully Impaired			Somewhat Impaired			ully Function	al
Condition		0.25			0.5			1.0	
Duration	Temporary			Recurrent			Permanent		
	0.05			0.1			0.2		
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill
Impact	Clear	X-ing	Armor		Crossing	-	logic	>100'	
-		_		1.5	(≤100')		Change		
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0
Scaling	< 100'	100-200'	201-500'	501-1000'		>	 1000' impac 	et	
Factor	impact	impact	impact	impact		0.4 for ea	ch 1000' feet	of impact	
(Based on #						(round impa	acts to the ne	arest 1000')	
linear feet				0.2	(example: 2	,200' of imp	act – scaling	factor $= 0.8$;	2,800' of
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

STREAM

Reaches to Be	_	_		0
Impacted	5	7	8	9
Simon Channel				
Evolution Stage				
Rosgen Stream				
Type/D50				
Criteria for	FF	FF	FF	FF
Selecting				
Existing				
Bankfull Width	Width: 8	Width:8	Width:12	
and Depth	Depth:1-2	Depth:1-2	Depth1-2	
Bankfull				
Indicators (attach				
Eastan				
Factors	0.1	0.1	0.0	0.1
Stream Type Impacted	0.1	0.1	0.8	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
	-	-	-	-
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors	4.5	4.5	5.2	4.5
M =				
Feet Stream in	348.1	310.4	1367.5	142.9
Reach Impacted				

Total Mitigation Credits Required

10,717.3

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
--

Stream Type		Intermittent		Perennial	Stream > 15' in width Perennial Stream < 15' in w				in width
Impacted		0.1			0.4		0.8		
Priority Area		Tertiary 0.5			Secondary 0.8				
Existing Condition	F	Fully Impaired 0.25		Somewhat Impaired 0.5		Fu	ully Functiona 1.0	ıl	
Duration		Temporary 0.05			Recurrent 0.1				
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	$> 1000^{\circ}$ impact 0.4 for each 1000' feet of impact				
(Based on # linear feet			-	0.2	(example: 2	,200' of imp	acts to the near act – scaling	factor = 0.8 ;	2,800' of
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

		SINEAN		
Reaches to Be Impacted	10	11	13	15
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth			Width:6	Width: 6
und Depti			Depth1-2	Depth:1-2
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.1	0.1	0.1	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	4.5	4.5	4.5	4.5
Feet Stream in Reach Impacted	119.4	251.00	447.2	418.1
M X LF =	537.30	1,129.50	2,012.40	1,881.45

Total Mitigation Credits Required

5,560.65

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
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Stream Type		Intermittent		Perennial	Stream > 15	' in width	Perennial Stream < 15' in width		
Impacted		0.1			0.4 0.8				
Priority Area		Tertiary 0.5		Secondary 0.8			Primary 1.5		
Existing Condition	F	Fully Impaired 0.25		Somewhat Impaired 0.5		Fu	ully Functiona 1.0	ıl	
Duration		Temporary 0.05		Recurrent 0.1					
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact				
(Based on # linear feet	_	-	_	0.2	(example: 2	,200' of imp	acts to the ne act – scaling	factor = 0.8 ;	2,800' of
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

		× 11001000		
Reaches to Be Impacted	17	19	20 Upper Reach	20 Lower Reach
Simon Channel Evolution Stage	III			III
Rosgen Stream Type/D50	G5			G5
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 8	Width: 8		Width:4
unu Dopin	Depth:1-3	Depth: 1-2		Depth:<1
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.8	0.8	0.8	0.8
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	5.2	5.2	5.2	5.2
Feet Stream in Reach Impacted	713.1	5,688.6	887.4	205.5
M X LF =	3,708.12	29,580.72	4,614.48	1,068.60

Total Mitigation Credits Required

38,971.92

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
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Stream Type		Intermittent		Perennial	1 Stream > 15' in width Perennial Stream < 15' in				in width
Impacted		0.1			0.4 0.8			0.8	
Priority Area		Tertiary 0.5			Secondary 0.8			Primary 1.5	
Existing Condition	Fully Impaired 0.25		Sor	Somewhat Impaired 0.5		Fi	ully Functiona 1.0	ıl	
Duration		Temporary 0.05		Recurrent 0.1					
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact				
(Based on # linear feet				0.2	(example: 2	,200' of imp	acts to the ne act – scaling	factor = 0.8 ;	2,800' of
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

Reaches to Be Impacted23242627Simon Channel Evolution Stage			SINDAN		
Evolution StageImage: state and the state and		23	24	26	27
Type/D50Image: constraint of criteria for Selecting ExistingFFFFFFFFBankfull Width and DepthWidth:6Image: constraint of constrai					
Selecting ExistingWidth:6Image: Constraint of the sector of t	-				
and Depth Image: Constraint of the sector of	Selecting	FF	FF	FF	FF
Depth: 1-2Depth: 1-2Depth: <1Bankfull Indicators (attach $$		Width:6			Width:4
Indicators (attach Image: Constraint of the sector of the s	und Doput	Depth:1-2			Depth:<1
Stream Type Impacted 0.1 0.1 0.1 0.1 Priority Area 0.5 0.5 0.5 0.5 Existing 1.0 1.0 1.0 1.0 Duration 0.2 0.2 0.2 0.2 Dominant Impact 2.7 2.7 2.7 2.7 Scaling Factor $$ $$ $$ $$ Sum of Factors M = 4.5 4.5 4.5 4.5 Feet Stream in Reach Impacted $1,419.4$ 52.1 96.1 380.4					
ImpactedImpactedImpactedPriority Area 0.5 0.5 0.5 Existing 1.0 1.0 1.0 Duration 0.2 0.2 0.2 Dominant Impact 2.7 2.7 2.7 Scaling FactorSum of Factors 4.5 4.5 4.5 M = $1,419.4$ 52.1 96.1 380.4	Factors				
Existing1.01.01.0Duration0.20.20.2Dominant Impact2.72.72.7Scaling FactorSum of Factors M =4.54.54.5Feet Stream in Reach Impacted1,419.452.196.1		0.1	0.1	0.1	0.1
Duration0.20.20.20.2Dominant Impact2.72.72.7Scaling FactorSum of Factors M =4.54.54.5Feet Stream in Reach Impacted1,419.452.196.1380.4	Priority Area	0.5	0.5	0.5	0.5
Dominant Impact 2.7 2.7 2.7 2.7 Scaling Factor Sum of Factors 4.5 4.5 4.5 4.5 M = 1,419.4 52.1 96.1 380.4	Existing	1.0	1.0	1.0	1.0
Scaling Factor Sum of Factors 4.5 4.5 4.5 4.5 4.5 M = 1,419.4 52.1 96.1 380.4 Reach Impacted 1 1 1 1	Duration	0.2	0.2	0.2	0.2
Sum of Factors M =4.54.54.5Feet Stream in Reach Impacted1,419.452.196.1380.4	Dominant Impact	2.7	2.7	2.7	2.7
M =MFeet Stream in Reach Impacted1,419.452.196.1380.4	Scaling Factor				
Reach Impacted		4.5	4.5	4.5	4.5
M X LF = 6,387.30 234.45 432.45 1,711.80	Reach Impacted				
	M X LF =	6,387.30	234.45	432.45	1,711.80

