# Road Stream Crossing Data Sheet

v2011.06\_a (June 6,2011)

<b>General Information</b>										
Watershed_Name:	Elk River Chain o	f Lake	S							Site_ID: 13 CC
Stream Name:	Cold Creek				Road	d Name:	Comfort	Road		
Observer Name(s):	Conway, Witt, No	orris,	Ackerman, B	Branson, Kel	lderh	ouse		D	ate:	7/8/2011
GPS Waypoint:						GPS Lat:	44	4.91942 G	PS Long:	-85.20031
County:	Antrim	То	wnship: Cus	ster Twp			Tier: 29	N Range	e: 7W	Section: 7
Adjacent Landowner:	Private	Local	Gov't 🗌 S	State 🗌	Fede	eral 🗌	Other			
Additional Comments:	Undersized, dead	d tree	s upstream							
<b>Crossing Information</b>										
Crossing Type:	culvert(s)			No. of Culve	erts:	1				
Structure Shape:	Round					Number		tiple Culv		
Inlet Type:	Projecting							clude #s in s		cing downstream.
Outlet Type:	Cascade over Rij	prap				Culvert/ Span #	Width(ft)	Length(ft)	Height(1	ft) Material
Structure Material:	Metal					Span #			0 (	
Substrate in Structure:	Sand									
General Conditions:	Good									
Percentage Plugged:	🗹 Inlet	0%		🗹 Ou	tlet	0%			n Pipe	1% to 25%
Percentage Crushed:	🗹 Inlet	0%		🗹 Ou	tlet	0%		✓	n Pipe (	0%
Rusted Through?			Str	ucture Inte	rior:	corrugat	ed			
Structure Length (ft):	78.5		Struct	ture Width	(ft):		5 Stru	cture Hei	ght (ft):	4
Structure Wat	er Depth (ft):	Inlet	1.53	Ou	tlet	2	2.17 P	erch Heig	ht (ft):	2.5
Embedded Depth of	Structure(ft):	Inlet	0	Ou	tlet		0			
Structure Water Ve	locity(ft/sec):	Inlet	3.57	Ou	tlet	3	8.57			
Structure Wat	ter Velocity Meas	ured:	0	ft Below Sur	face (	0 = at surf	ace)	Measured	With: I	Float Test
Stream Information										
Strea	am Flow: Bankfull									
Scour Pool (if pi	resent) Le	ngth	(ft): 25	Width (1	ft):	20 E	Depth (ft)	:		
Upstream Pond (if pr	esent) Le	ngth(	ft): 100	Width (1	ft):	50 D	epth (ft):			
Riffle Information	(measured in a riffle	e outsi	ide of zone of	influence of	cross	sing)				
Water Depth (ft):	Bankfu	II Wic	lth (ft):	Wet	ted V	Vidth (ft):		Water	Velocity	(ft/sec):
Dominant_Substrate:								Meas	ured wit	h:
Road Information										
	ype: County				her:				Sea	sonal Road?
Road Surfa				oad Conditi		Good				
Road Width at Culvert(	ft):		Location	n of Low Po	int:			Runoff	Path: Di	tch

Embankment: U	pstream Fill Dep	oth (ft):		Slope:	1:1.5		Approach
D	ownstream Fill Dep	oth (ft):		Slope:	1:1.5		Erosion (tons/year)
Left Approach: Le	ength (ft):	Slope:	Less Than 1%	Ditch Vegetation:	Partial	LS:	
Right Approach: Le	ength (ft):	Slope:	Less Than 1%	Ditch Vegetation:	Heavy	LS:	

## **Erosion Information**

Use a new row for each distinct gully/erosion location. Note prominent streambank erosion within 50 feet of crossing

Locat	ion of Erosion	Frosion	Dimensi	ons (ft)	Eroded Material	Ν	1aterial Eroded	Total Erosion
	g downstream	Length	Width	Depth			,Loam,Sandy Loam,Gravelly Loam	(tons/year)
		Lengen	Tracin	Deptil	☐ Yes			
					□ Yes			
					□ Yes			
					□ Yes			
					🗆 Yes			
				Ι	Calcul	Total E	rosion at Crossing (tons/yr):	
Check he	ere If there is eros	ion occuring	and correct	ive actions,	such as road drainage r	neasures can be in	stalled to address the problem.	
Exter	nt of Erosion:							
Er	osion Notes:							
Photo	s -enter nhot	o number	in hlank	correspo	onding to location			
111010			to Type		Photo Numbe			
	Ī	nlet	/1	cccr				
		Outlet		cccr	2			
	I	Upstream Co	onditions	cccr	3			
	I	Downstream	n Cpnditior	ns cccr	4			
		Road Approa	ach - Left	cccr	5			
	I	Road Approa	ach - Right	cccr	6			
Summ	ary Informati	on						
	-			Fish Do				
	you consider t	•	-	Fish Pa	-			
Why?	Perched outle	t is a barrie	er to upst	ream pas	sage of fish.			
Would	you recomme	nd a future	e visit to t	his site?	✓ (if yes then c	heck the box )		
Why?	Culvert is too	small and l	nas contri	buted to	tree drowning and	die-off upstrea	m. Fish barrier due to perch	ed culvert.
Were a	iny non-native	species ob	served at	this site?	$P$ $\Box$ (if yes then	check the box	)	
If yes, v	what species w	vere observ	ved?					
Fish Pa	ssage Determ	nination						
Passab	ility =	Calculate						

General Information						
Watershed_Name: Elk River Chain of Lakes					S	ite_ID: 14 CCT
Stream Name: Cold Creek	Roa	d Name:	Tyler Roa	d		
Observer Name(s): Youmans, Norris, Witt, Branson,	Narwold, Ackerm	an		D	ate:	7/1/2011
GPS Waypoint:		GPS Lat:	44	4.9174 G	PS Long:	-85.20148
County: Antrim Township: C	uster Twp		Tier: 29N	N Range	e: 7W S	Section: 18
Adjacent Landowner: 🗌 Private 🗌 Local Gov't 🗌	State 🗌 Fede	eral 🗌 🤅	Other			
Additional Comments: Large culvert, macroinvertebrate	site					
Crossing Information						
Crossing Type: culvert(s)	No. of Culverts:	1				
Structure Shape: Round				•	erts/Span	
Inlet Type: Projecting		Number th		spans left t lude #s in s		ng downstream.
Outlet Type: At Stream Grade		Culvert/	Width(ft)			) Material
Structure Material: Metal		Span #	vviatri(it)	Length(It)	Theight (Tt	
Substrate in Structure: Sand						
General Conditions: Good						
Percentage Plugged:  Inlet 0%	✓ Outlet	0%			n Pipe 09	
Percentage Crushed: 🗹 Inlet 0%	✓ Outlet	0%			n Pipe 09	%
	tructure Interior:	corrugate				
	cture Width (ft):		.25 Struc			6.4
Structure Water Depth (ft): Inlet 1	.9 Outlet	2.	.17 Pe	erch Heig	ht (ft):	0
Embedded Depth of Structure(ft): Inlet	0 Outlet		0			
Structure Water Velocity(ft/sec): Inlet 0	.4 Outlet	0.	.59			
Structure Water Velocity Measured:	1 ft Below Surface	(0 = at surfa	ace) N	1easured	With: M	leter
Stream Information						
Stream Flow: Bankfull						
Scour Pool (if present) Length (ft):	5 Width (ft):	14 D	epth (ft):	3.5		
Upstream Pond (if present) Length(ft):	Width (ft):	De	epth (ft):			
Riffle Information (measured in a riffle outside of zone	of influence of cross	sing)				
Water Depth (ft): Bankfull Width (ft):	Wetted V	Width (ft):		Water	Velocity (f	t/sec):
Dominant_Substrate:				Meas	ured with	:
Road Information						
Road_Type: Town	Other:				Seaso	onal Road? 🗌
Road Surface: Gravel	Road Condition:	Good				
Road Width at Culvert(ft): 28 Locati	on of Low Point:	At Stream	I	Runoff	Path: Ditc	:h
Embankment: Upstream Fill Depth (ft):		Slo	pe: 1:1.5	5		Approach
Downstream Fill Depth (ft):		Slo	pe: 1:1.5	)		Erosion (tons/year)
Left Approach: Length (ft): 300 Slope: 1% to 5	% Ditc	h Vegetati	ion: Heav	y LS	: 0.46	1.0645
Right Approach: Length (ft): 300 Slope: 1% to 5	% Ditc	h Vegetati	ion: Heav	y LS	: 0.46	1.0645
Erosion Information						L

Location of Erosion	Erosior	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				🗆 Yes		
			1	Calcu	Total Erosion at Crossing (tons/yr):	2.1289
Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.						

Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.

Extent of Erosion: Moderate

Erosion Notes: Erosion is centered over culvert inlet and outlet. Sand and road gravel are eroding into stream.

## Photos -enter photo number in blank corresponding to location

Photo Type	Photo Number
Inlet	cctr1
Outlet	cctr2
Upstream Conditions	cctr3
Downstream Cpnditions	cctr4
Road Approach - Left	cctr5
Road Approach - Right	cctr6

### **Summary Information**

Would you conside	er this a priority site?				
Why?					
Would you recom	nend a future visit to thi	s site? 🗌 (if y	ves then check the bo>	()	
Why?					
Were any non-nat	ve species observed at t	his site? 🛛 (i	f yes then check the b	ох )	
If yes, what specie	s were observed?				
Fish Passage Dete	rmination				
Passability =	Calculate				

General Information									
Watershed_Name:	Elk River Chain	of Lakes						Sit	e_ID: 15 CCF
Stream Name:	Cold Creek			Roa	d Name:	Fish-farn	n Road		
Observer Name(s):	Narwold, Brans	son, Knapp	, Kelderho	ouse, Norris, Si	ttel, Witt,	Youmans	, Conw D	)ate:	
GPS Waypoint:					GPS Lat:	4	4.9096	iPS Long:	-85.1987
County:	Antrim	Town	ship: Cus	ter Twp		Tier: 29	N Rang	e: 7W Se	ection: 18
Adjacent Landowner:	Private	Local Go	v't 🗌 S	itate 🗌 Fec	eral 🗌	Other			
Additional Comments:									
<b>Crossing Information</b>									
Crossing Type:			Ν	Io. of Culverts:					
Structure Shape:							•	erts/Spans	
Inlet Type:					Number		/spans left <u>clude #s in s</u>		g downstream.
Outlet Type:					Culvert/			Height(ft)	Material
Structure Material:					Span #	wiath(it)	Length(it)	Teigne(it)	Wateria
Substrate in Structure:									
General Conditions:									
Percentage Plugged:	🗹 Inle	+		☑ Outlet				n Pipe	
Percentage Crushed:	✓ Inte			✓ Outlet				n Pipe	
-	_	:t	C+ri					пере	
Rusted Through?				icture Interior:		Chara	atura 11ai		
Structure Length (ft):		lul at	Structi	ure Width (ft):			cture Hei		
Structure Wat		Inlet		Outlet		P	erch Heig	(ft):	
Embedded Depth of		Inlet		Outlet					
Structure Water Vel		Inlet		Outlet					
	er Velocity Mea	asured:	1	ft Below Surface	(0 = at surf	face) I	Measured	With:	
Stream Information									
	m Flow:								
Scour Pool (if pr	•	Length (ft):		Width (ft):		Depth (ft)			
Upstream Pond (if pr		Length(ft):		Width (ft):		epth (ft):			
	measured in a ri						1		
Water Depth (ft):	Bank	full Width	(ft):	Wetted	Width (ft)	:		Velocity (ft	/sec):
Dominant_Substrate:							Meas	sured with:	
Road Information								_	
Road_Ty	·		_	Other:				Seaso	nal Road? 🗌
Road Surfa				ad Condition:	Fair				
Road Width at Culvert(		F	Location	of Low Point:			Runoff	Path:	
Embankment: Upst		epth (ft):				ope:			Approach Erosion
	nstream Fill De					ope:			(tons/year)
Left Approach: Leng	th (ft):	Slope:		Dit	ch Vegeta	tion:	LS	5:	
Right Approach: Leng	th (ft):	Slope:		Dit	ch Vegeta	tion:	LS	5:	
Erosion Information									

