

appendix O - stream inventory data sheets

Appendix O includes the data collection sheets used during the Lake County Stormwater Management Commission 2001 stream inventory.

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL01	DATE:	7/18/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Glen Flora Trib	1				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culverts at railroad		lagoon/ marsh area				
UPSTREAM GPS#	261	DOWNSTREAM GPS#	259			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	85	09:00:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:		DEGREE OF ARMORING:	0	Types/Locations of High Cases:
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	5.75	BANK HT RANGE:	from: 3	to: 8.5		
MEAN BANK SLOPE:	.4/1	BANK SLOPE RANGE:	from: .3/1	to: .5/1		
MEAN WATER DEPTH (ft):	2.125	WATER DEPTH RANGE:	from: 1.25	to: 3		
TOP MEAN CHAN. WIDTH (ft):	53.5	TOP CHANNEL WIDTH RANGE:	from 30	to: 77		
BOTTOM MEAN CHAN. WIDTH (ft):	43.5	BOT. CHAN. WIDTH RANGE:	from 20	to: 67		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 0	Wetland: 40		
	Trees: 10	Shrub: 30	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	5	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	L:	MATERIAL:
BL01	Culvert						Concrete
LOCATION/GPS#	NOTES:						
260	under railroad tracks- right bank drain wetlands						

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	0	L:	0	MATERIAL:
BL01	Culvert								Concrete
LOCATION/GPS#	NOTES:								
260	under railroad tracks- right bank draining wetlands								

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	5	H:	L:	MATERIAL:
BL01	Culvert						Concrete

LOCATION/GPS#

261

NOTES:

stream continues from under railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL01

TYPE:

Culvert

SIZE (ft): W:

5 H:

L:

MATERIAL:

Concrete

LOCATION/GPS#

261

NOTES:

stream continues from under railroad tracks

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %

Agricultural:

0

Vacant/Open Space:

30

Recreational:

0

Commercial Industrial:

70

Residential:

0

Other

0

Other Description:

VEGETATION %

Forest:

30

Lawn/Grass:

10

Wetlands:

30

Crops:

0

Shrub/Weeds:

30

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER:

70

COMMENTS (Riparian Corridor/Floodplain):

left bank- 100ft right bank- 30ft

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %

Gravel:

0

Sand:

0

Cobble:

0

Silt

30

Concrete:

0

Organic Matter:

70

Boulder:

0

Claypan:

0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Moderate

FILAMENTOUS ALGAE:

High

GREASE/OIL IN WATER COLUMN:



GREASE/OIL IN SEDIMENT:



TURBIDITY:

Low

WATER COLOR:

Clear

COMMENTS:

water is very clear- enough to see the excessive vegetation, but vegetation is too thick to see the

E. INSTREAM COVER FOR FISH

Undercut Banks:



Pools Over 28" Deep:



Macrophytes:



Logs:



COMMENTS (Instream Cover for Fish):

Overhanging Veg:



Rootwads:



Boulders:



Backwaters:

**F. AQUATIC AND TERRESTRIAL ORGANISMS**

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☒ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐
 Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐
 Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☒ Geese: ☒ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐
 Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL01	Russell Brunner		425	lagoon/ marsh
		GPS #		
		259		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL01	Russell Brunner		426	culverts under railroad
		GPS #		
		260		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL01	Russell Brunner		427	representative reach
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL01	Russell Brunner		428	culverts
		GPS #		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL02	DATE:	7/18/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Glen Flora Trib	2				
REACH BOUNDARIES UPSTREAM:	REACH BOUNDARIES DOWNSTREAM:					
culverts at Sheridan	culverts at railroad					
UPSTREAM GPS#	279	DOWNSTREAM GPS#	262			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
4000	85	12:30:00	RB/KK	Normal	24 hrs	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
		photos			photos	
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	1.5	BANK HT RANGE:	from: 1	to: 2		
MEAN BANK SLOPE:	.475/1	BANK SLOPE RANGE:	from: .2/1	to: .75/1		
MEAN WATER DEPTH (ft):	.375	WATER DEPTH RANGE:	from: .25	to: .5		
TOP MEAN CHAN. WIDTH (ft):	10.5	TOP CHANNEL WIDTH RANGE:	from: 5	to: 16		
BOTTOM MEAN CHAN. WIDTH (ft):	6.25	BOT. CHAN. WIDTH RANGE:	from: 3.5	to: 10		
MEAN VELOCITY (ft/s):	20/35	VELOCITY RANGE:	from: 20/35	to: 20/35		
PREDOMINANT BANK VEG. %	None: 0	Grass: 5	Lawn: 5	Wetland: 25		
	Trees: 35	Shrub: 30	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	60	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	L:	MATERIAL:
BL02	Culvert				Concrete

LOCATION/GPS#	NOTES:
262	west side railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	L:	MATERIAL:
BL02	Culvert				Concrete

LOCATION/GPS#	NOTES:
262	west side railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	L:	MATERIAL:
BL02	Culvert				Concrete

LOCATION/GPS# 262	NOTES: west of railroad tracks		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL02	TYPE: Culvert	SIZE (ft): W: 4 H: L:	MATERIAL: Concrete
LOCATION/GPS# 263	NOTES: west of railroad tracks		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL02	TYPE: Bridge	SIZE (ft): W: 5 H: 6.5 L: 31	MATERIAL: Wood
LOCATION/GPS# 273	NOTES: pedestrian bridge- wood/steel/ and conc.		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL02	TYPE: Culvert	SIZE (ft): W: 6 H: 7 L: 0	MATERIAL: Concrete
LOCATION/GPS# 279	NOTES: east side Sheridan Rd.		