Total Mitigation Credits Required

8,766.00

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
--

Stream Type	Intermittent Perennia			Perennial	l Stream > 15' in width Pe		Perennial	Perennial Stream $\leq 15'$ in width	
Impacted		0.1			0.4			0.8	
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5		
Existing Condition	F	Fully Impaire 0.25	d	Somewhat Impaired 0.5			Fully Functional 1.0		
Duration		Temporary 0.05		Recurrent 0.1			Permanent 0.2		
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact				
(Based on # linear feet				0.2	(round impacts to the nearest 1000') (example: 2,200' of impact – scaling factor = 0.8; 2,800' of				
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

Reaches to Be Impacted	30	32	36	37
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 20			Width: 20
una Depun	Depth:2-6			Depth:2-6
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.4	0.1	0.8	0.4
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	4.8	4.5	5.2	4.8
Feet Stream in Reach Impacted	5,461.8	994.5	803.1	1499.9
M X LF =	26,216.64	4,475.25	4,176.12	7,199.52

Total Mitigation Credits Required

42,067.53

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
--

Stream Type	Intermittent Perennia			Perennial	Stream > 15' in width Pe		Perennial	Perennial Stream < 15' in width		
Impacted		0.1			0.4		0.8			
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5			
Existing Condition	F	Fully Impaire 0.25	d	Sor	newhat Impaired 0.5		Fully Functional 1.0		ıl	
Duration		Temporary 0.05			Recurrent 0.1			Permanent 0.2		
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill	
Impact	Clear	X-ing	Armor		Crossing		logic	>100'		
				1.5	(≤100')		Change			
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0	
Scaling	< 100'	100-200'	201-500'	501-1000'		>	 1000' impac 	et		
Factor	impact	impact	impact	impact	0.4 for each 1000' feet of impact					
(Based on #	-	-	-	-	(round impacts to the nearest 1000')					
linear feet				0.2						
impacted)	0	0.05	0.1		_	impact -	- scaling fact	or – 1.2)		

Reaches to Be				
Impacted	38	39	40	41
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 5	Width:4	Width:4	Width: 4
and Depui	Depth:<1	Depth:<1	Depth<1	Depth:<1
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.8	0.1	0.1	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	5.2	4.5	4.5	4.5
Feet Stream in Reach Impacted	375.4	407.8	881.7	637.1
M X LF =	1,952.08	1,835.10	3,967.65	2,866.95

Total Mitigation Credits Required

10,621.78

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

Stream Type	Intermittent Pere			Perennial	al Stream > 15' in width		Perennial Stream < 15' in width		
Impacted		0.1			0.4		0.8		
Priority Area	Tertiary 0.5			Secondary 0.8		Primary 1.5			
Existing Condition	Fully Impaired Sor 0.25			mewhat Impaired 0.5		Fully Functional 1.0		ıl	
Duration		Temporary 0.05			Recurrent 0.1		Permanent 0.2		
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact				
(Based on # linear feet				0.2	(round impacts to the nearest 1000') (example: 2,200' of impact – scaling factor = 0.8; 2,800' o				
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

STREAM

Reaches to Be Impacted	42	43	44	45
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth		Width:12	Width:4	Width: 6
unu Dopui		Depth: 1-3	Depth<1	Depth:<1
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.1	0.8	0.1	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	4.5	5.2	4.5	4.5
Feet Stream in Reach Impacted	123.6	3,153.1	41.9	168.2
M X LF =	556.20	16,396.12	188.55	756.90

Total Mitigation Credits Required

17,897.77

Stream Type	Intermittent Perennia			Perennial	l Stream > 15' in width Pe		Perennial	Perennial Stream $\leq 15'$ in width	
Impacted		0.1			0.4			0.8	
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5		
Existing Condition	F	Fully Impaire 0.25	d	Somewhat Impaired 0.5			Fully Functional 1.0		
Duration		Temporary 0.05		Recurrent 0.1			Permanent 0.2		
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact				
(Based on # linear feet				0.2	(round impacts to the nearest 1000') (example: 2,200' of impact – scaling factor = 0.8; 2,800' of				
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)	

		SINLAN		
Reaches to Be Impacted	46 49 50		51	
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 6	Width: 8	Width: 12	Width: 4
unu Dopui	Depth:1-2	Depth:1-2	Depth:1-2	Depth:<1
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.1	0.8	0.8	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor				
Sum of Factors M =	4.5	5.2	5.2	4.5
Feet Stream in Reach Impacted	678.8	2,162.5	1,857.7	301.5
M X LF =	3,054.60	11,245.00	9,660.04	1,356.75

Total Mitigation Credits Required

25,316.39

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
--

Stream Type	Intermittent			Perennial	Stream > 15	' in width	Perennial Stream < 15' in width		
Impacted	0.1			0.4				0.8	
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5		
Existing Condition	Fully Impaired 0.25			Somewhat Impaired 0.5			Fully Functional 1.0		
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.2		
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill
Impact	Clear	X-ing	Armor		Crossing		logic	>100'	
				1.5	(≤100')		Change		
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0
Scaling	< 100'	100-200'	201-500'	501-1000')' > 1000' impact				
Factor	impact	impact	impact	impact	1				
(Based on #	-	-	-	(round impacts to the nearest 1000')					
linear feet				0.2	(example: 2	,200' of imp	act – scaling	factor $= 0.8;$	2,800' of
impacted)	0	0.05	0.1		_	impact -	- scaling fact	or – 1.2)	