Location of Erosion	Erocion	Dimensi	one (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream		Width	Depth		Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
	Length	width	Depth			(tons) year)
				□ Yes		
				🗆 Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is erosi	on occuring	and correct	ive actions,		measures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes: S	ite is near	an old ea	arthen dai	m that washed out	many years ago.	
Photos -enter photo	number	in blank	correspo	onding to location		
		to Type		Photo Numbe		
C	Dutlet		ccffi			
Summary Information	- P					
Would you consider t		ity cito?				
-	nis a priori	ty site?				
Why?						
Would you recommen	nd a future	e visit to t	his site?	□ (if yes then c	heck the box )	
Why?						
Were any non-native	species ob	served at	t this site?	P□□ (if yes then	check the box )	
, If yes, what species w	-			. ,	· ·	
Fish Passage Determ						
	alculato					

General Information												
Watershed_Name:	Elk River Ch	nain of Lak	es								Site_ID:	16 CC
Stream Name:	Cold Creek				Road	d Name:	Alden	Highway				
Observer Name(s):	Youmans, N	Norris, Bra	nson, Wit	t, Narwold, A	Ackerma	an			Dat	:e:	7,	/1/2011
GPS Waypoint:						GPS Lat:	4	14.90279	GPS	S Long:	-85	5.20282
County:	Antrim	Т	ownship:	Custer Twp			Tier: 2	9N Ra	nge:	7W	Section:	18
Adjacent Landowner:	🗌 Private	🗌 Loca	l Gov't	🗌 State	🗌 Fede	eral 🗌	Other					
Additional Comments:												
<b>Crossing Information</b>												
Crossing Type:	culvert(s)			No. of Cu	lverts:	1						
Structure Shape:	Round				Multiple Culverts/Spans						าร	
Inlet Type:	Projecting					Number t				-	ing downs	tream.
Outlet Type:	Cascade ov	ver Riprap				Culvert/						
Structure Material:	Metal					Span #	width(i	t) Length	(π) ι	Height(f	t) iviat	eriai
Substrate in Structure:	Sand											
General Conditions:	Good											
								]				
Percentage Plugged:		Inlet 0%			Outlet	0%			∠ In	•	)%	
Percentage Crushed:		Inlet 0%			Outlet	0%			✓ In	Pipe (	)%	
Rusted Through?				Structure In	terior:	corrugat	ted			_		
Structure Length (ft):	91.5	5	St	ructure Widt	:h (ft):		3.8 Sti	ucture H	leigh	t (ft):	3	3.8
Structure Wat	er Depth (ft:	): Inle	:	1.4	Outlet		1.2	Perch H	eight	(ft):		2
Embedded Depth of	Structure(ft	:): Inle	-	0	Outlet		0					
Structure Water Ve	locity(ft/sec	:): Inle	: 1	34	Outlet	1	.98					
Structure Wat	er Velocity	Measured		1 ft Below S	Surface	(0 = at surf	ace)	Measu	red V	Vith: N	Neter	
Stream Information												
Strea	am Flow: Les	ss than Ba	nkfull									
Scour Pool (if p	resent)	Length	(ft):	15 Width	ו (ft):	8 [	Depth (f	t):	3			
Upstream Pond (if pr	esent)	Length	(ft):	Widtł	ו (ft):	D	epth (ft	:):				
Riffle Information	(measured in	a riffle out	side of zon	e of influence	of cross	sing)						
Water Depth (ft):	В	ankfull Wi	dth (ft):	W	etted V	Vidth (ft):	:	Wat	er Ve	elocity	(ft/sec):	
Dominant_Substrate:								M	easur	ed wit	h:	
Road Information												
Road_Ty	ype: County	/			Other:					Seas	sonal Roa	ad? 🗌
Road Surfa	ice: Paved			Road Conc	lition:	Good						
Road Width at Culvert(	ft):	35	Loca	ation of Low	Point:	At Stream	n	Run	off Pa	ath: Dit	ch	
Embankment: Ups	tream Fil	l Depth (ft	):	28		Slo	ope: Ve	ertical			Арр	roach
Dow	vnstream Fil	l Depth (ft	):	21		Slo	ope: Ve	ertical				osion s/year)
Left Approach: Leng	gth (ft):	90 Slop	e: Less T	han 1%	Ditc	h Vegetat	tion: He	eavy	LS:	0.05		0.0052
Right Approach: Leng	gth (ft):	84 Slop	e: Less T	han 1%	Ditc	h Vegetat	tion: He	eavy	LS:	0.05		0.0049
Erosion Information											[	

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded T	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
Right Downstream				□ Yes	Sand	
				🗆 Yes		
				🗆 Yes		
				🗆 Yes		
				□ Yes		
	·		1	Calcul	Total Erosion at Crossing (tons/yr):	

Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.

Extent of Erosion: Minor

Erosion Notes: Sand and gravel being washed from road shoulders into ditches on upstream and downstream sides of highway.

Photos -enter photo number in blank corresponding to location

Photo Type	Photo Number
Inlet	ccah1
Outlet	ccah2
Upstream Conditions	ccah3
Downstream Cpnditions	ccah4
Road Approach - Left	ccah5
Road Approach - Right	ccah6

## **Summary Information**

Would you consider this a priority site?	Fish Passage
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Why?	Perched cu	vert likely prevents upstream pa	assag	e of fish.							
Would	you recomr	nend a future visit to this site?	✓	(if yes then check the box )							
Why?	Consider for culvert replacement and reworking roadside drainage.										
Were a	iny non-nati	ve species observed at this site?		] (if yes then check the box )							
If yes, v	what species	s were observed?									
Fish Pa	ssage Dete	rmination									
Passab	ility =	Calculate									

General Information											
Watershed_Name:	Elk River Chain o	f Lakes			Site_ID: 17 FCF						
Stream Name:	Finch Creek		ſ	Road Name:	Railroad Crossing						
Observer Name(s):	Sittel, Barber, Yo	umans			Date: 7/8/2				8/2011		
GPS Waypoint:				GPS Lat:	44.90	806 GP	S Long:	-85	5.21583		
County:	Antrim	Township:	Custer Twp		Tier: 29N	Range:	8W	Section:	13		
Adjacent Landowner:	Private	Local Gov't	🗌 State 🛛 🛛	-ederal 🗌	Other						
Additional Comments:	Bridge										
<b>Crossing Information</b>											
Crossing Type:	Bridge		No. of Culve	rts:							
Structure Shape:	Open Bottom Sc	uare/Rectangle	2			e Culver	•				
Inlet Type:	Other			Number t		ans left to <u>e #s in site</u>	-	ng downst	g downstream.		
Outlet Type:	At Stream Grade	2		Culvert/					artial		
Structure Material:	Wood			Span #	Width(ft) Ler	igtn(it)	Height(fl	:) Mate	erial		
Substrate in Structure:	None										
General Conditions:	Poor										
							<u>.</u>				
Percentage Plugged:	✓ Inlet		✓ Out			☑ In					
Percentage Crushed:	✓ Inlet		✓ Out		☑ In Pipe						
Rusted Through?			Structure Interi								
Structure Length (ft):			ucture Width (f	-	Structure Height (ft):						
Structure Wat	er Depth (ft):	Inlet	Out	let	Perch Height (ft):						
Embedded Depth of	Structure(ft):	Inlet	Out	Outlet							
Structure Water Ve	locity(ft/sec):	Inlet	Out	Outlet							
Structure Wat	er Velocity Meas	ured:	ft Below Surf	ft Below Surface (0 = at surface) Measured With:							
Stream Information											
Strea	m Flow: Less tha	n Bankfull									
Scour Pool (if pr	<sup>-</sup> esent) Le	ength (ft):	Width (ft	): C	Depth (ft):						
Upstream Pond (if pr	esent) Le	ength(ft):	Width (ft	): D	epth (ft):						
Riffle Information	(measured in a riffle	e outside of zone	of influence of o	crossing)							
Water Depth (ft):	Bankfu	ll Width (ft):	Wett	ed Width (ft):	· · · · ·	Nater V	elocity (	ft/sec):			
Dominant_Substrate:						Measu	red with	n:			
Road Information											
Road_Ty	/pe: Other		Oth	er: railroad i	right-o		Seas	onal Roa	d? 🗌		
Road Surfa	ce: Native Surfa	се	Road Conditio	n:							
Road Width at Culvert(	ft):	Locat	ion of Low Poi	nt:	F	Runoff P	ath:				
Embankment: Upst	tream Fill Dept	th (ft):		Slo	ope:			Аррі	roach		
Dow	nstream Fill Dept	th (ft):		Slo	ope:				osion s/year)		
Left Approach: Leng	gth (ft):	Slope:		Ditch Vegetat	tion: Heavy	LS:			, , cai j		
Right Approach: Leng	gth (ft):	Slope:		Ditch Vegetat	tion: Heavy	LS:					
Erosion Information								[			

Location of Erosion	Erosion Dimensions (ft) E		Eroded Material	Material Eroded	Total Erosion	
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						

Photos -enter photo number in blank corresponding to location

Summary Information
Would you consider this a priority site?
Why?
Would you recommend a future visit to this site? $\ \square$ (if yes then check the box )
Why?
Were any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, what species were observed?
Fish Passage Determination
Passability = Calculate

General Information											
Watershed_Name:	Elk River Chain	of Lakes							Si	te_ID:	18 FCA
Stream Name:	Finch Creek				Road	d Name:	Alden H	ighway			
Observer Name(s):	Conway, Witt, k	elderho	use, Brans	on, Ackerm	ian, N	orris		Da	ate:	7/	8/2011
GPS Waypoint:				GPS Lat			4	14.9024 G	PS Long:	-85	.21126
County:	Antrim	Том	vnship: Cu	ister Twp			Tier: 29	N Range	: 8W S	ection:	24
Adjacent Landowner:	🗌 Private 🗌	Local G	iov't 🗌	State	Fede	eral 🗌	Other				
Additional Comments:	Upstream pond										
<b>Crossing Information</b>											
Crossing Type:	culvert(s)			No. of Culv	erts:	2					
Structure Shape:	Round							ltiple Culve	•		
Inlet Type:	Projecting					Number t		s/spans left to clude #s in si		g downst	ream.
Outlet Type:	Cascade over R	iprap				Culvert/		Length(ft)	Height(ft)	Mate	arial
Structure Material:	Metal					Span # 1	3.75	74		Metal	
Substrate in Structure:	Sand					2	4	74		Metal	
General Conditions:	Fair										
Percentage Plugged:	✓ Inlet	0%		🗹 Ou	ıtlat	0%		✓ Ir	n Pipe 09	4	
Percentage Crushed:	✓ Inlet					0%			n Pipe 09		
Rusted Through?		070	C+1	ructure Inte		corrugat	od	<b>⊻</b> 11	The U/	0	
-						confugat		ictura Haia	h+ (f+),		
Structure Length (ft):		Inlat		ture Width		1		icture Heig			<b></b>
Structure Wat		Inlet	1.43		utlet		79 F	Perch Heigh	11 (11):		2
Embedded Depth of		Inlet	2 5 7		utlet						
Structure Water Ve		Inlet	2.55		utlet		55	N 4			
	er Velocity Mea	surea:		) ft Below Su	rface (	0 = at surf	ace)	Measured	with: Fi	oat Test	
Stream Information											
	m Flow: Bankfu		- •		e						
Scour Pool (if pi		ength (f		Width (	-		Depth (ft)				
Upstream Pond (if pr	esent) L	ength(ft	:):	Width (	ft):	D	epth (ft):				
Riffle Information	(measured in a rif	le outsid	e of zone o	f influence of	f cross	ing)					
Water Depth (ft):	Bankf	ull Widt	h (ft):	Wet	ted V	Vidth (ft):		Water \	/elocity (f	t/sec):	
Dominant_Substrate:								Measu	ured with:		
Road Information											
	pe: County				her:				Seaso	nal Roa	d? ∐
Road Surfa	ce: Paved			Road Conditi		Good					
Road Width at Culvert(	ft):		Locatio	on of Low Po	oint:	Other		Runoff I	Path: Ditc	h	
Embankment: Upst	tream Fill De	oth (ft):				Slo	ope: Ver	tical			roach
Dow	nstream Fill Dep	oth (ft):				Slo	ope: Ver	tical			osion /year)
Left Approach: Leng	gth (ft):	Slope:	Less Thar	า 1%	Ditc	h Vegetat	ion: Hea	avy LS:			
Right Approach: Leng	gth (ft):	Slope:	Less Thar	า 1%	Ditc	h Vegetat	ion: Hea	avy LS:			
Erosion Information											