POINT DISCHARGE:			
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 4 Bottom Deep:	
LOCATION/GPS # 264		NOTES: left bank	

POINT DISCHARGE:			
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom Deep:	
LOCATION/GPS # 265		NOTES: left bank	

POINT DISCHARGE:			
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 5 Bottom Deep:	
LOCATION/GPS # 268		NOTES: right bank	

POINT DISCHARGE:			
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom Deep:	
LOCATION/GPS # 269		NOTES: left bank- creating backwaters?	

POINT DISCHARGE:			
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 6 Bottom Deep:	
LOCATION/GPS # 271		NOTES: right bank	

POINT DISCHARGE:			
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LAKE CO ID: BL02	TYPE: Concrete Pipe	SIZE (ft): Top: 1 Bottom: Deep:
LOCATION/GPS # 274		
NOTES: left bank- erosion, forming channel		
POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom: Deep:
LOCATION/GPS # 275		
NOTES: left bank		
POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Plastic Pipe	SIZE (ft): Top: 0.33 Bottom: Deep:
LOCATION/GPS # 276		
NOTES: right bank- residential		

POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Steel Pipe	SIZE (ft): Top: 1 Bottom: Deep:
LOCATION/GPS # 277		
NOTES: right bank- residential armoring, stone and concrete- channelization?		
POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Steel Pipe	SIZE (ft): Top: 1 Bottom: Deep:
LOCATION/GPS # 279		
NOTES: above culvert		
POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Concrete Pipe	SIZE (ft): Top: 1.5 Bottom: Deep:
LOCATION/GPS # 279		
NOTES: in culvert		
POINT DISCHARGE:		
LAKE CO ID: BL02	TYPE: Concrete Pipe	SIZE (ft): Top: 1.5 Bottom: Deep:
LOCATION/GPS # 279		
NOTES: in culvert		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	50
	Recreational:	5	Commercial Industrial:	5
	Residential:	40	Other:	0
	Other Description:			
VEGETATION %	Forest:	30	Lawn/Grass:	10
	Crops:	0	Shrub/Weeds:	30
			Wetlands:	30
			Other:	0

Other Description:

WIDTH OF VEGETATED BUFFER:

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION % Gravel: Sand: Cobble: Silt:
Concrete: Organic Matter: Boulder: Claypan:

SUBSTRATE STABILITY OF ENTIRE CHANNEL:
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:
FILAMENTOUS ALGAE:

GREASE/OIL IN WATER COLUMN: ☒ GREASE/OIL IN SEDIMENT: ☒

TURBIDITY:

WATER COLOR: COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☒ Macrophytes: ☒ Logs: ☒ COMMENTS (Instream Cover for Fish):
Overhanging Veg: ☒ Rootwads: ☒ Boulders: ☒ Backwaters: ☒

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

HABITATS SAMPLED FOR INVERTEBRATES:

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☒ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐
Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☒ Bluegill: ☐ Largemouth Bass: ☐
Johnny Darters: ☐ Fathead Minnows: ☒ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐
Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		429	culverts at railroad tracks
GPS #				
262				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		430	culvert
		GPS #		
		262		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		431	other side of culvert
		GPS #		
		263		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		432	oil and grease in water
		GPS #		
		263		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		433	open channel
		GPS #		
		264		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		434	open channel with debris
		GPS #		
		265		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		435	debris- left bank
		GPS #		
		266		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		436	debris- log jam
		GPS #		
		267		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		437	open channel
		GPS #		
		268		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		438	open channel
		GPS #		
		269		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		439	debris- log jam
		GPS #		
		270		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		440	open channel
		GPS #		
		271		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		441	erosion
		GPS #		
		272		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		442	bridge
		GPS #		
		273		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		443	drain pipe
		GPS #		
		274		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		444	open channel
		GPS #		
		275		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		445	drain pipe
		GPS #		
		276		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		446	concrete/ drain pipes
		GPS #		
		277		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		447	armoring
		GPS #		
		278		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		448	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL02	Russell Brunner		449	culvert/ 2 drain pipes
		GPS #		
		279		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL03	DATE:	7/31/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Glen Flora Trib	3				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at end of golf course		culverts at Sheridan Rd.				
UPSTREAM GPS#	394	DOWNSTREAM GPS#	376			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3000	95	10:30:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	0	Types/Locations of High Cases:	DEGREE OF ARMORING:	2	Types/Locations of High Cases: see photos	
SEDIMENT ACCUMULATIONS:	0					
MEAN BANK HT (ft):	1.16	BANK HT RANGE:	from: .5	to: 2		
MEAN BANK SLOPE:	0/1	BANK SLOPE RANGE:	from: 0/1	to: 0/1		
MEAN WATER DEPTH (ft):	.48	WATER DEPTH RANGE:	from: .2	to: .75		
TOP MEAN CHAN. WIDTH (ft):	14.5	TOP CHANNEL WIDTH RANGE:	from: 9.5	to: 21		
BOTTOM MEAN CHAN. WIDTH (ft):	12	BOT. CHAN. WIDTH RANGE:	from: 8.5	to: 15		
MEAN VELOCITY (ft/s):	20/150	VELOCITY RANGE:	from: 0	to: 20/150		
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 90	Wetland: 0		
	Trees: 10	Shrub: 0	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	0	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:	5	
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	7 L:	MATERIAL:
BL03	Culvert				Concrete
LOCATION/GPS#	NOTES:				
376	west side Sheridan Rd.- into golf course				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	4 L:	MATERIAL:
BL03	Dam				Concrete
LOCATION/GPS#	NOTES:				
376	golfcourse- landscape maipulation				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	3 L:	21	MATERIAL:
BL03	Bridge					conc./steel/wood