		SINLAN		
Reaches to Be Impacted	52	53	55	57
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth	Width: 6	Width:6		
una 2 opun	Depth:<1	Depth: 1-2		
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.1	0.1	0.8	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	2.7	2.7
Scaling Factor	-	-	-	-
Sum of Factors M =	4.5	4.5	5.2	4.5
Feet Stream in Reach Impacted	142.9	654.0	69.0	13.7
M X LF =	643.05	2,943.00	358.80	61.65

Total Mitigation Credits Required

4,006.50

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
--

Stream Type	Intermittent			Perennial	Stream > 15	' in width	Perennial Stream < 15' in width		
Impacted	0.1			0.4				0.8	
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5		
Existing Condition	Fully Impaired 0.25			Somewhat Impaired 0.5			Fully Functional 1.0		
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.2		
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill
Impact	Clear	X-ing	Armor		Crossing		logic	>100'	
				1.5	(≤100')		Change		
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0
Scaling	< 100'	100-200'	201-500'	501-1000')' > 1000' impact				
Factor	impact	impact	impact	impact	1				
(Based on #	-	-	-	(round impacts to the nearest 1000')					
linear feet				0.2	(example: 2	,200' of imp	act – scaling	factor $= 0.8;$	2,800' of
impacted)	0	0.05	0.1		_	impact -	- scaling fact	or – 1.2)	

Reaches to Be Impacted58596163Simon Channel Evolution Stage					
Evolution StageImage of the second seco		58	59	61	63
Type/D50Image: constraint of criteria for Selecting ExistingFFFFFFFFBankfull Width and DepthImage: constraint of constraint					
Selecting Existing Image: Market of the second secon	-				
and Depth Image: constraint of the second sec	Selecting	FF	FF	FF	FF
Indicators (attachImage: Constraint of the sector of the sec					
Stream Type Impacted 0.1 0.1 0.1 0.8 Priority Area 0.5 0.5 0.5 0.5 Existing 1.0 1.0 1.0 1.0 Duration 0.2 0.2 0.2 0.2 Dominant Impact 2.7 2.7 2.7 2.7 Scaling Factor $$ $$ $$ Sum of Factors M = 4.5 4.5 4.5 5.2 Feet Stream in Reach Impacted 89.1 56.0 60.4 37.8					
ImpactedImpactedImpactedPriority Area 0.5 0.5 0.5 Existing 1.0 1.0 1.0 Duration 0.2 0.2 0.2 Dominant Impact 2.7 2.7 2.7 Scaling FactorSum of Factors 4.5 4.5 4.5 M =89.1 56.0 60.4 37.8	Factors				
Existing1.01.01.01.0Duration0.20.20.20.2Dominant Impact2.72.72.72.7Scaling FactorSum of Factors M =4.54.54.55.2Feet Stream in Reach Impacted89.156.060.437.8		0.1	0.1	0.1	0.8
Duration0.20.20.20.2Dominant Impact2.72.72.72.7Scaling FactorSum of Factors M =4.54.54.55.2Feet Stream in Reach Impacted89.156.060.437.8	Priority Area	0.5	0.5	0.5	0.5
Dominant Impact 2.7 2.7 2.7 2.7 Scaling Factor Sum of Factors 4.5 4.5 4.5 5.2 M = 89.1 56.0 60.4 37.8	Existing	1.0	1.0	1.0	1.0
Scaling Factor	Duration	0.2	0.2	0.2	0.2
Sum of Factors M =4.54.54.55.2Feet Stream in Reach Impacted89.156.060.437.8	Dominant Impact	2.7	2.7	2.7	2.7
M =MFeet Stream in Reach Impacted89.156.060.437.8	Scaling Factor				
Reach Impacted		4.5	4.5	4.5	5.2
M X LF = 400.95 252.00 271.80 196.56	Reach Impacted	89.1	56.0		
	M X LF =	400.95	252.00	271.80	196.56

Total Mitigation Credits Required

1,121.31

WORKSHEET 1: ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET

Stream Type	Intermittent			Perennial	Perennial Stream > 15' in width			Perennial Stream < 15' in width		
Impacted	0.1			0.4				0.8		
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5			
Existing Condition	Fully Impaired 0.25			Somewhat Impaired 0.5			Fully Functional 1.0			
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.2			
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing (< 100')	Impound	Morpho- logic Change	Pipe >100'	Fill	
	0.05	0.4	0.7	1.5	1.7	2.7	2.7	3.0	3.0	
Scaling Factor	< 100' impact	100-200' impact	201-500' impact	501-1000' impact	> 1000' impact 0.4 for each 1000' feet of impact					
(Based on # linear feet				(round impacts to the nearest 1000') 0.2 (example: 2,200' of impact – scaling factor = 0.8; 2,800' o			2,800' of			
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)		

STREAM

Reaches to Be Impacted	64	66	66 68 (dam fill)	
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth				
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.8	0.1	0.4	0.4
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.2	0.2	0.2	0.2
Dominant Impact	2.7	2.7	3.0	0.7
Scaling Factor				
Sum of Factors M =	5.2	4.5	5.1	2.8
Feet Stream in Reach Impacted	34.8	40.3	375.0	50
M X LF =	180.96	181.35	1,912.50	140.00

Total Mitigation Credits Required

2,414.81

Stream Type	Intermittent			Perennial	Perennial Stream > 15' in width			Perennial Stream $\leq 15'$ in width		
Impacted	0.1			0.4			0.8			
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5			
Existing Condition	Fu F Impaired 0.25			Somewhat Impaired 0.5			Fully Functional 1.0			
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.2			
Dominant	Shade/	Utility	Bank	Deten-tion	Stream	Impound	Morpho-	Pipe	Fill	
Impact	Clear	X-ing	Armor	1.5	Crossing $(\leq 100')$		logic Change	>100'		
	0.05	0.4	0.7		1.7	2.7	2.7	3.0	3.0	
Scaling	< 100'	100-200'	201-500'	501-1000'	0' > 1000' impact					
Factor	impact	impact	impact	impact	impact 0.4 for each 1000' feet of impact					
(Based on #				(round impacts to the nearest 1000')						
linear feet				0.2	(example: 2		act – scaling		2,800' of	
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)		