Location of Erosion	Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion	
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
Left Downstream				✓ Yes	Sand	
Right Downstream				🗆 Yes	Sand	
				□ Yes		
				🗆 Yes		
				□ Yes		
			1	Calcul	Total Erosion at Crossing (tons/yr):	

Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.

Extent of Erosion: Severe

Erosion Notes: Extensive erosion on downstream side. Moderate erosion around guardrail mounts on upstream side.

 $\square$ 

## Photos -enter photo number in blank corresponding to location

Photo Type	Photo Number
Inlet	fcah1
Outlet	fcah2
Upstream Conditions	fcah3
Downstream Cpnditions	fcah4
Road Approach - Left	fcah5
Road Approach - Right	fcah6

### Summary Information

Would you consider this a priority site? Fish Passage

Why?	At outlet culverts are too high for fish to go upstream. Extensive erosion is putting sand into creek.
Would	you recommend a future visit to this site? $\checkmark$ (if yes then check the box )
Why?	This site should be a candidate for culvert replacement (needs larger culverts) and erosion control measures.
Were a	any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, v	what species were observed?
Fish Pa	issage Determination

Passability = Calculate

General Information									
Watershed_Name: Elk	River Chain of Lakes					Si	te_ID: 19 FC9		
Stream Name: Fin	ich Creek	Roa	d Name:	9310 Fin	ich Creek	Road			
Observer Name(s): Na	rwold, Richards, Ackerman, Nor	rris, Youmans, W	'itt		[	Date:	7/22/2011		
GPS Waypoint:			GPS Lat:	44	1.89839	PS Long:	-85.21082		
County: An	trim Township: Cu	ster Twp		Tier: 29	N Rang	e: 7W S	ection: 19		
Adjacent Landowner:	Private 🗌 Local Gov't 🗌	State 🗌 Fede	eral 🗌	Other					
Additional Comments: Bri	idge, macroinvertebrate site								
Crossing Information									
Crossing Type: Br	idge	No. of Culverts:							
Structure Shape: Op	pen Bottom Square/Rectangle				•	erts/Spans			
Inlet Type: Ot	ther		Number tl		s/spans left <u>clude #s in s</u>	-	g downstream.		
Outlet Type: At	Stream Grade		Culvert/		Length(ft		Material		
Structure Material: W	′ood		Span #	wiutii(it)	Length(It		Wateria		
Substrate in Structure: Gr	ravel								
General Conditions: Fa	iir					 			
						<b>.</b>			
Percentage Plugged:	✓ Inlet	✓ Outlet		✓ In Pipe					
Percentage Crushed:	✓ Inlet	Outlet			V	In Pipe			
Rusted Through?		ructure Interior:							
Structure Length (ft):		ture Width (ft):							
Structure Water I		Outlet							
Embedded Depth of Str	ucture(ft): Inlet	Outlet							
Structure Water Veloci		Outlet							
Structure Water	Velocity Measured:	ft Below Surface	(0 = at surfa	ace)	Measured	l With:			
Stream Information		_							
Stream F	Flow: Less than Bankfull								
Scour Pool (if prese	ent) Length (ft):	Width (ft):	D	epth (ft)	:				
Upstream Pond (if prese	ent) Length(ft):	Width (ft):	De	epth (ft):					
Riffle Information (me	easured in a riffle outside of zone of	f influence of cross	sing)						
Water Depth (ft):	Bankfull Width (ft):	Wetted V	Vidth (ft):		Water	Velocity (f	:/sec):		
Dominant_Substrate:					Meas	sured with:			
Road Information									
Road_Type:	: Private	Other:				Seaso	nal Road? 🛛		
Road Surface:	Native Surface R	oad Condition:	Poor						
Road Width at Culvert(ft):	Locatio	n of Low Point:			Runoff	Path:			
Embankment: Upstrea	am Fill Depth (ft):		Slo	ope:			Approach		
Downst	tream Fill Depth (ft):		Slo	ope:			Erosion (tons/year)		
Left Approach: Length	(ft): Slope:	Ditc	h Vegetat	ion:	LS	5:			
Right Approach: Length	(ft): Slope:	Ditc	h Vegetat	ion:	LS	5:			
Erosion Information									

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				🗆 Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring a	and correct	ive actions,		measures can be installed to address the problem.	
Extent of Erosion:	Minor					
Erosion Notes:						
Photos -enter phot	o number	in blank	correspo	onding to location	l	
		to Type		Photo Numbe	er	
	Downstream	n Cpnditio	ns fc93	10fcr4		
Summary Informati						
Would you consider t	this a priori	ty site?				
Why?						
Would you recomme	nd a future	e visit to t	his site?	□ (if yes then c	heck the box )	
Why?						
Were any non-native	species ob	served at	t this site	? $\Box$ (if yes then	check the box )	
If yes, what species w	vere observ	ved?				
Fish Passage Detern	nination					
Passability =	Calculate					

<b>General Information</b>												
Watershed_Name:	Elk River Chair	n of Lake	S						Si	te_ID: 20 FCF		
Stream Name:	Finch Creek				Road	d Name:	Finch Creek Road					
Observer Name(s):	Branson, Kelde	erhouse,	Barber, (	Conway				Da	ate:	7/22/2011		
GPS Waypoint:						GPS Lat:	4	14.9586 GI	PS Long:	-85.1972		
County:	Antrim	То	wnship:	Custer Twp			Tier: 29	N Range	: 7W S	ection: 30		
Adjacent Landowner:	Private	Local	Gov't [	State	Fede	eral 🗌	Other					
Additional Comments:												
<b>Crossing Information</b>												
Crossing Type:	culvert(s)			No. of Culv	erts:	2						
Structure Shape:	Round						Mu	ltiple Culve	erts/Spans			
Inlet Type:	Projecting					Number t		s/spans left to <u>clude #s in si</u>	-	g downstream.		
Outlet Type:	Cascade over	Riprap				Culvert/				Matarial		
Structure Material:	Metal					Span # 1	wiath(it)	Length(ft)	Height(ft)	Material Metal		
Substrate in Structure:						2				Metal		
General Conditions:						2				IVIELAI		
Percentage Plugged:	✓ Inle			🗹 Οι					n Pipe			
Percentage Crushed:	🗹 Inle	et		🗹 Οι	utlet			✓ Ir	n Pipe			
Rusted Through?			:	Structure Inte	rior:							
Structure Length (ft):			Str	ucture Width	(ft):		Stru	cture Heig	ht (ft):			
Structure Wat	ter Depth (ft):	Inlet		Οι	utlet		F	Perch Heigh	nt (ft):	2.5		
Embedded Depth of	Structure(ft):	Inlet		Οι	utlet							
Structure Water Ve	locity(ft/sec):	Inlet		Οι	utlet							
Structure Wat	ter Velocity Me	asured:		ft Below Su	rface (	0 = at surf	ace)	Measured	With:			
Stream Information												
Strea	am Flow: Bankf	ull										
Scour Pool (if p	resent)	Length (	ft):	Width (	ft):	C	Depth (ft)	):				
Upstream Pond (if pr	resent)	Length(f	ft):	50 Width (	ft):	20 D	epth (ft):					
Riffle Information	(measured in a ri	iffle outsi	de of zone	of influence of	f cross	ing)						
Water Depth (ft):	Ban	kfull Wid	th (ft):	Wet	ted V	Vidth (ft):		Water \	/elocity (f	t/sec):		
Dominant_Substrate:						. ,			ured with:			
– Road Information												
Road_Ty	ype: County			Ot	her:				Seaso	nal Road?		
Road Surfa	ace: Paved			Road Condit	ion:	Good						
Road Width at Culvert(	(ft):		Loca	tion of Low Po	oint:			Runoff I	Path: Ditc	h		
Embankment: Ups	tream Fill D	epth (ft):		2		Slo	ope: Mo	re than 1:2	2	Approach		
•	vnstream Fill De			2			•	re than 1:2		Erosion (tons/year)		
Left Approach: Leng		Slope:			Ditcl	h Vegetat	•			(consy year)		
Right Approach: Leng		Slope:				h Vegetat			:			
Erosion Information		•				-						

Location of Erosion	on of Erosion Erosion Dimensions (ft) Erode				Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				🗆 Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	sion occuring a	and correct	ive actions,	such as road drainage r	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						
Photos -enter phot	o number	in blank	correspo	onding to location		
		to Type		Photo Numbe	r	
	Inlet		fcfcr			
	Outlet		fcfcr			
	Downstream	Cphaitio	ns fcfcr	-4		
Summary Informat	ion					
Would you consider	this a priori	ty site?	Fish Pa	ssage		
Why? Perch height	creates fish	passage	barrier to	upstream travel.		
Would you recomme	end a future	visit to t	his site?	□ (if yes then cl	neck the box )	
Why?						
Were any non-native	•		t this site:	<sup>2</sup> □ (if yes then	check the box )	
If yes, what species w		red?				
Fish Passage Detern	nination					
Passability =	Calculato					