LOCATION/GPS# 377	NOTES: recreational		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Dam	SIZE (ft): W: 8 H: 3 L:	MATERIAL: Concrete
LOCATION/GPS# 379	NOTES: landscape manipulation		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Dam	SIZE (ft): W: H: 7 L: 13	MATERIAL: Concrete
LOCATION/GPS# 380	NOTES: landscape manip.- creating pond/armoring		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Bridge	SIZE (ft): W: 8 H: 2 L: 60	MATERIAL: conc./wood
LOCATION/GPS# 382	NOTES: island/ armoring		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Bridge	SIZE (ft): W: 7.5 H: 3.5 L: 41	MATERIAL: conc./wood
LOCATION/GPS# 383	NOTES: recreational		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Culvert	SIZE (ft): W: 6 H: 3.5 L:	MATERIAL: Steel
LOCATION/GPS# 384	NOTES: golf course		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Bridge	SIZE (ft): W: 8 H: 3.5 L: 30	MATERIAL: conc./wood
LOCATION/GPS# 385	NOTES: golf course		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Dam	SIZE (ft): W: H: 3 L: 18	MATERIAL: Concrete
LOCATION/GPS# 386	NOTES: golf course lanscape manipulation		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Bridge	SIZE (ft): W: 7.5 H: 3 L: 25	MATERIAL: conc./wood
LOCATION/GPS# 387	NOTES: golf course lanscape manipulation		
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL03	TYPE: Bridge	SIZE (ft): W: 6 H: 5 L: 30	MATERIAL: conc./wood
LOCATION/GPS# 389	NOTES: golf course lanscape manipulation		

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: L: MATERIAL:
BL03 Culvert Concrete

LOCATION/GPS#
390

NOTES:
armoring

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: L: MATERIAL:
BL03 Culvert Concrete

LOCATION/GPS#
390

NOTES:
armoring

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 10 H: 3 L: MATERIAL:
BL03 Dam Concrete

LOCATION/GPS#
390

NOTES:
golf course lanscape manipulation

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 8 H: 4 L: 36 MATERIAL:
BL03 Bridge Concrete

LOCATION/GPS#
391

NOTES:
golf course

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 5 H: 4 L: 30 MATERIAL:
BL03 Bridge conc/steel/wood

LOCATION/GPS#
392

NOTES:
golf course

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 7 H: 5 L: 22 MATERIAL:
BL03 Bridge conc/steel/wood

LOCATION/GPS#
393

NOTES:
golf course

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 3 H: L: MATERIAL:
BL03 Culvert Steel

LOCATION/GPS#
394

NOTES:
with armoring- cont. underground from outside of golf course

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL03 Plastic Pipe Top: 0.33 Bottom Deep:

LOCATION/GPS #
376

NOTES:
left bank- draining from Sheridan

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL03 Plastic Pipe Top: 0.33 Bottom Deep:

LOCATION/GPS #
376

NOTES:
left bank- draining golf course

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.33 Bottom Deep:

LOCATION/GPS #

NOTES:

left bank

378

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Steel Pipe SIZE (ft): Top: 0.75 Bottom Deep:

LOCATION/GPS #

NOTES:

right bank

378

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.33 Bottom Deep:

LOCATION/GPS #

NOTES:

left bank

378

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.33 Bottom Deep:

LOCATION/GPS #

NOTES:

right bank

379

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Steel Pipe SIZE (ft): Top: 0.75 Bottom Deep:

LOCATION/GPS #

NOTES:

left bank- erosion

381

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.5 Bottom Deep:

LOCATION/GPS #

NOTES:

left bank

381

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.4 Bottom Deep:

LOCATION/GPS #

NOTES:

right bank

383

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.4 Bottom Deep: 0

LOCATION/GPS #

NOTES:

left bank

383

POINT DISCHARGE:

LAKE CO ID: BL03 TYPE: Plastic Pipe SIZE (ft): Top: 0.4 Bottom Deep:

NOTES:	LOCATION/GPS #
right bank	383
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL03	Plastic Pipe
SIZE (ft):	Top: 0.33 Bottom: 0 Deep: 0
NOTES:	LOCATION/GPS #
left of culvert	384
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL03	Swale/Open Channel
SIZE (ft):	Top: 9 Bottom: 0 Deep: 0
NOTES:	LOCATION/GPS #
left bank- created?/used by golf course for draining purposes, retention pond	384
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL03	Plastic Pipe
SIZE (ft):	Top: 0.75 Bottom: 0 Deep: 0
NOTES:	LOCATION/GPS #
left bank	388
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL03	Swale/Open Channel
SIZE (ft):	Top: 3 Bottom: 0 Deep: 0
NOTES:	LOCATION/GPS #
right bank- created?/used by golf course for draining purposes	394

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	0
	Recreational:	100	Commercial Industrial:	0
	Residential:	0	Other:	0
	Other Description:			

VEGETATION %	Forest:	10	Lawn/Grass:	90	Wetlands:	0
	Crops:	0	Shrub/Weeds:	0	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 10

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	10	Sand:	20	Cobble:	30	Silt:	10
	Concrete:	0	Organic Matter:	10	Boulder:	20	Claypan:	0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low
FILAMENTOUS ALGAE:	Low

GREASE/OIL IN WATER COLUMN:

☐

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY: High

WATER COLOR: Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☒ Macrophytes: ☒ Logs: ☐ COMMENTS (Instream Cover for Fish):
Overhanging Veg: ☐ Rootwads: ☐ Boulders: ☒ Backwaters: ☒