RAW WATER PIPELINE & INTAKE PUMP STATION

Reaches to Be	Intake Tributary	Pipeline Big	Pipeline	Pipeline
Impacted	1	Indian Creek	Tributary 1	Tributary 2
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth				
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.8	0.4	0.8	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.05	0.05	0.05	0.05
Dominant Impact	0.4	0.4	0.4	0.4
Scaling Factor				
Sum of Factors M =	2.75	2.35	2.75	2.05
Feet Stream in Reach Impacted	262.0	66.0	70.6	102.5
M X LF =	720.50	155.10	194.15	210.13

Total Mitigation Credits Required

1,279.88

WORKSHEET I. ADVERSE IMPACT FACTORS FOR RIVERINE STSTEMS WORKSHEET	WORKSHEET 1:	ADVERSE IMPACT FACTORS FOR RIVERINE SYSTEMS WORKSHEET
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Stream Type		Intermittent			Stream > 15' in width Perennial Stream < 15' in w			in width		
Impacted	0.1				0.4			0.8		
Priority Area	Tertiary 0.5			Secondary 0.8			Primary 1.5			
Existing Condition	Fully Impaired 0.25			Sor	newhat Impa 0.5	ired	Fi	Fully Functional 1.0		
Duration	Temporary 0.05				Recurrent 0.1			Permanent 0.2		
Dominant Impact	Shade/ Clear	Utility X-ing	Bank Armor	Deten-tion	Stream Crossing	Impound	Morpho- logic	Pipe >100'	Fill	
	0.05	0.4	0.7	1.5	(≤100') 1.7	2.7	Change 2.7	3.0	3.0	
Scaling	< 100'	100-200'	201-500'	501-1000'			• 1000' impa			
Factor	impact	impact	impact	impact	et 0.4 for each 1000' feet of impact					
(Based on #					(round impacts to the nearest 1000')					
linear feet				0.2	0.2 (example: 2,200' of impact – scaling factor = 0.8 ; 2,80				2,800' of	
impacted)	0	0.05	0.1			impact -	 scaling fact 	or – 1.2)		

RAW WATER PIPELINE & INTAKE PUMP STATION

Reaches to Be Impacted	Pipeline Tributary 3	Pipeline Tributary 4	Pipeline Tributary 6	Pipeline Tributary 7
Simon Channel Evolution Stage				
Rosgen Stream Type/D50				
Criteria for Selecting Existing	FF	FF	FF	FF
Bankfull Width and Depth				
Bankfull Indicators (attach				
Factors				
Stream Type Impacted	0.8	0.4	0.1	0.1
Priority Area	0.5	0.5	0.5	0.5
Existing	1.0	1.0	1.0	1.0
Duration	0.05	0.05	0.05	0.05
Dominant Impact	0.4	0.4	0.4	0.4
Scaling Factor				
Sum of Factors M =	2.75	2.35	2.05	2.05
Feet Stream in Reach Impacted	50.3	54.0	126.3	194.1
M X LF =	138.33	126.90	258.92	397.91

Total Mitigation Credits Required

922.05

STREAM CHANNEL RESTORATION, STREAM RELOCATION, AND STREAMBANK RESTORATION WORKSHEET

		· ·				oarian buffer ian credit (se		
Net Benefit	Streamb Stabiliza	Structure		Removal			el Restoration and Relocation	
	2.0		4.0 t	o 8.0	Priority 4 1.0	Priority 3 4.0	Pri	ority 1 and 2 8.0
Monitoring/	Minimal (Re	Minimal (Required)		erate	Subst	tantial		Excellent
Contingency	0.0		0.	.3	0	.4		1.0
Priority Area	Т	Certiary 0.05			Secondary 0.2	ý		Primary 1.0
Control	RC on restored channel and 25' buffer (Required) 0.1		Require	Required RC + CE or GPP 0.3		Requ	Required RC + CE + GPP 0.5	
Mitigation	Schedu	le 3	Sch	Schedule 2 (Use for all banks)				Schedule 1
Timing	0		501	0.1				0.5
Fac	tors	Bulldoze Lov	r Branch ver	-	lar Creek oper	Caterpilla Mido		Caterpillar Creek Lower & Confluence
Net Benefit		8.0	00	8	.00	8.00	0	8.00
Monitoring/Co least minimal l required)	•••	1.0	00	1	.00	1.00)	1.00
Priority Area		0.0	05	0	.05	0.03	5	0.05
Control (at least a RC required)		0.3	30	0	.30	0.30	0	0.30
Mitigation Timing		0.:	50	0	.50	0.50	0	0.50
Sum Factors M=		9.8	85	9	.85	9.8	5	9.85
Feet Stream in count each bar LF =	Reach (do not lk separately)	63	31	1,	494	444	1	866
M X LF =		6,2	15	14	,716	4,37	'3	8,530

Channel Restoration/Relocation Credits Generated (Sheet 1) = (M X LF) =

STREAM CHANNEL RESTORATION, STREAM RELOCATION, AND STREAMBANK RESTORATION WORKSHEET

		· ·				oarian buffer ian credit (se		
Net Benefit Streamb Stabiliza			Structure	Removal	Stream Channel Restoration and Stream Relocation			
	2.0	2.0		o 8.0	Priority 4 1.0	Priority 3 4.0	Pri	ority 1 and 2 8.0
Monitoring/	Minimal (Required)		Mod	erate	Subst	antial		Excellent
Contingency	0.0		0	.3	0	.4		1.0
Priority Area	Т	ertiary 0.05			Secondary 0.2	I		Primary 1.0
Control	RC on restored channel and 25' buffer (Required) 0.1		Require	red RC + CE or GPP		Required RC + CE + GPP 0.5		
Mitication	-	10.2	Sal	0.3	Ico for all b	Schedule 1		
Mitigation Timing	Schedule 3 0		Schedule 2 (Use for all ba 0.1			aliks)	L	0.5
Fac	tors	Corn Cr	ib Creek	Bobcat F	Run Upper	Bobcat Low	-	Deere Draw
Net Benefit		8.0)0	1	.00	8.00	0	8.00
Monitoring/Co least minimal l required)		1.0	00	1	.00	1.00	0	1.00
Priority Area		0.0)5	0	.05	0.05		0.05
Control (at lea required)	st a RC	0.3	30	0	.30	0.30	0	0.30
Mitigation Timing		0.:	50	0	.50	0.50	00	0.50
Sum Factors M=		9.8	35	2	.85	9.8	5	9.85
Feet Stream in count each bar LF =	Reach (do not hk separately)	1,9	05	6	20	553	3	2,812
M X LF =		18,	764	1.	767	5,44	7	27,698