<b>General Information</b>																
Watershed_Name:	Elk Rive										Site_	ID: 2	21 FCE			
Stream Name:	Finch Creek					Road Name:				Elder Road, East						
Observer Name(s):	Richard	s, Narwo	ld, Acke	erman, N	lorris, Wit	is, Witt, Conway						Dat	e:		7/22	2/2011
GPS Waypoint:							(	GPS Lat:		44.	88843	GPS	5 Long:		-85.	20766
County:	Antrim		Том	nship:	Custer Tw	р			Tier	: 291	I Rai	nge:	7W	Sect	ion:	19
Adjacent Landowner:	🗌 Priva	ate 🗌	Local G	ov't [	State		Fede	ral 🗌	Othe	r						
Additional Comments:																
<b>Crossing Information</b>																
Crossing Type:	culvert	(s)			No. of (	Culve	rts:	1								
Structure Shape:	Round						Γ			Mult	iple Cu	lver	ts/Spai	ns		
Inlet Type:	Project	ing						Number t	he cul				-	ing do	wnstr	eam.
Outlet Type:	Freefal	l into Poo	ol				F	Include #s in Culvert/								
Structure Material:	Metal							Span #	widti	n(ft) I	_ength(	(TT) H	leight(f	τ)	Mate	rial
Substrate in Structure:	None															
General Conditions:	Good						_									
						_	L									
Percentage Plugged:		✓ Inlet				Out		0%					•	)%		
Percentage Crushed:		🗹 Inlet	0%		$\checkmark$	Out	let	0%				ln 🛽	Pipe (	)%		
Rusted Through?					Structure	Interi	or:	corrugat	ed							
Structure Length (ft):				Str	ucture Wi	dth (f	ft):		9	Struc	ture H	eigh	t (ft):			
Structure Wat	ter Deptł	h (ft):	Inlet			Out	let			Pe	erch He	eight	(ft):			
Embedded Depth of	Structur	re(ft):	Inlet			Out	let									
Structure Water Ve	locity(ft/	/sec):	Inlet			Out	let									
Structure Wat	ter Veloc	ty Meas	ured:		ft Belov	v Surf	urface (0 = at surface) Measured With:									
Stream Information																
Strea	am Flow:	Bankful														
Scour Pool (if p	resent)	Le	ength (f	t):	30 Wic	lth (ft	:):	20 C	Depth	(ft):		4				
Upstream Pond (if pr	resent)	Le	ength(ft	):	Wic	lth (ft	:):	D	epth	(ft):						
Riffle Information	(measure	ed in a riffl	e outsid	e of zone	of influen	ce of c	crossi	ng)								
Water Depth (ft):		Bankfu	ull Widt	h (ft):		Wett	ed W	/idth (ft):			Wate	er Ve	locity	(ft/se	ec):	
Dominant Substrate:								( )					, ed wit	•		
– Road Information																
Road_Ty	ype: Coi	unty				Oth	er:						Seas	sonal	Road	1? □
Road Surfa	ice: Gra	avel			Road Co	nditio	on: F	Poor								
Road Width at Culvert(	(ft):			Loca	ion of Lov	<i>N</i> Poi	nt: A	At Strean	n		Runc	off Pa	ath: Dit	ch		
Embankment: Ups		Fill Dep	th (ft):		1		L	Slo	ope:	More	e than	1:2			Appro	oach
Dow	vnstream	n Fill Dep			1				•		e than				Eros (tons/	sion
Left Approach: Leng	F		Slope:	1% to 5	5%		Ditch	Negetat	•			LS:			(tons/	yearj
Right Approach: Leng	[		Slope:					vegetat				LS:				
Erosion Information			-					-						[		

Location of Erosion	Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion	
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
			1	Calcu	Total Erosion at Crossing (tons/y	r):

Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.

Extent of Erosion: Severe

Erosion Notes: Stream has eroded around culvert such that water flows downstream outside the confines of the culvert. Road is steep, made of sand and gravel and is severely eroded.

#### Photos -enter photo number in blank corresponding to location

Photo Type	Photo Number						
Inlet	fcere1						
Outlet	fcere2						
Upstream Conditions	fcere3						
Downstream Cpnditions	fcere4						
Road Approach - Left	fcere5						
Road Approach - Right	fcere6						

### Summary Information

Would you	consider this a	priority site?	Erosion
-----------	-----------------	----------------	---------

Why?	Road is at risk of collapse due to erosion around culvert.									
Would	you recommend a future visit to this site? $\checkmark$ (if yes then check the box )									
Why?	Replace culvert, repair roadway									
Were a	any non-native species observed at this site? $\square$ (if yes then check the box )									
If yes, v	what species were observed?									
Fish Pa	ssage Determination									
Passab	ility = Calculate									

<b>General Information</b>															
Watershed_Name:	Elk River C					Site_ID: 22 FCE									
Stream Name:	Finch Creek					Road Name:			Elder Road, West						
Observer Name(s):	Richards, N	Narwol	d, Acke	erman, N	lorris, Wit	Witt, conway					Da	ate:		7/22	/2011
GPS Waypoint:							G	SPS Lat:		44.88	842 GI	PS Long:		-85.2	20894
County:	Antrim		Том	nship:	Custer Tw	р			Tier:	29N	Range	: 7W	Section	on:	19
Adjacent Landowner:	🗌 Private		Local G	ov't [	State	F	Feder	al 🗌	Other						
Additional Comments:															
<b>Crossing Information</b>															
Crossing Type:	culvert(s)				No. of (	Culver	rts:	1							
Structure Shape:	Round						Γ		N	1ultipl	e Culve	rts/Spai	าร		
Inlet Type:	Projecting	5						Number t	he culve			o right, fac te sketch	ing dov	vnstre	eam.
Outlet Type:	At Stream	Grade	3					Culvert/							
Structure Material:	Metal							Span #	wiath	π) Ler	ngth(ft)	Height(f	τ) Ν	Лater	Tai
Substrate in Structure:	Sand														
General Conditions:	Good														
						_									
Percentage Plugged:		Inlet				Out						n Pipe			
Percentage Crushed:		Inlet			$\checkmark$	Out	let		🗹 In Pipe						
Rusted Through?					Structure	Interi	or: o	corrugat	ed						
Structure Length (ft):				Str	ucture Wi	dth (f	ft):		St	ructu	re Heig	ht (ft):			
Structure Wat	er Depth (f	ft):	Inlet			Out	let			Perc	h Heigł	nt (ft):			
Embedded Depth of	Structure(f	ft):	Inlet			Out	let								
Structure Water Ve	locity(ft/se	c):	Inlet			Out	let								
Structure Wat	er Velocity	Measu	ured:		ft Belov	v Surfa	Surface (0 = at surface) Measured With:								
Stream Information															
Strea	am Flow: Le	ess tha	n Bank	full											
Scour Pool (if p	resent)	Le	ngth (f	t):	Wic	lth (ft	:):	D	)epth (	ft):					
Upstream Pond (if pr	esent)	Le	ngth(ft	):	Wic	lth (ft	):	De	epth (f	t):					
Riffle Information	(measured in	n a riffle	e outsid	e of zone	of influen	ce of c	rossin	ng)							
Water Depth (ft):		Bankfu	ll Widt	h (ft):		Wette	ed Wi	idth (ft):		١	Nater \	elocity/	(ft/sec	:):	
Dominant_Substrate:											Measu	ired wit	h:		
– Road Information															
Road_Ty	ype: Count	ty				Oth	er:					Seas	sonal I	₹oad	?
Road Surfa	ice: Grave	el			Road Co	nditio	on: P	oor							
Road Width at Culvert(	ft):			Locat	ion of Lov	w Poir	nt: A	t Stream	n	F	Runoff I	Path: Ro	adway	/	
Embankment: Ups	tream F	ill Dept	th (ft):		1			Slo	ope: 1	:2			Α	ppro	bach
Dow	vnstream Fi	ill Dept	:h (ft):		1			Slo	ope: 1	:2				Eros tons/y	
Left Approach: Leng	gth (ft):	50	Slope:	1% to 5	5%	(	Ditch	Vegetat	ion: P	artial	LS:				
Right Approach: Leng	gth (ft):	100	Slope:	Less Th	an 1%		Ditch	Vegetat	ion: P	artial	LS:				
Erosion Information													l		

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				🗆 Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				□ Yes		
	J			Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is erosic	on occuring a	and correct	ive actions,	-	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						
Photos -enter photo	number	in blank	correspo	onding to location		
		to Type		Photo Numbe	er	
	outlet Ipstream Co	anditions	fcer fcer			
			reer			
Summary Information	on					
Would you consider th	nis a priori	ty site?				
Why?						
Would you recommer	nd a future	e visit to t	his site?	□ (if yes then c	heck the box )	
Why?						
Were any non-native	species ob	served at	this site?	) 🗌 (if yes then	check the box )	
If yes, what species we	-		. this site.	(ii yes then		
Fish Passage Determ						
	alculato					

General Information						
Watershed_Name: Elk River Chain of Lakes					S	ite_ID: 23 FCB
Stream Name: Finch Creek	Road	d Name:	Bebb Road			
Observer Name(s): Kelderhouse, Barber, Conway, Bra	anson			Da	ite:	7/22/2011
GPS Waypoint:		GPS Lat:	44.8	3739 GF	S Long:	-85.1923
County: Antrim Township: Cu	ister Twp		Tier: 29N	Range	: 7W .	Section: 30
Adjacent Landowner: 🗌 Private 🗌 Local Gov't 🗌	State 🗌 Fede	eral 🗌	Other			
Additional Comments:						
Crossing Information						
Crossing Type: culvert(s)	No. of Culverts:	1				
Structure Shape: Round			Multip	le Culve	rts/Span	S
Inlet Type:		Number t		ans left to le #s in sit	-	ng downstream.
Outlet Type:		Culvert/	Width(ft) Lei			) Material
Structure Material: Metal		Span #		igtii(it)	Height(ft	
Substrate in Structure:						
General Conditions:						
					<b>.</b>	
Percentage Plugged:  Inlet	✓ Outlet				Pipe	
Percentage Crushed:  Inlet	Outlet			⊻ In	Pipe	
	ructure Interior:	corrugat				
Structure Length (ft): Struc	ture Width (ft):		Structu	re Heigl	nt (ft):	
Structure Water Depth (ft): Inlet	Outlet		Perc	h Heigh	t (ft):	
Embedded Depth of Structure(ft): Inlet	Outlet					
Structure Water Velocity(ft/sec): Inlet	Outlet					
Structure Water Velocity Measured:	ft Below Surface (	0 = at surf	<sub>ace)</sub> Me	asured	With:	
Stream Information						
Stream Flow: Less than Bankfull						
Scour Pool (if present) Length (ft):	Width (ft):	C	Depth (ft):			
Upstream Pond (if present) Length(ft): 100	) Width (ft):	50 D	epth (ft):			
Riffle Information (measured in a riffle outside of zone or	f influence of cross	ing)				
Water Depth (ft): Bankfull Width (ft):	Wetted W	Vidth (ft):		Water V	elocity (f	t/sec):
Dominant_Substrate:				Measu	red with	:
Road Information						
Road_Type: County	Other:				Seaso	onal Road? 🛛
Road Surface: R	Road Condition:					
Road Width at Culvert(ft): Locatio	on of Low Point:		f	Runoff F	ath:	
Embankment: Upstream Fill Depth (ft):		Slo	ope:			Approach
Downstream Fill Depth (ft):		Slo	ope:			Erosion (tons/year)
Left Approach: Length (ft): Slope:	Ditc	h Vegetat	ion: Heavy	LS:		
Right Approach: Length (ft): Slope:	Ditc	h Vegetat	ion: Heavy	LS:		
Erosion Information						[

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion	
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)	
				□ Yes			
				□ Yes			
				🗆 Yes			
				□ Yes			
				□ Yes			
				Calcu	Total Erosion at Crossing (tons/yr):		
Check here If there is erosic	on occuring a	and correct	ive actions,		neasures can be installed to address the problem.		
Extent of Erosion:			,	0			
Erosion Notes:							
Photos -enter photo	number	in hlank	correspo	unding to location			
		to Type		Photo Numbe			
U	pstream Co		fcbr				
D	ownstream	n Cpndition	ns fcbr	4			
Summary Information	n						
Would you consider th	nis a priori	ty site?					
Why?							
Would you recommen	Would you recommend a future visit to this site? 🗹 (if yes then check the box )						
Why? Upstream pone	d suggests	culvert is	s undersie	ed. Dead trees ups	tream.		
Were any non-native s	species ob	served at	t this site	? 🗌 (if ves then	check the box )		
-	If yes, what species were observed?						
Fish Passage Determi							
	alculata						