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☐ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐
Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐
Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other: unidentified

BIRDS:

Ducks: ☒ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐
Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		69	culvert/ drain pipes/ dam
		GPS #		
		376		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		70	bridge
		GPS #		
		377		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		71	drain pipe
		GPS #		
		378		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		72	drain pipe
		GPS #		
		378		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		73	drain pipe
		GPS #		
		378		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		74	dam with armoring
		GPS #		
		379		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		75	drain pipe
		GPS #		
		379		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		76	dam
		GPS #		
		380		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		77	drain pipes x2
		GPS #		
		381		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		78	bridge
		GPS #		
		382		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		79	drain pipes x3
		GPS #		
		383		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		80	bridge
			GPS # 383	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		81	culvert with drain pipe
			GPS # 384	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		82	open channel
			GPS #	
			384	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		83	bridge
		GPS #		
		385		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		84	dam
		GPS #		
		386		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		85	bridge
		GPS #		
		387		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		86	drain pipe
		GPS #		
		388		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		87	bridge
		GPS #		
		389		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		88	culverts x2 with armoring
		GPS #		
		390		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		89	dam
		GPS #		
		390		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		90	bridge
		GPS #		
		391		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		91	bridge
		GPS #		
		392		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		92	bridge
		GPS #		
		393		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL03	Russell Brunner		93	culvert and open channel
		GPS #		
		394		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL04	DATE:	7/19/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Glen Flora Trib	4				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Lewis		culvert at Montesano				
UPSTREAM GPS#	292	DOWNSTREAM GPS#	280			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
7000	89	10:00:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:	
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High					
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	1
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:		DEGREE OF ARMORING:	0
					Types/Locations of High Cases:
SEDIMENT ACCUMULATIONS:	3				
MEAN BANK HT (ft):	2.7	BANK HT RANGE:	from: .9	to: 4.5	
MEAN BANK SLOPE:	.375/1	BANK SLOPE RANGE:	from: .25/1	to: .5/1	
MEAN WATER DEPTH (ft):	.175	WATER DEPTH RANGE:	from: .1	to: .25	
TOP MEAN CHAN. WIDTH (ft):	13.75	TOP CHANNEL WIDTH RANGE:	from 12.5	to: 15	
BOTTOM MEAN CHAN. WIDTH (ft):	6.5	BOT. CHAN. WIDTH RANGE:	from 5	to: 8	
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0	
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 0	Wetland: 40	
	Trees: 10	Shrub: 30	Rowcrop: 0		
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CANOPY (% shaded cov. of channel):	10	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:	
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass		
COMMENTS:					
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>		
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:		

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2.5 H:	L:	MATERIAL:
BL04	Culvert				Concrete
LOCATION/GPS#	NOTES:				
280	north side Montesano- continues to golfcourse underground				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3 H:	2 L:	10	MATERIAL:
BL04	Bridge					Wood
LOCATION/GPS#	NOTES:					
283	residential footbridge					

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3 H:	5 L:	12	MATERIAL:
BL04	Bridge					Wood

LOCATION/GPS#
286

NOTES:
residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 3.5 H: 3 L: 12 MATERIAL:
BL04 Bridge Wood

LOCATION/GPS#
288

NOTES:
residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2.5 H: L: MATERIAL:
BL04 Culvert Steel

LOCATION/GPS#
289

NOTES:
right bank- wetland ditch

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: 2 L: MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
290

NOTES:
east side of Butrick

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: 2 L: 0 MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
290

NOTES:
east side of Butrick

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 1 H: L: MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
290

NOTES:
east side of Butrick

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: 2 L: MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
291

NOTES:
west side of Butrick

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 2 H: 2 L: MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
291

NOTES:
west side of Butrick

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 3 H: L: MATERIAL:
BL04 Culvert Concrete

LOCATION/GPS#
292

NOTES:
east side of Lewis- continues underground

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL04 Swale/Open Channel Top: 3 Bottom Deep:

NOTES:		LOCATION/GPS #
left bank- open space		281
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL04	Swale/Open Channel	Top: 1 Bottom: Deep:
NOTES:		LOCATION/GPS #
right bank- open space		282
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL04	Steel Pipe	Top: 2.5 Bottom: Deep:
NOTES:		LOCATION/GPS #
left bank- residential		284
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL04	Plastic Pipe	Top: 1.5 Bottom: Deep:
NOTES:		LOCATION/GPS #
left bank- residential		287
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL04	Concrete Pipe	Top: 3 Bottom: Deep:
NOTES:		LOCATION/GPS #
right bank- openspace/ powerlines		290

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	40
	Recreational:	20	Commercial Industrial:	10
	Residential:	30	Other	0
	Other Description:			

VEGETATION %	Forest:	10	Lawn/Grass:	20	Wetlands:	50
	Crops:	0	Shrub/Weeds:	20	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 50

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	5	Sand:	10	Cobble:	5	Silt:	60
	Concrete:	0	Organic Matter:	10	Boulder:	0	Claypan:	10

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Low
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	High
FILAMENTOUS ALGAE:	Low

GREASE/OIL IN WATER COLUMN:



GREASE/OIL IN SEDIMENT:



TURBIDITY:	Low	COMMENTS:
WATER COLOR:	Brown	

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A	
HABITATS SAMPLED FOR INVERTEBRATES:	N/A	
GEAR/METHODS USED FOR:	Invertebrates:	Fish:
EFFORTS USED FOR:	Invertebrates:	Fish:

INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						

FISH:					
Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

BIRDS:				
Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gulls/Terns:	Others:			
<input type="checkbox"/>				

ADDITIONAL COMMENTS:

PHOTO TABLE:				
LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		450	culvert- north side of Montesaro
			GPS #	
			280	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		451	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		452	open channel
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		453	open channel
		GPS #		
		282		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		454	bridge (downstream)
		GPS #		
		283		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		455	drain pipe/ armoring
		GPS #		
		284		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		456	erosion
		GPS #		
		285		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		457	bridge (downstream)
		GPS #		
		286		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		458	drain pipe
		GPS #		
		287		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		459	bridge
		GPS #		
		288		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		460	culvert
		GPS #		
		289		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		461	culvert x 3
		GPS #		
		290		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		462	drain pipe
		GPS #		
		290		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL04	Russell Brunner		463	culvert x2
		GPS #		
		291		

LAKE CO ID: PHO

BL04

Russell Brunner

11

464

culvert at Lewis

292

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL05	DATE:	7/19/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Unnamed Trib	5				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Ganster Rd.		wetland				
UPSTREAM GPS#	303	DOWNSTREAM GPS#	293			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3000	89	01:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	3	BASEFLOW SINUOSITY:	3	POOL/RIFFLE DEVELOPMENT:	3	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
		photos			photos	
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	2	BANK HT RANGE:	from: 2	to: 2		
MEAN BANK SLOPE:	1/1	BANK SLOPE RANGE:	from: .75/1	to: 1.25/1		
MEAN WATER DEPTH (ft):	.175	WATER DEPTH RANGE:	from: .1	to: .25		
TOP MEAN CHAN. WIDTH (ft):	8	TOP CHANNEL WIDTH RANGE:	from 6	to: 10		
BOTTOM MEAN CHAN. WIDTH (ft):	4.75	BOT. CHAN. WIDTH RANGE:	from 2.5	to: 7		
MEAN VELOCITY (ft/s):	20/140	VELOCITY RANGE:	from: 0	to: 20/140		
PREDOMINANT BANK VEG. %	None: 0	Grass: 10	Lawn: 0	Wetland: 10		
	Trees: 40	Shrub: 40	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	70	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:	minor log jams					
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	4 H:	L:	MATERIAL:
BL05	Culvert				Concrete
LOCATION/GPS#	NOTES:				
303	south side of Ganster Rd.				

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):	Top:	1.5 Bottom:	Deep:
BL05	Steel Pipe				
NOTES:	LOCATION/GPS #				
left bank- creating 2ft channel	294				

POINT DISCHARGE:

LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 295		
NOTES: left bank- open space/ residential		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom Deep:
LOCATION/GPS # 296		
NOTES: left bank		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 296		
NOTES: left bank		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 297		
NOTES: left bank- gray/blue in water		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom Deep:
LOCATION/GPS # 299		
NOTES: left bank		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 300		
NOTES: left bank		
POINT DISCHARGE:		
LAKE CO ID: BL05	TYPE: Swale/Open Channel	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 302		
NOTES: left bank		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	70
	Recreational:	0	Commercial Industrial:	0
	Residential:	30	Other	0
	Other Description:			
VEGETATION %	Forest:	40	Lawn/Grass:	10
	Crops:	0	Shrub/Weeds:	35
			Wetlands:	15
			Other:	0

Other Description:

WIDTH OF VEGETATED BUFFER:

125ft

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %

Gravel:

20

Sand:

10

Cobble:

10

Silt:

30

Concrete:

0

Organic Matter:

10

Boulder:

5

Claypan:

15

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Moderate

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:

☐

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY:

Moderate

WATER COLOR:

Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:

☒

Pools Over 28" Deep:

☒

Macrophytes:

☒

Logs:

☒

COMMENTS (Instream Cover for Fish):

Overhanging Veg:

☒

Rootwads:

☒

Boulders:

☒

Backwaters:

☒

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

☐

Caddisflies:

☐

Dragonfly/Damselfly Nymphs:

☐

Snail:

☐

Isopods:

☐

Sowbugs:

☐

Leeches:

☐

Worms:

☐

Water Pennies:

☐

Beetles:

☐

Other:

FISH:

Carp:

☐

Black Bullheads:

☐

Creek Chubs:

☐

Green Sunfish:

☐

Bluegill:

☐

Largemouth Bass:

☐

Johnny Darters:

☐

Fathead Minnows:

☐

Golden Shiners:

☐

Other:

BIRDS:

Ducks:

☐

Geese:

☐

Hérons:

☐

Kingfishers:

☐

Sandpipers/Plovers:

☐

Gulls/Terns:

☐

Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

BL05

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

465

PHOTO DESCRIPTION:

wetland

GPS #

293

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		466	drain pipe
		GPS #		
		294		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		467	drain pipe with open channel
		GPS #		
		294		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		468	open channel
		GPS #		
		295		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		469	open channel
		GPS #		
		296		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		470	open channel
		GPS #		
		296		

PHOTO TABLE:

LAKE CO ID:

BL05

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

471

PHOTO DESCRIPTION:

open channel- gray/blue water

GPS #

297

PHOTO TABLE:

LAKE CO ID:

BL05

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

472

PHOTO DESCRIPTION:

debris- barbed wire

GPS #

298

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		473	erosion
		GPS #		
		299		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		474	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		475	open channel
			GPS #	
			299	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		476	open channel
			GPS #	
			300	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		478	pond- left bank
		GPS #		
		301		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		479	open channel
		GPS #		
		302		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL05	Russell Brunner		480	culvert
		GPS #		
		303		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL06	DATE:	7/31/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	Unnamed Trib	6				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
vegetation		culvert at Ganster Rd.				
UPSTREAM GPS#	375	DOWNSTREAM GPS#	372			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	95	09:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	0					
MEAN BANK HT (ft):	2.25	BANK HT RANGE:	from: 1.5	to: 3		
MEAN BANK SLOPE:	1/1	BANK SLOPE RANGE:	from: 1/1	to: 1/1		
MEAN WATER DEPTH (ft):	.1	WATER DEPTH RANGE:	from: 0	to: .2		
TOP MEAN CHAN. WIDTH (ft):	6.75	TOP CHANNEL WIDTH RANGE:	from: 5.5	to: 8		
BOTTOM MEAN CHAN. WIDTH (ft):	3.25	BOT. CHAN. WIDTH RANGE:	from: 3	to: 3.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 0	Wetland: 0		
	Trees: 30	Shrub: 50	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CANOPY (% shaded cov. of channel):	80	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	4 H:	L:	MATERIAL:
BL06	Culvert				Concrete
LOCATION/GPS#	NOTES:				
372	north side Ganster				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	2.5 L:	0 MATERIAL:
BL06	Culvert				Concrete
LOCATION/GPS#	NOTES:				
373	Sheridan Rd.				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	2.5 L:	0 MATERIAL:
BL06	Culvert				Concrete

LOCATION/GPS# 374	NOTES: west side Sheridan Rd.
-----------------------------	---

POINT DISCHARGE:

LAKE CO ID: BL06	TYPE: Concrete Pipe	SIZE (ft): Top: 1 Bottom: 1 Deep: 1
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LOCATION/GPS # **372**

NOTES:
left bank- draining Sheridan

POINT DISCHARGE:

LAKE CO ID: BL06	TYPE: Swale/Open Channel	SIZE (ft): Top: 2 Bottom: 2 Deep: 2
----------------------------	------------------------------------	---

LOCATION/GPS # **374**

NOTES:
right bank

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural: 0	Vacant/Open Space: 70
	Recreational: 0	Commercial Industrial: 0
	Residential: 30	Other: 0
	Other Description:	

VEGETATION %	Forest: 30	Lawn/Grass: 20	Wetlands: 0
	Crops: 0	Shrub/Weeds: 50	Other: 0
	Other Description:		

WIDTH OF VEGETATED BUFFER: **60**

COMMENTS (Riparian Corridor/Floodplain): **20ft to road 100+ft away from road**

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel: 10	Sand: 30	Cobble: 10	Silt: 40
	Concrete: 0	Organic Matter: 0	Boulder: 0	Claypan: 10

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
<input type="checkbox"/>	<input type="checkbox"/>

TURBIDITY: **Low**

WATER COLOR: **Clear** COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A
HABITATS SAMPLED FOR INVERTEBRATES:	N/A
GEAR/METHODS USED FOR:	Invertebrates: Fish:
EFFORTS USED FOR:	Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☒ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐
Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐
Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐
Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:**PHOTO TABLE:**

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		63	culvert
		GPS # 372		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		64	drain pipe
		GPS # 372		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		65	culvert
		GPS #		
		373		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		66	culvert
		GPS #		
		374		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		67	open channel
		GPS #		
		374		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL06	Russell Brunner		68	vegetation- end
		GPS #		
		375		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL07	DATE:	7/3/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	8				
REACH BOUNDARIES UPSTREAM:	REACH BOUNDARIES DOWNSTREAM:					
Sheridan culverts	culverts at railroad tracks					
UPSTREAM GPS#	016	DOWNSTREAM GPS#	001			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
1800	70	10:00:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases: see photos	DEGREE OF ARMORING:	1	Types/Locations of High Cases: photos	
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	11.625	BANK HT RANGE:	from: 5	to: 30		
MEAN BANK SLOPE:	.81/1	BANK SLOPE RANGE:	from: .25/1	to: 1.5/1		
MEAN WATER DEPTH (ft):	1.75	WATER DEPTH RANGE:	from: .75	to: 2.5		
TOP MEAN CHAN. WIDTH (ft):	30	TOP CHANNEL WIDTH RANGE:	from: 23	to: 41		
BOTTOM MEAN CHAN. WIDTH (ft):	16	BOT. CHAN. WIDTH RANGE:	from: 10	to: 24		
MEAN VELOCITY (ft/s):	20/50	VELOCITY RANGE:	from: 0	to: 20/50		
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 10	Wetland: 0		
	Trees: 40	Shrub: 50	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	50	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 10.5 H: 7 L:	MATERIAL:
BL07	Culvert		Steel

LOCATION/GPS#
001

NOTES:
under railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 10.5 H: 7 L:	MATERIAL:
BL07	Culvert		Steel

LOCATION/GPS#
001

NOTES:
under railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 10.5 H: 7 L:	MATERIAL:
BL07	Culvert		Steel

LOCATION/GPS#

001

NOTES:

under railroad tracks

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL07

TYPE:

Culvert

SIZE (ft): W: 7.8 H: 10 L:

MATERIAL:

Concrete

LOCATION/GPS#

016

NOTES:

east side Sheridan Rd.

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL07

TYPE:

Culvert

SIZE (ft): W: 7.8 H: 10 L: 0

MATERIAL:

Concrete

LOCATION/GPS#

016

NOTES:

east side Sheridan Rd.