Channel Restoration/Relocation Credits Generated (Sheet 2) = (M X LF) =

STREAM CHANNEL RESTORATION, STREAM RELOCATION, AND STREAMBANK RESTORATION WORKSHEET

		· ·			-	oarian buffer ian credit (se		
Net Benefit Streamb Stabiliza			Structure Removal		Stream Channel Restoration and Stream Relocation			
	2.0		4.0 te	o 8.0	Priority 4 1.0	Priority 3 4.0	Prie	ority 1 and 2 8.0
Monitoring/	Minimal (Re	equired)	Mod	erate	Subst	tantial	-	Excellent
Contingency	0.0		0.	.3	0	.4		1.0
Priority Area	Т	ertiary 0.05			Secondary 0.2	Į		Primary 1.0
Control	RC on restored channel and 25' buffer (Required) 0.1		Require	ed RC + C	E or GPP	Requ	uired RC +	- CE + GPP
Mitigation	Schedul	o 3	Schedule 2 (Use for all			I		
Timing	0		0.1			allK5)		0.5
			I					
Factors		Mas Fla	-	Case	Creek			
Net Benefit		8.0	00	8.00				
Monitoring/Co least minimal l required)	•••	1.00		1.00				
Priority Area		0.0	05	0	.05			
Control (at lea required)	st a RC	0.3	30	0	.30			
Mitigation Timing		0.:	50	0	.50			
Sum Factors M=		9.8	85	9	.85			
Feet Stream in Reach (do not count each bank separately) LF =		1,7	22	1,	460			
M X LF =		16,9	962	14	,381	0		

Channel Restoration/Relocation Credits Generated (Sheet 3) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Res	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1							
System Credit Condition 1	To Calci		Condition 1: MWB restored or protected on both streambanks ate Value: Average of the Net Benefit values for Stream Side A and Stream Side B						
System Credit Condition 2		ed on Channel 0.05	d on Channel RC and CE Placed on Channel						
M&C - select value for each stream side	Mimin	nal (Required)	Moderate 0.2	Substantial 0.25	Excellent 0.3				
Priority Area]	Certiary 0.05		ndary .2	Primary 0.7				
Control		channel and 25' buffer (equired)	Required RC	+ CE or GPP	Required RC + CE + GPP				
Mitigation Timing - select value for each stream side	Schedule 3 0	-	edule 2 (Use for all ba 0.05	-	0.5 Schedule 1 0.15				
Riparian Reaches		IC-A	IC-B	IC-C	IC-D				
		Complete the Following for Each Riparian Reach							
Simon Channel Evolution Sta	ge	Ι	Ι	Ι	Ι				
Rosgen Stream Type D/50		E4	E4	E4	E4				
Criteria for Selecting Existing Each Reach	Condition for	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO				
Bankfull Width and Depth	Width: Depth:	56.10 5.88	56.10 5.88	56.10 5.88	56.10 5.88				
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B	SEE APPENDIX B	SEE APPENDIX B	SEE APPENDIX B				
Factors									
Net Benefit	Stream Side A	0.00	0.10	1.00	1.50				
	Stream Side B	1.50	2.00	2.00	2.00				
System Credit: Condition 1 M System Credit: Condition 2 n only if Condition 1 met)		0.00	0.10	1.50 0.10	0.10				
M&C (at least minimal M&C required)	Stream Side A Stream Side B	0.00	0.30	0.30	0.30				
Priority Area	Stream Slue D	0.05	0.05	0.05	0.05				
Control (at least a RC required	d)	0.03	0.03	0.03	0.03				
Mitigation Timing (none for			0.15	0.15	0.15				
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15				
Sum of Factors	M =	2.45	4.50	5.85	6.60				
Linear Feet of Stream Buffere		138	109	108	74				
M X LF =		338	491	632	488				

Riparian Restoration Credits Generated (Sheet 1) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Res	toration/ Habitat Impro 50'+2'	vement/Preservation F /% slope Select Values		num Buffer Width =					
System Credit Condition 1	TOL		Condition 1: MWB restored or protected on both streambanks							
			ate Value: Average of the Net Benefit values for Stream Side A and Stream Side B							
System Credit Condition 2	RC Plac	ed on Channel	RC	and CE Placed on Cha	annel					
-		0.05		0.1						
M&C - select value for each stream side	Mimin	nal (Required)	Moderate	Substantial	Excellent					
stream side	-	0	0.2	0.25	0.3					
Priority Area		Certiary		ndary	Primary					
		0.05		.2 + CE or GPP	0.7					
Control		channel and 25' buffer Required)	Kequiled KC		Required RC + CE + GPP					
		0.1		.3	0.5					
Mitigation Timing - select	Schedule 3	Sch	edule 2 (Use for all ba	nks)	Schedule 1					
value for each stream side	0		0.05		0.15					
Riparian Reaches		IC-E	IC-F	IC-G	ІС-Н					
		Complete the Following for Each Riparian Reach								
Simon Channel Evolution Sta	ge	Ι	Ι	Ι	Ι					
Rosgen Stream Type D/50		E4	E4	E4	E4					
Criteria for Selecting Existing Each Reach	Condition for	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO	W/D RATIO ENT RATIO					
Bankfull Width and Depth	Width:	56.10	56.10	56.10	56.10					
-	Depth:	5.88	5.88	5.88	5.88					
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B	SEE APPENDIX B	SEE APPENDIX B	SEE APPENDIX B					
Factors										
Net Benefit	Stream Side A	2.00	2.00	2.00	0.40					
	Stream Side B	2.00	1.50	0.60	1.00					
System Credit: Condition 1 N		2.00	1.75	1.30	0.70					
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.10	0.10	0.10	0.10					
M&C (at least minimal M&C		0.30	0.30	0.30	0.30					
required)	Stream Side B	0.30	0.30	0.30	0.30					
Priority Area		0.05	0.05	0.05	0.05					
Control (at least a RC required		0.30	0.30	0.30	0.30					
Mitigation Timing (none for	Stream Side A	0.15	0.15	0.15	0.15					
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15					
Sum of Factors	M =	7.35	6.60	5.25	3.45					
Linear Feet of Stream Buffere each bank separately)	d (do not count LF =	286	581	491	344					
M X LF =		2,102	3,835	2,578	1,187					