General Information	
Watershed_Name: Elk River Chain of Lakes	Site_ID: 24 FC
Stream Name: Finch Creek	Road Name: Way Road
Observer Name(s): Branson, Kelderhouse, Witt, Co	nway Date: 7/22/2011
GPS Waypoint:	GPS Lat:         44.8647         GPS Long:         -85.1832
County: Antrim Township:	Custer Twp Tier: 29N Range: 7W Section: 32
Adjacent Landowner: 🗌 Private 🗌 Local Gov't	State Federal Other
Additional Comments: Undersized, large upstream por	nd
Crossing Information	
Crossing Type: culvert(s)	No. of Culverts:
Structure Shape: Round	Multiple Culverts/Spans
Inlet Type: Projecting	Number the culverts/spans left to right, facing downstream. Include #s in site sketch
Outlet Type: At Stream Grade	Culvert/
Structure Material: Metal	Span # Width(ft) Length(ft) Height(ft) Material
Substrate in Structure:	
General Conditions:	
Percentage Plugged:	✓ Outlet
	✓ Outlet     ✓ In Pipe       ✓ Outlet     ✓ In Pipe
	Structure Interior: corrugated
	ructure Width (ft): Structure Height (ft):
Structure Water Depth (ft): Inlet	Outlet Perch Height (ft):
Embedded Depth of Structure(ft): Inlet	Outlet
Structure Water Velocity(ft/sec): Inlet	Outlet
Structure Water Velocity Measured:	ft Below Surface (0 = at surface) Measured With:
Stream Information	
Stream Flow:	
Scour Pool (if present) Length (ft):	Width (ft): Depth (ft):
Upstream Pond (if present) Length(ft):	Width (ft): Depth (ft):
Riffle Information (measured in a riffle outside of zone	e of influence of crossing)
Water Depth (ft): Bankfull Width (ft):	Wetted Width (ft): Water Velocity (ft/sec):
Dominant_Substrate:	Measured with:
Road Information	
Road_Type:	Other: Seasonal Road?
Road Surface:	Road Condition:
Road Width at Culvert(ft): Loca	tion of Low Point: Runoff Path:
Embankment: Upstream Fill Depth (ft):	Slope: Approach
Downstream Fill Depth (ft):	Slope: Erosion (tons/year)
Left Approach: Length (ft): Slope:	Ditch Vegetation: LS:
Right Approach: Length (ft): Slope:	Ditch Vegetation: LS:
Erosion Information	

Location of Erosion	Erosior	n Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						

Photos -enter photo number in blank corresponding to location

Summary Information
Would you consider this a priority site?
Why?
Would you recommend a future visit to this site? $\ \square$ (if yes then check the box )
Why?
Were any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, what species were observed?
Fish Passage Determination
Passability = Calculate

General Information		• • •								
_		Elk River Chain of Lakes						S	ite_ID:	01 SCR
Stream Name:	Shanty Creek			Road Name:		Road to nowhere				
Observer Name(s):	Jim Kelderhous	e					D	ate:		
GPS Waypoint:				G	PS Lat:		G	PS Long:		
County:	Antrim	Township	: Custer Twp			Tier: 29	N Range	e: 7W	Section:	4
Adjacent Landowner:	Private	Local Gov't	□ State □	Federa	al 🗌	Other				
Additional Comments:										
<b>Crossing Information</b>										
Crossing Type:	culvert(s)		No. of Culv	erts:	1					
Structure Shape:	Round				_		tiple Culve	• •		
Inlet Type:					Number t		/spans left to clude #s in si		ng downst	ream.
Outlet Type:					Culvert/		Length(ft)		) Mate	arial
Structure Material:					Span #	wiath(it)	Length(It)	Teight(it	) Wate	
Substrate in Structure:										
General Conditions:										
Percentage Plugged:	🗹 Inle	+	✓ Ou	utlet				n Pipe		
Percentage Crushed:	∠ Inle		Ou					n Pipe		
Rusted Through?			Structure Inte				<u> </u>	Tipe		
Structure Length (ft):		c	Structure Width			C+ru	cture Heig	bt (ft).		
							-			
Structure Wat		Inlet		utlet		P	erch Heigl	nt (nt):		
Embedded Depth of		Inlet		itlet						
Structure Water Ve		Inlet		ıtlet						
	ter Velocity Mea	asured:	ft Below Su	rface (0	= at surfa	ace) I	Measured	With:		
Stream Information										
	am Flow:									
Scour Pool (if p	resent)	Length (ft):	Width (	-		epth (ft)				
Upstream Pond (if pr	esent)	Length(ft):	Width (	ft):	D	epth (ft):				
Riffle Information	(measured in a ri	ffle outside of zo	one of influence of	fcrossin	g)					
Water Depth (ft):	Bank	full Width (ft):	Wet	ted Wi	dth (ft):		Water \	/elocity (	t/sec):	
Dominant_Substrate:							Meas	ured with	•	
Road Information										
Road_Ty	ype:		Ot	her:				Sease	onal Roa	d? 🗌
Road Surfa	ice:		Road Conditi	ion:						
Road Width at Culvert(	(ft):	Lo	cation of Low Po	oint:			Runoff	Path:		
Embankment: Ups	tream Fill De	pth (ft):			Slo	ope:				roach
Dov	vnstream Fill De	pth (ft):			Slo	ope:				sion /year)
Left Approach: Leng	gth (ft):	Slope:		Ditch	Vegetat	ion:	LS	:		. ,
Right Approach: Leng	gth (ft):	Slope:		Ditch	Vegetat	ion:	LS	:		
Erosion Information									1	

Location of Erosion	Erosior	n Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						

Photos -enter photo number in blank corresponding to location

Summary Information
Would you consider this a priority site?
Why?
Would you recommend a future visit to this site? $\ \square$ (if yes then check the box )
Why?
Were any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, what species were observed?
Fish Passage Determination
Passability = Calculate

General Information								
Watershed_Name:	Elk River Chain o	f Lakes		Site_ID: 02 S				
Stream Name:	Shanty Creek		Roa	Road Name: Railroad Crossing				
Observer Name(s):	Richards, Kelder	house, Narwold,	Branson, Ackerm	an, Norris, V	Witt, You	umans Da	ate:	7/22/2011
GPS Waypoint:				GPS Lat:	44.9	92972 GF	PS Long:	-85.20278
County:	Antrim	Township: C	uster Twp	٦	Tier: 29N	I Range	: 7W Se	ection: 7
Adjacent Landowner:	Private	Local Gov't	State 🗌 Fede	eral 🗌 C	)ther			
Additional Comments:	Bridge							
<b>Crossing Information</b>								
Crossing Type:	Bridge		No. of Culverts:					
Structure Shape:	Open Bottom Se	quare/Rectangle				•	rts/Spans	
Inlet Type:	Other			Number the		spans left to ude #s in sit		downstream.
Outlet Type:	At Stream Grad	е		Culvert/			Height(ft)	Material
Structure Material:	Concrete			Span # V			neight(it)	Ivialeria
Substrate in Structure:	Sand							
General Conditions:	Fair							
Percentage Plugged:	🗹 Inlet		✓ Outlet			✓ In	n Pipe	
Percentage Crushed:	🗹 Inlet		✓ Outlet			☑ In	Pipe	
Rusted Through?		St	ructure Interior:				•	
Structure Length (ft):		Stru	cture Width (ft):	1	L2 Struct	ture Heig	ht (ft):	
Structure Wat		Inlet	Outlet			rch Heigh		
Embedded Depth of		Inlet	Outlet			0		
Structure Water Ve		Inlet	Outlet					
	ter Velocity Meas		8 ft Below Surface	(0 = at surfac	ce) M	leasured	With: Me	ter
Stream Information								
Strea	am Flow: Less tha	ın Bankfull						
Scour Pool (if p	resent) Le	ength (ft):	Width (ft):	De	epth (ft):			
Upstream Pond (if pr	resent) Le	ength(ft):	Width (ft):	Dep	oth (ft):			
Riffle Information	(measured in a riffl	e outside of zone o	of influence of cross	sing)				
Water Depth (ft):	Bankfı	ull Width (ft):	Wetted V	Nidth (ft):		Water V	/elocity (ft/	/sec):
Dominant_Substrate:						Measu	red with:	
Road Information								
Road_Ty	ype: Other		Other:	railroad rig	ght-o		Seasor	al Road? 🗌
Road Surfa	ce: Native Surfa	ace	Road Condition:	Fair				
Road Width at Culvert(	ft):	Locati	on of Low Point:			Runoff F	Path: Ditch	
Embankment: Ups	tream Fill Dep	th (ft):		Slop	be:			Approach
Dow	vnstream Fill Dep	th (ft):		Slop	be:			Erosion (tons/year)
Left Approach: Leng	gth (ft):	Slope:	Ditc	h Vegetatio	on: Partia	al LS:		
Right Approach: Leng	gth (ft):	Slope:	Ditc	h Vegetatio	on: Partia	al LS:		
Erosion Information							l	

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				🗆 Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
L				Calcul	Total Erosion at Crossing (tons/yr):	<u> </u>
Check here If there is eros	ion occuring a	and correct	ive actions,	such as road drainage r	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						
Photos -enter phot	o number	in blank	correspo	onding to location		
		to Type		Photo Numbe	er	
-	Inlet		scrr			
	Upstream Conditions scrr3					
	Road Approa	ach - Right	scrr	0		
Summary Informati	ion					
Would you consider	this a priori	ty site?				
Why?						
Would you recomme	nd a future	visit to t	his site?	$\Box$ (if yes then c	heck the box )	
Why?						
Were any non-native	Were any non-native species observed at this site? $\Box$ (if yes then check the box )					
	If yes, what species were observed?					
Fish Passage Detern						
	Calculate					

General Information						
Watershed_Name: ElkRiver Chain ofLakes					Sit	e_ID: 03 SC
Stream Name: Shanty Creek	Road	Road Name: Old hydropower site				
Observer Name(s): Sittel, Branson, Witt				Da	ate:	7/15/2011
GPS Waypoint:		GPS Lat:		44.93 GI	PS Long:	-85.2001
County: Antrim Township: C	Custer Twp		Tier: 29N	Range	: 7W Se	ection: 7
Adjacent Landowner:  Private Local Gov't	🛛 State 🛛 🗆 Fede	eral 🗌	Other			
Additional Comments:						
Crossing Information						
Crossing Type: Dam	No. of Culverts:					
Structure Shape: Square/Rectangle				•	erts/Spans	
Inlet Type: Other		Number th		pans left to ude #s in sit		g downstream.
Outlet Type: Cascade over Riprap		Culvert/	Width(ft) L			Material
Structure Material: Concrete		Span # \		engin(it)	Teight(It)	Wateria
Substrate in Structure: Sand						
General Conditions: Fair						
Percentage Plugged: 🗹 Inlet 0%	✓ Outlet	0%			n Pipe 0%	
	✓ Outlet	0% 0%			•	
					n Pipe 0%	
5	tructure Interior:	smooth				_
	icture Width (ft):		12 Struct			5
Structure Water Depth (ft): Inlet 0.7		0.	75 Pe	rch Heigł	nt (ft):	6
Embedded Depth of Structure(ft): Inlet	Outlet					
Structure Water Velocity(ft/sec): Inlet	Outlet					
Structure Water Velocity Measured:	ft Below Surface (	0 = at surfa	ce) M	easured	With:	
Stream Information						
Stream Flow: Bankfull						
	20 Width (ft):		epth (ft):	3.5		
Upstream Pond (if present) Length(ft): 120	00 Width (ft):	200 De	pth (ft):			
Riffle Information (measured in a riffle outside of zone	of influence of cross	ing)				
Water Depth (ft): Bankfull Width (ft):	Wetted V	Vidth (ft):		Water V	/elocity (ft	/sec):
Dominant_Substrate:				Measu	ured with:	
Road Information						
Road_Type: Private	Other:				Seaso	nal Road? 🗌
Road Surface: Gravel	Road Condition:	Good				
Road Width at Culvert(ft): Locat	on of Low Point:			Runoff F	Path:	
Embankment: Upstream Fill Depth (ft):	0	Slo	pe:			Approach
Downstream Fill Depth (ft):	0	Slo	pe:			Erosion (tons/year)
Left Approach: Length (ft): 100 Slope: Less That	an 1% Ditc	h Vegetati	on: Partia	al LS:		
Right Approach: Length (ft): 100 Slope: Less The	an 1% Ditc	h Vegetati	on: Partia	al LS:		
Erosion Information						