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom

Deep:

LOCATION/GPS #

005

NOTES:

left bank- residential

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 0.5 Bottom

Deep:

LOCATION/GPS #

006

NOTES:

left bank- residential/ high erosion

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 0.5 Bottom

Deep:

LOCATION/GPS #

007

NOTES:

left bank- residential/ erosion

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom

Deep:

LOCATION/GPS #

009

NOTES:

left bank- residential

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Steel Pipe

SIZE (ft):

Top: 1 Bottom

Deep:

LOCATION/GPS #

011

NOTES:

right bank- residential

POINT DISCHARGE:

LAKE CO ID:

BL07

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 1 Bottom

Deep:

LOCATION/GPS #

013

NOTES:

right bank- residential

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	30
	Recreational:	0	Commercial Industrial:	0
	Residential:	70	Other:	0
	Other Description:			

VEGETATION %	Forest:	33	Lawn/Grass:	33	Wetlands:	0
	Crops:	0	Shrub/Weeds:	33	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 40

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	20	Sand:	30	Cobble:	20	Silt:	20
	Concrete:	5	Organic Matter:	0	Boulder:	5	Claypan:	0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Moderate
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	Low

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:

TURBIDITY: Moderate

WATER COLOR: Brown

COMMENTS: erosion

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail:	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						

FISH:

Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

BIRDS:

Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gulls/Terns:	Others:			
<input type="checkbox"/>				

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		94	culverts under railroad tracks
		GPS #		
		001		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		95	erosion- left bank
		GPS #		
		002		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		96	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		97	debris- log jam
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		98	armoring
		GPS #		
		003		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		99	erosion- left bank
		GPS #		
		004		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		100	drain pipe- left bank
			GPS #	
			005	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		101	open channel- left bank
			GPS #	
			006	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		102	open channel
		GPS #		
		007		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		103	erosion- right bank
		GPS #		
		008		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		104	drain pipe
		GPS #		
		009		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		105	sanitary sewer
		GPS #		
		010		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		106	drain pipe
		GPS #		
		011		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		107	drain pipe- sealed
		GPS #		
		012		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		108	open channel
		GPS #		
		013		

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		109	debris- log jam
		GPS #		
		014		

GPS #
014

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		110	erosion- left bank
		GPS #		
		015		

GPS #
015

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL07	Russell Brunner		111	box culverts at Sheridan
		GPS #		
		016		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL08	DATE:	7/3/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	9				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
fork		culverts at Sheridan Rd.				
UPSTREAM GPS#	027	DOWNSTREAM GPS#	017			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	70	12:00:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	3	BASEFLOW SINUOSITY:	3	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
		see photos				
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	4.6	BANK HT RANGE:	from: 4.5	to: 5		
MEAN BANK SLOPE:	.91/1	BANK SLOPE RANGE:	from: .5/1	to: 1.25/1		
MEAN WATER DEPTH (ft):	.61	WATER DEPTH RANGE:	from: .33	to: 1		
TOP MEAN CHAN. WIDTH (ft):	29.2	TOP CHANNEL WIDTH RANGE:	from 19.5	to: 30		
BOTTOM MEAN CHAN. WIDTH (ft):	11.3	BOT. CHAN. WIDTH RANGE:	from 7	to: 14		
MEAN VELOCITY (ft/s):	20/107	VELOCITY RANGE:	from: 0	to: 20/180		
PREDOMINANT BANK VEG. %	None: 33	Grass: 0	Lawn: 0	Wetland: 0		
	Trees: 33	Shrub: 33	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	70	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 7.75 H: 10 L:	MATERIAL:
BL08	Culvert		Concrete
LOCATION/GPS#	NOTES:		
017	west side Sheridan Rd.		

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 7.8 H: 10 L:	MATERIAL:
BL08	Culvert		Concrete
LOCATION/GPS#	NOTES:		
017	west side Sheridan Rd.		

POINT DISCHARGE:

LAKE CO ID: BL08 TYPE: Concrete Pipe SIZE (ft): Top: 2 Bottom: Deep:

LOCATION/GPS #

NOTES: 017

draining Sheridan Rd. in culvert

POINT DISCHARGE:

LAKE CO ID: BL08 TYPE: Swale/Open Channel SIZE (ft): Top: 1 Bottom: Deep:

LOCATION/GPS #

NOTES: 018

left bank- open space/erosion

POINT DISCHARGE:

LAKE CO ID: BL08 TYPE: Concrete Pipe SIZE (ft): Top: 2 Bottom: Deep:

LOCATION/GPS #

NOTES: 019

left bank- draining commercial road

POINT DISCHARGE:

LAKE CO ID: BL08 TYPE: Swale/Open Channel SIZE (ft): Top: 2 Bottom: Deep:

LOCATION/GPS #

NOTES: 020

left bank- erosion/ log impoundment

POINT DISCHARGE:

LAKE CO ID: BL08 TYPE: Concrete Pipe SIZE (ft): Top: 0.5 Bottom: Deep:

LOCATION/GPS #

NOTES: 025

left bank- residential/ high erosion

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	30
	Recreational:	0	Commercial Industrial:	0
	Residential:	70	Other:	0
	Other Description:			

VEGETATION %	Forest:	20	Lawn/Grass:	20	Wetlands:	0
	Crops:	0	Shrub/Weeds:	60	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 100

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	45	Sand:	10	Cobble:	30	Silt:	10
	Concrete:	0	Organic Matter:	0	Boulder:	5	Claypan:	0

SUBSTRATE STABILITY OF ENTIRE CHANNEL: Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	Low
GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
TURBIDITY:	Moderate
WATER COLOR:	Brown
COMMENTS:	