Riparian Restoration Credits Generated (Sheet 2) = (M X LF) =

					D 00 TT 11			
Net Benefit - select value for each stream side	Riparian Rest	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1						
		Condition 1: MW	VB restored or protecte	d on both streambanks	5			
System Credit Condition 1	To Calcu	To Calculate Value: Average of the Net Benefit values for Stream Side A and Stream Side B						
	RC Plac	ed on Channel	and CE Placed on Cha	annel				
System Credit Condition 2		0.05		0.1				
M&C - select value for each	Mimin	nal (Required)	Moderate	Substantial	Excellent			
stream side		0	0.2	0.25	0.3			
	-	Fertiary	Seco	ndary	Primary			
Priority Area		0.05	0	.2	0.7			
	RC on restored	channel and 25' buffer	Required RC	+ CE or GPP	Required RC + CE +			
Control		(Lequired)			GPP			
		0.1	0	.3	0.5			
Mitigation Timing - select	Schedule 3	-	edule 2 (Use for all ba	-	Schedule 1			
value for each stream side	0		0.05	,	0.15			
Riparian Reac	Riparian Reaches		IC-J	ІС-К	IC-L			
		Complete the Following for Each Riparian Reach						
Simon Channel Evolution Sta	σe.	I	IV	IV	I			
Rosgen Stream Type D/50	50	E4	C5	C5	E5			
Criteria for Selecting Existing	Condition for	W/D RATIO	W/D RATIO	W/D RATIO	W/D RATIO			
Each Reach		ENT RATIO	ENT RATIO	ENT RATIO	ENT RATIO			
Doul-full Wedth and Douth	Width:	56.10	70.00	70.00	62.10			
Bankfull Width and Depth	Depth:	5.88	5.32	5.32	5.95			
Bankfull Indicators (attach ph showing bankfull for each read		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.			
Factors	/							
	Stream Side A	0.40	2.00	2.00	2.00			
Net Benefit	Stream Side B	0.00	2.00	1.20	0.80			
System Credit: Condition 1 M	/let	0.20	2.00	1.60	1.40			
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.10	0.10	0.10	0.10			
M&C (at least minimal M&C	Stream Side A	0.30	0.30	0.30	0.30			
required)	Stream Side B	0.30	0.30	0.30	0.30			
Priority Area	•	0.05	0.05	0.05	0.05			
Control (at least a RC required	(b	0.30	0.30	0.30	0.30			
Mitigation Timing (none for	Stream Side A	0.15	0.15	0.15	0.15			
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15			
Sum of Factors $M =$		1.95	7.35	6.15	5.55			
Sum of Fuetors	Linear Feet of Stream Buffered (do not count							
Linear Feet of Stream Buffere	d (do not count _F =	136	1,553	342	1,256			

Riparian Restoration Credits Generated (Sheet 3) = (M X LF) =

Net Benefit - select value for			reservation E		num Duffer Width -			
each stream side	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1							
		Condition 1: MWB restored or protected on both streambanks						
System Credit Condition 1	To Calcu	late Value: Average of	Value: Average of the Net Benefit values for Stream Side A and Stream Side B					
System Credit Condition 2	RC Plac	ed on Channel	RC	and CE Placed on Cha	annel			
System Credit Condition 2		0.05		0.1				
M&C - select value for each	Mimin	nal (Required)	Moderate	Substantial	Excellent			
stream side		0	0.2	0.25	0.3			
Priority Area]	Fertiary		ndary	Primary			
,		0.05		.2	0.7			
Control		channel and 25' buffer (equired)	Required RC	+ CE or GPP	Required RC + CE + GPP			
	(IV	0.1	0	.3				
Mitigation Timing - select	Schedule 3	-	edule 2 (Use for all ba	-	0.5 Schedule 1			
value for each stream side	0	Sch	0.05	1116)	0.15			
value for each stream side	0		0.05		0.15			
Riparian Reaches		IC-M	СС-А	BBU-A	BBU-B			
		Co	mplete the Following	 for Each Riparian Re	l			
Simon Channel Evolution Sta	ge	IV	V	IV	IV			
Rosgen Stream Type D/50	-	C5	F4	G6	G6			
Criteria for Selecting Existing	Condition for	W/D RATIO	Relocated/	Relocated/	Relocated/			
Each Reach		ENT RATIO	Channelized	Channelized	Channelized			
Bankfull Width and Depth	Width:	70.00	17.80	4.00	4.00			
-	Depth:	5.32	1.40	0.30	0.30			
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.			
Factors								
N-4 D	Stream Side A	0.00	2.00	0.30	0.30			
Net Benefit	Stream Side B	0.80	2.00	1.00	2.00			
System Credit: Condition 1 N	ſet	0.00	2.00	0.65	1.15			
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.00	0.10	0.10	0.10			
M&C (at least minimal M&C	Stream Side A	0.00	0.30	0.30	0.30			
required)	Stream Side B	0.30	0.30	0.30	0.30			
Priority Area	-	0.05	0.05	0.05	0.05			
Control (at least a RC required	d)	0.30	0.30	0.30	0.30			
Mitigation Timing (none for	Stream Side A	0.15	0.15	0.15	0.15			
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15			
Sum of Factors	M =	1.75	7.35	3.30	4.80			
Linear Feet of Stream Buffere each bank separately)	d (do not count _F =	1,479	1,460	147	383			
		1	1	1	1			

Riparian Restoration Credits Generated (Sheet 4) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Res	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1							
System Credit Condition 1	To Calci		Condition 1: MWB restored or protected on both streambanks ate Value: Average of the Net Benefit values for Stream Side A and Stream Side B						
System Credit Condition 2		ced on Channel 0.05	d on Channel RC and CE Placed on Chann						
M&C - select value for each stream side	Mimin	nal (Required) 0	Moderate 0.2	Substantial 0.25	Excellent 0.3				
Priority Area]	Гertiary 0.05		ndary .2	Primary 0.7				
Control		channel and 25' buffer Required) 0.1		+ CE or GPP	Required RC + CE + GPP 0.5				
Mitigation Timing - select value for each stream side	Schedule 3 0		edule 2 (Use for all ba 0.05	-	0.15 Schedule 1 0.15				
Riparian Reaches		BBL-A	CCU-A	CCU-B	CCU-C				
		Со	mplete the Following	for Each Riparian R	1				
Simon Channel Evolution Sta	ge	IV	III	III	III				
Rosgen Stream Type D/50		G6	E4	E4	E4				
Criteria for Selecting Existing Each Reach	Condition for	Relocated/ Channelized	Channelized	Channelized	Channelized				
Bankfull Width and Depth	Width: Depth:	4.00 0.30	10.30 1.41	10.30 1.41	10.30 1.41				
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.				
Factors									
Net Benefit	Stream Side A	0.30	0.00	0.10	0.40				
	Stream Side B	2.00	1.00	1.00	1.50				
System Credit: Condition 1 M		1.15	0.50	0.55	0.95				
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.10	0.10	0.10	0.10				
M&C (at least minimal M&C	Stream Side A	0.30	0.30	0.30	0.30				
required)	Stream Side B	0.30	0.30	0.30	0.30				
Priority Area		0.05	0.05	0.05	0.05				
· · ·	Control (at least a RC required)		0.30	0.30	0.30				
Mitigation Timing (none for	Stream Side A	0.15	0.15	0.15	0.15				
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15				
Sum of Factors	M =	4.80	2.85	3.00	4.20				
Linear Feet of Stream Buffere each bank separately)	d (do not count LF =	256	180	180 57					
M X LF =		1,228.80	513.00	171.00	264.60				