Use a new row for each distinct gully/erosion location.	Note prominent streambank erosion within 50 feet of crossing
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Location of Erosion	ation of Erosion Erosion Dimensions (ft)		ons (ft)	Eroded Material	Material Eroded	Total Erosion	
facing downstream	Length	Width	Depth	-	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)	
				🗆 Yes			
				🗆 Yes			
				□ Yes			
				□ Yes			
				□ Yes			
				Calcul	Total Erosion at Crossing (tons/yr):	- 1	
Check here If there is erosi	on occuring a	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.		
Extent of Erosion:							
Erosion Notes: N	lo observa	ble erosi	on				
Photos -enter photo			correspo				
c	Dutlet	to Type	schp	Photo Numbe	<u>9</u> <b>r</b>		
			• •				
Summary Information	on						
Would you consider the		ty site?	Fish Pa	ssage			
Why? Candidate for	dam remo	val.					
Would you recommer	nd a future	visit to t	his site?	✓ (if yes then c	heck the box )		
Why? Possible private property concerns.							
Were any non-native species observed at this site? $\Box$ (if yes then check the box )							
If yes, what species were observed?							
Fish Passage Determination							
Passability =	alculate						

General Information											
Watershed_Name:	Elk RiverChaind	ofLakes			Site_ID: 04 SC					e_ID: 04 SC	
Stream Name:	Shanty Creek		Road	l Name:	Grass Ri	ver Road	t				
Observer Name(s):	Branson, Barbe	er, Youmans	, Conwa	ay, Witt					Date:		6/24/2011
GPS Waypoint:						GPS Lat:	4	44.9317	GPS L	ong:	-85.1988
County:	Antrim	Towns	hip: Cu	ster Twp			Tier: 29	9N Rar	ige: 7	W Se	ection: 7
Adjacent Landowner:	Private	Local Gov	't 🗌	State 🗌	Fede	ral 🗌	Other				
Additional Comments:	Macroinverteb	rate site									
<b>Crossing Information</b>											
Crossing Type:	culvert(s)			No. of Culve	erts:	1					
Structure Shape:	Round				Multiple Culverts/Spans						
Inlet Type:	Projecting					Number t		s/spans lei iclude #s ii	-	-	downstream.
Outlet Type:	At Stream Gra	de				Culvert/	Width(ft)			ght(ft)	Material
Structure Material:	Metal					Span #	wiatri(it)			giit(it)	Wateria
Substrate in Structure:	Sand										
General Conditions:	Good										
Deveente de Diverse du	🗹 Inle			✓ Ou							
Percentage Plugged:				lou Iv Ou					In Pip		
Percentage Crushed:	✓ Inle	21	Ch				d	V	] In Pip	be	
Rusted Through?				ucture Inter		corrugat				c. \	
Structure Length (ft):		Inlet	Struc	ture Width				icture He	•		
Structure Wat	Ou										
Embedded Depth of		Inlet			tlet						
Structure Water Vel	-	Inlet		Ou	tlet						
	er Velocity Mea	asured:		ft Below Sur	face (	0 = at surf	ace)	Measure	ed Wit	h:	
Stream Information				٦							
	m Flow: Less th										
Scour Pool (if pr	-	Length (ft):		Width (f			Depth (ft				
Upstream Pond (if pro	esent)	Length(ft):		Width (f	t):	D	epth (ft)	:			
Riffle Information (	measured in a rit	ffle outside o	f zone of	f influence of	crossi	ing)					
Water Depth (ft):	Bank	full Width (f	ft):	Wet	ted W	/idth (ft):		Wate	er Velo	city (ft,	/sec):
Dominant_Substrate:								Me	asured	l with:	
Road Information											
Road_Ty	pe: County			Otl	ner:					Seasor	nal Road? 🗌
Road Surfac	ce: Gravel		R	oad Conditi	on:	Fair					
Road Width at Culvert(	ft):		Locatio	n of Low Po	int:			Runo	ff Path	ı:	
Embankment: Upst	ream Fill De	epth (ft):				Slo	ope:				Approach
Dow	nstream Fill De	pth (ft):				Slo	ope:				Erosion (tons/year)
Left Approach: Leng	th (ft):	Slope:			Ditch	n Vegetat	ion:		LS:		
Right Approach: Leng	th (ft):	Slope:			Ditch	n Vegetat	ion:		LS:		
Erosion Information										l	

Location of Erosion	ation of Erosion Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion			
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)		
				□ Yes				
				□ Yes				
				□ Yes				
				□ Yes				
				🗆 Yes				
	JJ			Calcul	Total Erosion at Crossing (tons/yr):	<u> </u>		
Check here If there is erosic	on occuring a	and correct	ive actions,		measures can be installed to address the problem.			
Extent of Erosion:								
Erosion Notes:								
Photos -enter photo	number	in blank	correspo	onding to location	L			
		to Type		Photo Numbe	er			
C	outlet		scgr	r2				
Summary Information	on							
Would you consider th	nis a priori	ty site?						
Why?								
Would you recommer	nd a future	e visit to t	his site?	□ (if yes then c	heck the box )			
Why?								
Were any non-native species observed at this site? $\Box$ (if yes then check the box )								
If yes, what species were observed?								
Fish Passage Determ								
-	alculate							

General Information									
Watershed_Name: Elk River Chain ofLakes					Si	te_ID: 05 SC			
Stream Name: Shanty Creek	Shanty Creek Road Name: M-88								
Observer Name(s): Narwold, Kelderhouse, Acker	rman, Witt			Da	ate:	6/24/2011			
GPS Waypoint:		GPS Lat:	44	.93238 G	PS Long:	-85.19836			
County: Antrim Townshi	p: Custer Twp		Tier: 29	N Range	:: 7w S	ection: 7			
Adjacent Landowner:  Private  Local Gov't	🗌 State 🗌 Fede	eral 🗌	Other						
Additional Comments: Bridge									
Crossing Information									
Crossing Type: Bridge	No. of Culverts:								
Structure Shape: Square/Rectangle				tiple Culve	•				
Inlet Type: Wingwall 10-30 Degree		Number t		/spans left to clude #s in si		g downstream.			
Outlet Type: Outlet Apron		Culvert/		Length(ft)		Material			
Structure Material: Concrete		Span #	wideri(it)	Lengen(it)	neight(h)	Wateria			
Substrate in Structure: Sand									
General Conditions: Good									
Percentage Plugged: 🗹 Inlet 0%	✓ Outlet	0%			n Pipe 0%	2			
Percentage Crushed: ✓ Inlet 0%	✓ Outlet	0%			n Pipe 09				
	Structure Interior:	smooth		• 11	Tripe 07	0			
Rusted Through?		smooth	Ctrus		L. +. (f+).				
	Structure Width (ft):			cture Heig					
Structure Water Depth (ft): Inlet	Outlet		Р	erch Heigł	nt (ft):				
Embedded Depth of Structure(ft): Inlet	Outlet								
Structure Water Velocity(ft/sec): Inlet	Outlet								
Structure Water Velocity Measured:	ft Below Surface (	0 = at surf	ace) l	Measured	With:				
Stream Information									
Stream Flow:									
Scour Pool (if present) Length (ft):	Width (ft):		epth (ft)	:					
Upstream Pond (if present) Length(ft):	Width (ft):	D	epth (ft):						
Riffle Information (measured in a riffle outside of z	one of influence of cross	ing)							
Water Depth (ft): Bankfull Width (ft)	: Wetted V	vidth (ft):		Water \	/elocity (f	t/sec):			
Dominant_Substrate:				Measu	ured with:				
Road Information									
Road_Type:	Other:				Seaso	nal Road? 🗌			
Road Surface:	Road Condition:								
Road Width at Culvert(ft):	ocation of Low Point:			Runoff I	Path:				
Embankment: Upstream Fill Depth (ft):		Slo	ope:			Approach			
Downstream Fill Depth (ft):		Slo	ope:			Erosion (tons/year)			
Left Approach: Length (ft): Slope:	Ditc	h Vegetat	ion:	LS:	:				
Right Approach: Length (ft): Slope:	Ditc	h Vegetat	ion:	LS					
Erosion Information									

Use a new row for each distinct gully/erosion location.	Note prominent streambank erosion within 50 feet of crossing
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Location of Erosion	of Erosion Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion		
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)	
				🗆 Yes			
				🗆 Yes			
				□ Yes			
				□ Yes			
				🗆 Yes			
				Calcul	ate Total Erosion at Crossing (tons/yr):		
Check here If there is erosi	on occuring	and correct	ive actions,	such as road drainage r	neasures can be installed to address the problem.		
Extent of Erosion:							
Erosion Notes: N	lo observa	ble erosi	on				
Photos -enter photo			correspo				
	Pho nlet	to Type	scm	Photo Numbe	er		
<u></u>	liet		SCIII	001			
Summary Information							
Would you consider the		ty sito?					
Why?	nis a priori	ly sile!					
vviiy:							
Would you recommer	nd a future	visit to t	his site?	(if yes then c	heck the box )		
Why?							
vvny.							
Were any non-native	-		t this site?	$P \sqcup$ (if yes then	check the box )		
If yes, what species were observed?							
Fish Passage Determ		1					
Passability =	alculato						

General Information						
Watershed_Name: Elk River Chain of Lakes		Site_ID: 06 SCP				
Stream Name: Shanty Creek	Road Name: Pine	Brook				
Observer Name(s): Witt, Barber, Sittel		Date: 7/15/2011				
GPS Waypoint:	GPS Lat:	44.9351 GPS Long: -85.1953				
County: Antrim Township:	Custer Twp Tier	29N Range: 7W Section: 5				
Adjacent Landowner: 🗌 Private 🗌 Local Gov't	🗌 State 🛛 🗌 Federal 🗌 Othe	r				
Additional Comments: Walking Bridge - fish passage c	ncern					
Crossing Information						
Crossing Type: Dam	No. of Culverts:					
Structure Shape: Square/Rectangle		Multiple Culverts/Spans				
Inlet Type:	Number the cul	verts/spans left to right, facing downstream. Include #s in site sketch				
Outlet Type: Freefall into Pool	Culvert/	h(ft) Length(ft) Height(ft) Material				
Structure Material: Metal	Span # Widt					
Substrate in Structure: Sand						
General Conditions: Poor						
Percentage Plugged: ✓ Inlet	✓ Outlet	✓ In Pipe				
_	✓ Outlet	✓ In Pipe				
Rusted Through?	Structure Interior:					
		Structure Height (ft):				
Structure Water Depth (ft): Inlet	Outlet	Perch Height (ft):				
Embedded Depth of Structure(ft): Inlet	Outlet					
Structure Water Velocity(ft/sec): Inlet	Outlet					
Structure Water Velocity Measured:	ft Below Surface (0 = at surface)	Measured With:				
Stream Information						
Stream Flow:						
Scour Pool (if present) Length (ft):	Width (ft): Depth	(ft):				
Upstream Pond (if present) Length(ft):	Width (ft): Depth	(ft):				
Riffle Information (measured in a riffle outside of zor	e of influence of crossing)					
Water Depth (ft): Bankfull Width (ft):	Wetted Width (ft):	Water Velocity (ft/sec):				
Dominant_Substrate:		Measured with:				
Road Information						
Road_Type:	Other:	Seasonal Road?				
Road Surface:	Road Condition:					
Road Width at Culvert(ft): Loca	tion of Low Point:	Runoff Path:				
Embankment: Upstream Fill Depth (ft):	Slope:	Approach				
Downstream Fill Depth (ft):	Slope:	Erosion (tons/year)				
Left Approach: Length (ft): Slope:	Ditch Vegetation:	LS:				
Right Approach: Length (ft): Slope:	Ditch Vegetation:	LS:				
Erosion Information						