Riparian Restoration Credits Generated (Sheet 5) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Res	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1							
System Credit Condition 1	Ta Cala		Condition 1: MWB restored or protected on both streambanks ate Value: Average of the Net Benefit values for Stream Side A and Stream Side B						
System Credit Condition 2	RC Plac	ced on Channel	RC	and CE Placed on Cha	annel				
MCC	Mimin	0.05 nal (Required)	Moderate	0.1 Substantial	Evallant				
M&C - select value for each stream side	WIIIIIII	0	0.2	0.25	Excellent 0.3				
stream shee	~	Tertiary		0.25 ndary	Primary				
Priority Area		0.05	0	-	0.7				
Control		channel and 25' buffer Required)		+ CE or GPP	Required RC + CE + GPP 0.5				
		0.1	0.3 Schedule 2 (Use for all banks)						
Mitigation Timing - select value for each stream side	Schedule 3 0	Sch	0.05	nks)	Schedule 1 0.15				
Riparian Reaches		CCU-D	CCU-E	ССМ-А	ССМ-В				
		Co	Complete the Following for Each Riparian Reach						
Simon Channel Evolution Sta	ge	III	III	III	III				
Rosgen Stream Type D/50		E4	E4	E4	E4				
Criteria for Selecting Existing Each Reach	Condition for	Channelized	Channelized	Channelized	Channelized				
Bankfull Width and Depth	Width:	10.30	10.30	10.30	10.30				
-	Depth:	1.41	1.41	1.41	1.41				
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.				
Factors									
Net Benefit	Stream Side A	1.20	0.30	1.00	1.00				
	Stream Side B	1.50	0.30	0.30	1.50				
System Credit: Condition 1 M		1.35	0.30	0.65	1.25				
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.10	0.10	0.10	0.10				
M&C (at least minimal M&C	Stream Side A	0.30	0.30	0.30	0.30				
required)	Stream Side B	0.30	0.30	0.30	0.30				
Priority Area		0.05	0.05	0.05	0.05				
Control (at least a RC required		0.30	0.30	0.30	0.30				
5	Stream Side A	0.15	0.15	0.15	0.15				
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15				
Sum of Factors	M =	5.40	2.25	3.30	5.10				
Linear Feet of Stream Buffere each bank separately)	d (do not count LF =	104	570	149	81				
M X LF =		562	1,283	492	413				

Riparian Restoration Credits Generated (Sheet 6) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Res	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50°+2'/% slope Select Values from Table 1							
Seaton Carlit Condition 1		Condition 1: MV	WB restored or protected	ed on both streambanks	3				
System Credit Condition 1	To Calc	ulate Value: Average of	the Net Benefit values	s for Stream Side A and	l Stream Side B				
System Credit Condition 2	RC Plac	ced on Channel 0.05	RC	RC and CE Placed on Channel 0.1					
M&C - select value for each stream side	Mimin	nal (Required) 0	Moderate 0.2	Substantial 0.25	Excellent 0.3				
Priority Area		Гertiary 0.05		ndary .2	Primary 0.7				
Control		channel and 25' buffer Required)	Required RC	+ CE or GPP	Required RC + CE + GPP				
		0.1	÷	.3	0.5				
Mitigation Timing - select	Schedule 3	Sch	edule 2 (Use for all ba	nks)	Schedule 1				
value for each stream side	0		0.05		0.15				
Riparian Reaches		ССМ-С	ССМ-D	MFL-A	DD-A				
		Complete the Following for Each Riparian Reach							
Simon Channel Evolution Sta	ge	III	III	III	IV				
Rosgen Stream Type D/50		E4	E4	G6	G4				
Criteria for Selecting Existing Each Reach	Condition for	Channelized	Channelized	Channelized	Channelized/Incised				
Bankfull Width and Depth	Width:	10.30	10.30	4.00	12.70				
Bankrun width and Depth	Depth:	1.41	1.41	0.30	1.58				
Bankfull Indicators (attach ph showing bankfull for each rea		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.				
Factors									
Net Benefit	Stream Side A	1.00	2.00	0.30	2.00				
	Stream Side B	2.00	2.00	2.00	0.30				
System Credit: Condition 1 N	/let	1.50	2.00	1.15	1.15				
System Credit: Condition 2 n only if Condition 1 met)	net (applicable	0.10	0.10	0.10	0.10				
M&C (at least minimal M&C	Stream Side A	0.30	0.30	0.30	0.30				
required)	Stream Side B	0.30	0.30	0.30	0.30				
Priority Area		0.05	0.05	0.05	0.05				
Control (at least a RC required	d)	0.30	0.30	0.30	0.30				
Mitigation Timing (none for	Stream Side A	0.15	0.15	0.15	0.15				
riparian preservation)	Stream Side B	0.15	0.15	0.15	0.15				
Sum of Factors	M =	5.85	7.35	4.80	4.80				
Linear Feet of Stream Buffere each bank separately)	d (do not count LF =	389	566	105	468				
M X LF =		2,276	4,160	504	2,246				