Location of Erosion	ation of Erosion Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion		
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)	
				□ Yes			
				□ Yes			
				□ Yes			
				□ Yes			
				□ Yes			
				Calcul	Total Erosion at Crossing (tons/yr):	<u> </u>	
Check here If there is erosic	on occuring a	and correct	ive actions,	such as road drainage r	neasures can be installed to address the problem.		
Extent of Erosion:							
Erosion Notes:							
Photos -enter photo	number	in blank	correspo	onding to location			
		to Type		Photo Numbe	er		
C	outlet		scpt	002			
Summary Information	on						
Would you consider the	nis a priori	ty site?					
Why?							
Would you recommer	nd a future	e visit to t	his site?	$\Box$ (if yes then c	heck the box )		
Why?							
Were any non-native	species ob	served a	t this site?	P□□ (if yes then	check the box )		
If yes, what species were observed?							
Fish Passage Determination							
	alculate						

General Information					
Watershed_Name: Elk River Chain of Lakes				Site	e_ID: 07 SC
Stream Name: Shanty Creek	Road	Name:			
Observer Name(s):			Da	ate:	
GPS Waypoint:	G	GPS Lat:	44.9348 GI	PS Long:	-85.1928
County: Antrim Township: C	uster Twp	Tier:	Range	: Se	ction:
Adjacent Landowner: 🗌 Private 🗌 Local Gov't 🗌	State 🗌 Feder	al 🗌 Othe	r		
Additional Comments: Creek-side drive bridge					
Crossing Information					
Crossing Type:	No. of Culverts:				
Structure Shape:			Multiple Culve	· ·	
Inlet Type:		Number the culv	verts/spans left to Include #s in sit		downstream.
Outlet Type:		Culvert/	n(ft) Length(ft)		Material
Structure Material:		Span # Width		Theight (Tt)	Wateria
Substrate in Structure:					
General Conditions:					
Percentage Plugged: 🗹 Inlet	✓ Outlet		✓ Ir	n Pipe	
Percentage Crushed:	✓ Outlet			n Pipe	
	ructure Interior:			pe	
	cture Width (ft):	c	 Structure Heig	ht (ft)·	
Structure Water Depth (ft): Inlet	Outlet		Perch Heigh		
Embedded Depth of Structure(ft): Inlet	Outlet		reich neigi		
Structure Water Velocity(ft/sec): Inlet	Outlet				
Structure Water Velocity Measured:			Measured	\\/ith·	
Stream Information	ft Below Surface (0	= at surface)	weasureu	vvitii.	
Stream Flow:	$\lambda$ (indee here $f$ the $f$ the $f$ the here $f$ there $f$ the here $f$ the here $f$ the here $f$ the here	Danth	(£+).		
Scour Pool (if present) Length (ft):	Width (ft):	Depth			
Upstream Pond (if present) Length(ft):	Width (ft):	Depth	(ft):		
Riffle Information (measured in a riffle outside of zone of					
Water Depth (ft): Bankfull Width (ft):	Wetted W	idth (ft):		/elocity (ft/	sec):
Dominant_Substrate:			Measu	ured with:	
Road Information				-	
Road_Type:	Other:			Season	al Road? 🗌
	Road Condition:				
	on of Low Point:		Runoff F	Path:	
Embankment: Upstream Fill Depth (ft):		Slope:			Approach Erosion
Downstream Fill Depth (ft):		Slope:			(tons/year)
Left Approach: Length (ft): Slope:	Ditch	Vegetation:	LS:		
Right Approach: Length (ft): Slope:	Ditch	Vegetation:	LS:		
Erosion Information				1-	

Location of Erosion	Erosior	n Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						

Summary Information
Would you consider this a priority site?
Why?
Would you recommend a future visit to this site? $\ \square$ (if yes then check the box )
Why?
Were any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, what species were observed?
Fish Passage Determination
Passability = Calculate

General Information				Ci+	
Watershed_Name: Elk River Chain of Lakes	D			Site	e_ID: 08 SC
Stream Name: Shanty Creek	Road	Name:			
Observer Name(s):				ate:	
GPS Waypoint:		GPS Lat:	44.93472 GI		-85.185
County: Antrim Township: C	-		r: T29N Range	: R7W Se	ction: 4
Adjacent Landowner:  Private Local Gov't	🗌 State 🛛 Fede	ral 🗌 Oth	er		
Additional Comments: Gravel roadabove Legend Golf C	ourse				
Crossing Information					
Crossing Type: culvert(s)	No. of Culverts:	1		_	
Structure Shape: Round		Numberthe	Multiple Culve lverts/spans left to	· ·	downstroom
Inlet Type:			Include #s in sit		uownstream.
Outlet Type:		Culvert/ Span # Widt	th(ft) Length(ft)	Height(ft)	Material
Structure Material: Metal		Spall #		- 0 -( -,	
Substrate in Structure:					
General Conditions:					
Percentage Plugged: 🗹 Inlet	✓ Outlet		✓ Ir	n Pipe	
Percentage Crushed:  V Inlet	✓ Outlet			n Pipe	
		corrugated			
	icture Width (ft):		Structure Heig	ht (ft):	
Structure Water Depth (ft): Inlet	Outlet		Perch Heigh		
Embedded Depth of Structure(ft): Inlet	Outlet		i ci ci i i i cigi		
Structure Water Velocity(ft/sec): Inlet	Outlet				
Structure Water Velocity Measured:			Measured	With	
Stream Information	ft Below Surface (	J = at surface)	Iviedsureu	vvitii.	
Stream Flow:					
Scour Pool (if present) Length (ft):	Width (ft):	Dept	h (ft):		
Upstream Pond (if present) Length(ft):	Width (ft):	Depth	• •		
			(11).		
Riffle Information (measured in a riffle outside of zone					
Water Depth (ft): Bankfull Width (ft):	Wetted W	/idth (ft):		/elocity (ft/	sec):
Dominant_Substrate:			Measu	ured with:	
Road Information	Oth a m			<b>C</b>	
Road_Type:	Other:			Season	al Road? 🗌
Road Surface:	Road Condition:				
	ion of Low Point:		Runoff F	Path:	
Embankment: Upstream Fill Depth (ft):		Slope:			Approach Erosion
Downstream Fill Depth (ft):		Slope:			(tons/year)
Left Approach: Length (ft): Slope:		NVegetation:	LS:		
Right Approach: Length (ft): Slope:	Ditch	NVegetation:	LS:		
Erosion Information					

Location of Erosion	Erosior	n Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				🗆 Yes		
				Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	ion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:						
Erosion Notes:						

Summary Information
Would you consider this a priority site?
Why?
Would you recommend a future visit to this site? $\ \square$ (if yes then check the box )
Why?
Were any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )
If yes, what species were observed?
Fish Passage Determination
Passability = Calculate

General Information									
Watershed_Name:	Elk River Chain o	f Lakes						Sit	e_ID: 09 SCC
Stream Name:	Shanty Creek			Road	d Name:	Creekside	Drive		
Observer Name(s):	Branson, Norris						Da	ate:	6/24/2011
GPS Waypoint:					GPS Lat:	44	.9346 G	PS Long:	-85.1864
County:	Antrim	Townshi	p: Custer Twp			Tier: 29N	Range	e: 7W Se	ection: 5
Adjacent Landowner:	Private	Local Gov't	State	Fede	eral 🗌	Other			
Additional Comments:	Between Pinebro	ook and Pon	d						
<b>Crossing Information</b>									
Crossing Type:	Bridge		No. of Cul	verts:					
Structure Shape:	Open Bottom So	quare/Recta	ngle					erts/Spans	
Inlet Type:	Other				Number t		pans left to <u>ide #s in si</u>		downstream.
Outlet Type:	Other				Culvert/	Width(ft) L	ength(ft)	Height(ft)	Material
Structure Material:	Concrete				Span #				
Substrate in Structure:	Sand								
General Conditions:	Poor								
Percentage Plugged:	🗹 Inlet			utlet			✓ Ir	n Pipe	
Percentage Crushed:	🗹 Inlet			utlet			✓ Ir	n Pipe	
Rusted Through?			Structure Int	erior:	smooth				
Structure Length (ft):			Structure Width	า (ft):		Struct	ure Heig	ht (ft):	
Structure Wat	er Depth (ft):	Inlet	C	utlet		Ре	rch Heigh	nt (ft):	
Embedded Depth of	Structure(ft):	Inlet	C	utlet			-		
Structure Water Ve		Inlet	C	utlet					
	er Velocity Meas	ured:	ft Below S	urface (	(0 = at surf	ace) M	easured	With:	
Stream Information				(	(	,			
Strea	m Flow: Bankful								
Scour Pool (if pi	resent) Le	ength (ft):	Width	(ft):	[	Depth (ft):			
Upstream Pond (if pr	resent) Le	ength(ft):	Width	(ft):	D	epth (ft):			
Riffle Information	(measured in a riffl	e outside of z	one of influence of	of cross	sing)				
Water Depth (ft):	Bankfu	ıll Width (ft)	: We	etted V	Vidth (ft):		Water \	/elocity (ft,	/sec):
Dominant_Substrate:							Measu	ured with:	
Road Information									
Road_Ty	/pe: Private		O	ther:				Seasor	nal Road?
Road Surfa	ce: Gravel	1	Road Condi	tion:	Poor				
Road Width at Culvert(	ft):	Lo	ocation of Low P	oint:			Runoff I	Path:	
Embankment: Upst					Slo	ope:			Approach
Dow	vnstream Fill Dep	th (ft):				ope:			Erosion (tons/year)
Left Approach: Leng	gth (ft):	Slope:		Ditc	h Vegetat	tion: Partia	I LS:	:	
Right Approach: Leng	gth (ft):	Slope:		Ditc	h Vegetat	tion: Partia	I LS:		
Erosion Information									

Location of Erosion	Erosior	ı Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
				🗆 Yes		
				□ Yes		
				□ Yes		
				□ Yes		
				□ Yes		
			Ι	Calcul	Total Erosion at Crossing (tons/yr):	
Check here If there is eros	sion occuring	and correct	ive actions,	such as road drainage i	neasures can be installed to address the problem.	
Extent of Erosion:	Severe					
Erosion Notes:	Extensive e	rosion of	roadside	ditches into creek.		