Riparian Restoration Credits Generated (Sheet 7) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1							
System Credit Condition 1		Condition 1: MWB restored or protected on both streambanks						
System Credit Condition 1	To Calculate Value: Average of the Net Benefit values for Stream Side A and Stream Side B							
System Credit Condition 2	RC Plac	ed on Channel 0.05						
M&C - select value for each	Mimim	nal (Required)	Moderate	Substantial	Excellent			
stream side		0	0.2	0.25	0.3			
Priority Area]	Fertiary 0.05	Secondary 0.2		Primary 0.7			
Control		channel and 25' buffer Required)	Required RC + CE or GPP		Required RC + CE + GPP			
	0.1		0	-	0.5			
Mitigation Timing - select value for each stream side	Schedule 3 0	Sch	edule 2 (Use for all ba 0.05	nks)	Schedule 1 0.15			
Riparian Reac	hes	DD-B	DD-C	DD-D	DD-E			
		Complete the Following for Each Riparian Reach						
Simon Channel Evolution Sta	ge	IV	IV	IV	IV			
Rosgen Stream Type D/50		G4	G4	G4	G4			
Criteria for Selecting Existing Condition for Each Reach		Channelized/Incised	Channelized/Incised	Channelized/Incised	Channelized/Incised			
Bankfull Width and Depth	Width:	12.70	12.70	12.70	12.70			
-	Depth:	1.58	1.58	1.58	1.58			
Bankfull Indicators (attach photograph showing bankfull for each reach)		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.			
Factors								
Net Benefit	Stream Side A	1.50	1.00	2.00	2.00			
	Stream Side B	1.00	2.00	2.00	2.00			
System Credit: Condition 1 Met		1.25	1.50	2.00	2.00			
System Credit: Condition 2 met (applicable only if Condition 1 met)		0.10	0.10	0.10	0.10			
M&C (at least minimal M&C		0.30	0.30	0.30	0.30			
required)	Stream Side B	0.30	0.30	0.30	0.30			
Priority Area		0.05	0.05	0.05	0.05			
Control (at least a RC required)		0.30	0.30	0.30	0.30			
Mitigation Timing (none for Stream Side A		0.15	0.15					
riparian preservation) Stream Side B		0.15	0.15 0.15		0.15			
Sum of Factors	M =	5.10	5.85	7.35	7.35			
Linear Feet of Stream Buffered (do not count each bank separately) LF =		163	277	102	1,424			
M X LF =		831	1,620	750	10,466			

Riparian Restoration Credits Generated (Sheet 8) = (M X LF) =

Net Benefit - select value for each stream side	Riparian Restoration/ Habitat Improvement/Preservation Factors – MBW = Minimum Buffer Width = 50'+2'/% slope Select Values from Table 1						
System Credit Condition 1		Condition 1: MWB restored or protected on both streambanks					
5	To Calcu	ulate Value: Average of	f the Net Benefit values	s for Stream Side A and	d Stream Side B		
System Credit Condition 2	RC Plac	ed on Channel	RC	and CE Placed on Ch	ced on Channel		
System Creat Condition 2		0.05	0.1				
M&C - select value for each	Mimin	nal (Required)	Moderate	Substantial	Excellent		
stream side		0	0.2	0.25	0.3		
Priority Area	1	Fertiary	Secondary		Primary		
-		0.05		.2	0.7		
Control		channel and 25' buffer (equired)	Required RC + CE or GPP		Required RC + CE + GPP		
		0.1	0	.3	0.5		
Mitigation Timing - select Schedule 3		Sch	edule 2 (Use for all ba	nks)	Schedule 1		
value for each stream side	0		0.05		0.15		
Riparian Reac	nes	ССС	MFL-B				
		Complete the Following for Each Riparian Reach					
Simon Channel Evolution Sta	ge	III	III				
Rosgen Stream Type D/50		G6	G6				
Criteria for Selecting Existing Condition for Each Reach		Channelized	Channelized				
Bankfull Width and Depth	Width:	4.00	4.00				
Depth:		0.30	0.30				
Bankfull Indicators (attach photograph showing bankfull for each reach)		SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.	SEE APPENDIX B.		
Factors							
Net Benefit	Stream Side A	0.30	0.30				
	Stream Side B	0.30	0.30				
System Credit: Condition 1 Met		0.30	0.30				
System Credit: Condition 2 met (applicable only if Condition 1 met)		0.10	0.10				
M&C (at least minimal M&C		0.30	0.30				
required) Stream Side B		0.30	0.30				
Priority Area		0.05	0.05				
Control (at least a RC required)		0.30	0.30				
Mitigation Timing (none for Stream Side A		0.15	0.15				
riparian preservation) Stream Side B		0.15	0.15	0.00	0.00		
Sum of Factors	M =	2.25	2.25	0.00	0.00		
Linear Feet of Stream Buffered (do not count each bank separately) LF =		1,414	1,247				
M X LF =		3,182	2,806	0	0		

Riparian Restoration Credits Generated (Sheet 9) = (M X LF) =

COMPENSATORY STREAM MITIGATION WORKSHEETS

Mitigation Summary Worksheet for the Indian Creek Water Supply Reservoir



I.	Required Mitigation		
А.	Reservoir Pool Impacts	=	194,360.3 (39,680.5) l.f.
	Dam Construction	=	2,052.5 (425 l.f.)
	Raw Water Pipeline Impact	=	2,201.9 (925.8 l.f.)
Total Required Mitigation Credits = 198,614.7 (41,031.3 l.f.)			= 198,614.7 (41,031.3 l.f.)

II.	Mitigation Credit Summary	Credits	Acres
B.	Mitigation Bank		
C.	Stream Channel Restoration and/or Enhancement	118,854	
D.	Riparian Restoration and/or Enhancement	81,814	117.41
E.	Functional Replacement Mitigation = B + C + D	200,668	117.41
F.	Riparian Preservation		
H.	Total Proposed Non-Bank Mitigation = E + F + G	200,668	117.41

The following criteria must be satisfied for the mitigation proposal to meet minimum SOP requirements:

1. Total Proposed Mitigation (Row H) must be greater than or equal to Total Required Mitigation Credits (Row A).

2. Functional Replacement Mitigation (Row E) must be at least 50% of Row A.

3. Preservation Mitigation (Row G) can be up to, but not more than 50% of Row A, if no Upland Buffer Credits are proposed. If Upland Buffer Credits are proposed, then Preservation Mitigation may be reduced to 30% of the Total Required Mitigation Credits.

4. Upland Buffer (Row F) cannot exceed 20% of the Total Required Mitigation (Row A). The following table provides examples of how Preservation and Upland Buffer Mitigation can be used in combination:

Total RequiredFunctionalMitigation CreditsReplacement Credits		Preservation Credits	Total Generated Mitigation Credits	
198,614.7	200,668		200,668	