Summ	ary Information					
Would	you consider this a priority site? Erosion					
Why?	? Extensive erosion of road and roadside ditches into creek.					
Would	you recommend a future visit to this site? $\checkmark$ (if yes then check the box )					
Why?	ny? Corrective measures for control of erosion.					
Were a	any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )					
If yes, v	what species were observed?					
Fish Pa	ssage Determination					
Passab	ility = Calculate					

General Information										
Watershed_Name:	Elk River Chain c	of Lakes							Si	te_ID: 10 SCC
Stream Name:	Shanty Creek				Road	d Name:	Creeksi	de Drive		
Observer Name(s):	Branson,Norris							Da	ate:	6/24/2011
GPS Waypoint:						GPS Lat:		44.9348 G	PS Long:	-85.1819
County:	Antrim	Towr	nship: Cu	ister Twp			Tier: 2	9N Range	: 7W S	ection: 5
Adjacent Landowner:	🗌 Private 🗌	Local Go	v't 🗌	State 🗌	Fede	eral 🗌	Other			
Additional Comments:	Between PineBr	ook and p	pond							
<b>Crossing Information</b>										
Crossing Type:	Bridge			No. of Culve	erts:					
Structure Shape:	Open Bottom S	quare/Re	ctangle					Itiple Culve		
Inlet Type:	Other					Number t		:s/spans left to <u>nclude #s in si</u>	-	g downstream.
Outlet Type:	At Stream Grad	e				Culvert/		) Length(ft)		Material
Structure Material:	Concrete					Span #	wiath(it		incigitt(it)	Wateria
Substrate in Structure:	Sand									
General Conditions:	Poor									
Percentage Plugged:	🗹 Inlet			✓ Ou	tlet			✓ Ir	n Pipe	
Percentage Crushed:	🗹 Inlet			☑ Ou	tlet				n Pipe	
Rusted Through?			St	ructure Inter					•	
Structure Length (ft):				ture Width (			Stri	ucture Heig	ht (ft):	
Structure Wat		Inlet		_	tlet			Perch Heigh		
Embedded Depth of	• • • •	Inlet			tlet					
Structure Water Ve		Inlet			tlet					
	er Velocity Meas			ft Below Sur		0 = at surf	ace)	Measured	With:	
Stream Information					idee (	o utsuri	uccy			
Strea	ım Flow: Bankful									
Scour Pool (if pi	resent) Lo	ength (ft)	:	Width (f	t):	C	Depth (ft	:):		
Upstream Pond (if pr	-	ength(ft):		Width (f	t):		epth (ft)			
Riffle Information	(measured in a riff	e outside	of zone o	f influence of	cross	ing)				
Water Depth (ft):	Bankfu	ull Width	(ft):	Wet	ted V	Vidth (ft):		Water \	/elocity (fi	:/sec):
Dominant_Substrate:									ured with:	· ·
Road Information										
Road_Ty	pe: Private			Oth	ner:				Seaso	nal Road? 🗌
Road Surfa	ce: Gravel		F	Road Conditi	on:	Poor				
Road Width at Culvert(	ft):		Locatio	on of Low Po	int:			Runoff I	Path:	
Embankment: Upst	tream Fill Dep	th (ft):				Slo	ope:			Approach
Dow	vnstream Fill Dep	th (ft):				Slo	ope:			Erosion (tons/year)
Left Approach: Leng	gth (ft):	Slope:			Ditc	h Vegetat	tion: Pa	rtial LS:		
Right Approach: Leng	gth (ft):	Slope:			Ditc	h Vegetat	tion: Pai	rtial LS:		
Erosion Information										[

Location of Erosion	Erosion	Dimensi	ons (ft)	Eroded Material	Material Eroded	Total Erosion
facing downstream	Length	Width	Depth	Reaching Steam?	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)
Left Ditch				✓ Yes	Sand	
Right Ditch				✓ Yes	Sand	
				🗆 Yes		
				🗆 Yes		
				□ Yes		
			1	Calcul	ate Total Erosion at Crossing (tons/yr):	

Check here If there is erosion occuring and corrective actions, such as road drainage measures can be installed to address the problem.

## Extent of Erosion: Severe

Erosion Notes: Roadway rutted and excavated by water passage, sand and gravel eroding down bank into stream.

Photo Type	Photo Number
Outlet	sccsd2
Road Approach - Left	sccsd5

Summ	ary Information							
Would	you consider this a priority site? Erosion							
Why?	P Severe erosion putting sand and gravel into creek.							
Would	you recommend a future visit to this site? $oldsymbol{arsigma}$ (if yes then check the box )							
Why?	Why? Fix erosion.							
Were a	any non-native species observed at this site? $\ \ \Box$ (if yes then check the box )							
If yes, v	what species were observed?							
Fish Pa	ssage Determination							
Passab	ility = Calculate							

General Information							
Watershed_Name: Elk River Chain of Lakes	Elk River Chain of LakesSite_ID:11 CC						
Stream Name: Cold Creek	Road	d Name: Rai	ilroad Crossing				
Observer Name(s): Sittel, Barber, Witt			D	ate:			
GPS Waypoint:		GPS Lat:	44.926 G	PS Long:	-85.203		
County: Antrim Township: County:	uster Twp	Tie	er: 29N Range	e: 7W Se	ction: 7		
Adjacent Landowner: 🗌 Private 🗌 Local Gov't 🗌	State 🗌 Fede	eral 🗌 Otl	her				
Additional Comments: Bridge							
Crossing Information							
Crossing Type: Bridge	No. of Culverts:						
Structure Shape: Open Bottom Square/Rectangle		Multiple Culverts/Spans					
Inlet Type: Other		Number the culverts/spans left to right, facing downstream Include #s in site sketch					
Outlet Type: At Stream Grade		Culvert/	dth(ft) Length(ft)		Material		
Structure Material: Wood		Span # Wit		neight(it)	Wateria		
Substrate in Structure: Sand							
General Conditions: Fair							
Percentage Plugged:	✓ Outlet						
	✓ Outlet			n Pipe			
Percentage Crushed:  Inlet				n Pipe			
5	ructure Interior:		]				
	cture Width (ft):	Structure Height (ft):					
Structure Water Depth (ft): Inlet	Outlet	Perch Height (ft):					
Embedded Depth of Structure(ft): Inlet	Outlet						
Structure Water Velocity(ft/sec): Inlet	Outlet						
Structure Water Velocity Measured:	ft Below Surface (	0 = at surface	) Measured	With:			
Stream Information							
Stream Flow: Bankfull							
Scour Pool (if present) Length (ft):	Width (ft):	Dep	th (ft):				
Upstream Pond (if present) Length(ft):	Width (ft):	Dept	h (ft):				
Riffle Information (measured in a riffle outside of zone of	of influence of cross	ing)					
Water Depth (ft): Bankfull Width (ft):	Wetted W	Vidth (ft):	Water	Velocity (ft/	/sec):		
Dominant_Substrate:			Meas	ured with:			
Road Information							
Road_Type: Other	Other:	railroad righ	t-o	Season	al Road? 🗌		
Road Surface:	Road Condition:						
Road Width at Culvert(ft): Location	on of Low Point:		Runoff	Path:			
Embankment: Upstream Fill Depth (ft):		Slope	:		Approach		
Downstream Fill Depth (ft): Slope: Erosion (tons/year)							
Left Approach: Length (ft): Slope:	Ditcl	h Vegetation	LS	:			
Right Approach: Length (ft): Slope:	Ditcl	h Vegetation	I: LS	:			
Erosion Information				Į.			

Location of Erosion	ion Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion				
facing downstream	Length	Width	Depth	-	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)			
				🗆 Yes					
				□ Yes					
				🗆 Yes					
				□ Yes					
				□ Yes					
				Calcu	Total Erosion at Crossing (tons/yr):				
Check here If there is erosid	on occuring a	and correct	ive actions,	such as road drainage	neasures can be installed to address the problem.				
Extent of Erosion:									
Erosion Notes:									
Photos -enter photo			correspo						
1		to Type		Photo Numbe	er				
	nlet Iownstream	Condition	ccrr ns ccrr						
	ownstream	replication		T					
Summary Information	าท								
Would you consider th		tv site?							
, Why?	•	,							
Would you recommend a future visit to this site? $\Box$ (if yes then check the box )									
Why?									
Were any non-native species observed at this site? $\Box$ (if yes then check the box )									
Were any non-native species observed at this site? $\Box$ (if yes then check the box ) If yes, what species were observed?									
Fish Passage Determ									
	alculate								

General Information							
Watershed_Name: Elk River Chain of Lakes	Elk River Chain of Lakes       Site_ID:       12 CCP						
Stream Name: Cold Creek	Road	Name:	No name	<u>;</u>			
Observer Name(s): Conway, Barber, Sittel				Da	ate:	7/1/2011	
GPS Waypoint:		GPS Lat:	44	.92194 GI	PS Long:	-85.18861	
County: Antrim Township:	Custer Twp		Tier: 29	N Range	: 7W Se	ction: 7	
Adjacent Landowner:  Private  Local Gov't	□ State □ Fede	eral 🗌	Other				
Additional Comments: Private Road, old boiler used a	s culvert						
Crossing Information							
Crossing Type: culvert(s)	No. of Culverts:	1					
Structure Shape: Round		Multiple Culverts/Spans					
Inlet Type: Projecting		Number tl		/spans left to <u>clude #s in si</u> j		downstream.	
Outlet Type:		Culvert/		Length(ft)		Material	
Structure Material: Metal		Span #	width(it)	Length(It)	Teight(It)	Wateria	
Substrate in Structure:							
General Conditions: Fair							
Percentage Plugged: 🗹 Inlet	✓ Outlet				n Pipe		
-	✓ Outlet				n Pipe		
		ana a ath			ГРіре		
Rusted Through?		smooth					
	ructure Width (ft):			cture Heig			
Structure Water Depth (ft): Inlet	Outlet		P	erch Heigh	nt (ft):		
Embedded Depth of Structure(ft): Inlet	Outlet						
Structure Water Velocity(ft/sec): Inlet	Outlet						
Structure Water Velocity Measured:	ft Below Surface (	0 = at surfa	ace) [	Measured	With:		
Stream Information							
Stream Flow: Bankfull							
Scour Pool (if present) Length (ft):	Width (ft):	D	epth (ft)	:			
Upstream Pond (if present) Length(ft):	Width (ft):	De	epth (ft):				
Riffle Information (measured in a riffle outside of zon	e of influence of cross	ing)					
Water Depth (ft): Bankfull Width (ft):	Wetted W	Vidth (ft):		Water \	/elocity (ft/	sec):	
Dominant_Substrate:				Measu	ured with:		
Road Information							
Road_Type: Private	Other:				Season	al Road? 🗌	
Road Surface: Gravel	Road Condition:	Fair					
Road Width at Culvert(ft): Loca	ation of Low Point:			Runoff I	Path:		
Embankment: Upstream Fill Depth (ft):	0	Slo	ope:			Approach	
Downstream Fill Depth (ft):	0	Slo	ope:			Erosion (tons/year)	
Left Approach: Length (ft): Slope:	Ditcl	h Vegetat	ion:	LS:			
Right Approach: Length (ft): Slope:	Ditcl	h Vegetat	ion:	LS:			
Erosion Information					ŀ		

Location of Erosion	on Erosion Dimensions (ft)		Eroded Material	Material Eroded	Total Erosion				
facing downstream	Length	Width	Depth	-	Sand,Silt,Clay,Gravel,Loam,Sandy Loam,Gravelly Loam	(tons/year)			
				🗆 Yes					
				□ Yes					
				🗆 Yes					
				□ Yes					
				🗆 Yes					
				Calcul	Total Erosion at Crossing (tons/yr):				
Check here If there is erosid	on occuring a	and correct	ive actions,	such as road drainage	neasures can be installed to address the problem.				
Extent of Erosion:									
Erosion Notes:									
Photos -enter photo			correspo						
		to Type		Photo Numbe	er				
	nlet Ipstream Co	nditions	ccpr ccpr						
			cepi	5					
Summary Information	าท								
Would you consider th		ty site?							
Why?	•	•							
Would you recommer	nd a future	visit to t	his site?	□ (if yes then c	heck the box )				
Why?									
Were any non-native species observed at this site? $\Box$ (if yes then check the box )									
If yes, what species were observed?									
Fish Passage Determination									
	alculate								
<u> </u>									