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A						
HABITATS SAMPLED FOR INVERTEBRATES:	N/A						
GEAR/METHODS USED FOR:	Invertebrates:	Fish:					
EFFORTS USED FOR:	Invertebrates:	Fish:					
INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail:	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						
FISH:							
Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
BIRDS:							
Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Gulls/Terns:	Others:						
<input type="checkbox"/>							
ADDITIONAL COMMENTS:							

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		112	culvert
		GPS #		
		017		

PHOTO TABLE:

LAKE CO ID:
BL08

PHOTOGRAPHER:
Russell Brunner

ROLL #:

PHOTO #:
113

PHOTO DESCRIPTION:
drain pipe

GPS #
017

PHOTO TABLE:

LAKE CO ID:
BL08

PHOTOGRAPHER:
Russell Brunner

ROLL #:

PHOTO #:
114

PHOTO DESCRIPTION:
open channel- left bank

GPS #
018

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		115	drain pipe- crating open channel
		GPS #		
		019		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		116	open channel
		GPS #		
		020		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		117	erosion- right bank
		GPS #		
		021		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		118	debris
		GPS #		
		022		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		119	debris
		GPS #		
		023		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		120	sanitary sewer manhole
		GPS #		
		024		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		121	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		122	erosion/ drain pipe
GPS #				
025				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		123	debris (downstream)
GPS #				
026				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL08	Russell Brunner		124	main fork- end reach
		GPS #		
		027		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL09	DATE:	7/3/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	10				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culverts at Talmadge		south fork				
UPSTREAM GPS#	046	DOWNSTREAM GPS#	028			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2500	70	02:10:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High					
BANKFULL SINUOSITY:	3	BASEFLOW SINUOSITY:	3	POOL/RIFFLE DEVELOPMENT:	1
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:
		photos			
SEDIMENT ACCUMULATIONS:	2				
MEAN BANK HT (ft):	3.5	BANK HT RANGE:	from: 2.5	to: 4	
MEAN BANK SLOPE:	.83/1	BANK SLOPE RANGE:	from: .5/1	to: 1/1	
MEAN WATER DEPTH (ft):	1.16	WATER DEPTH RANGE:	from: .75	to: 1.5	
TOP MEAN CHAN. WIDTH (ft):	18.83	TOP CHANNEL WIDTH RANGE:	from 14	to: 25	
BOTTOM MEAN CHAN. WIDTH (ft):	9.8	BOT. CHAN. WIDTH RANGE:	from 6.5	to: 11.6	
MEAN VELOCITY (ft/s):	.41	VELOCITY RANGE:	from: 0	to: 1/24	
PREDOMINANT BANK VEG. %	None:	Grass:	5	Lawn:	5
	Trees:	10	Shrub:	80	Rowcrop:
				0	
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
					Other:
CANOPY (% shaded cov. of channel):	60	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:	
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass		
COMMENTS:					
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input checked="" type="checkbox"/>		
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:		

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5	H:	7	L:	MATERIAL:
BL09	Culvert						Steel
LOCATION/GPS#	NOTES:						
046	north side Talmadge Rd.						

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5	H:	7	L:	MATERIAL:
BL09	Culvert						Steel
LOCATION/GPS#	NOTES:						
046	north side Talmadge						

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Swale/Open Channel	Top: 1 Bottom Deep:
LOCATION/GPS #		
029		

NOTES:
left bank- mineral/clay in sediment, rust color

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Plastic Pipe	Top: 0.25 Bottom Deep:
LOCATION/GPS #		
035		

NOTES:
left bank- debris

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Plastic Pipe	Top: 0.25 Bottom Deep: 0
LOCATION/GPS #		
036		

NOTES:
left bank- residential

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Plastic Pipe	Top: 0.25 Bottom Deep: 0
LOCATION/GPS #		
038		

NOTES:
right bank- residential

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Clay Pipe	Top: 0.75 Bottom Deep:
LOCATION/GPS #		
039		

NOTES:
right bank- residential

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Concrete Pipe	Top: 1 Bottom Deep:
LOCATION/GPS #		
040		

NOTES:
left bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Plastic Pipe	Top: 0.25 Bottom Deep:
LOCATION/GPS #		
041		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL09	Plastic Pipe	Top: 1 Bottom Deep:
LOCATION/GPS #		
042		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: BL09	TYPE: Concrete Pipe	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 046		
NOTES: right bank- Talmadge Rd.		

POINT DISCHARGE:		
LAKE CO ID: BL09	TYPE: Concrete Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 046		
NOTES: right bank- Talmadge Rd.		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	10		
	Recreational:	90	Commercial Industrial:	0		
	Residential:	0	Other	0		
	Other Description:					
VEGETATION %	Forest:	20	Lawn/Grass:	20	Wetlands:	0
	Crops:	0	Shrub/Weeds:	60	Other:	0
	Other Description:					
WIDTH OF VEGETATED BUFFER:		50				
COMMENTS (Riparian Corridor/Floodplain):						

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	20	Sand:	5	Cobble:	5	Silt:	20
	Concrete:	0	Organic Matter:	0	Boulder:	0	Claypan:	50
SUBSTRATE STABILITY OF ENTIRE CHANNEL:				Moderate				
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:				Moderate				
FILAMENTOUS ALGAE:				Low				
GREASE/OIL IN WATER COLUMN:				GREASE/OIL IN SEDIMENT:				
TURBIDITY:		High						
WATER COLOR:		Brown						
COMMENTS:								

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A						
HABITATS SAMPLED FOR INVERTEBRATES:	N/A						
GEAR/METHODS USED FOR:	Invertebrates:		Fish:				
EFFORTS USED FOR:	Invertebrates:		Fish:				
INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐

Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐

Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		124	left fork- cont. south branch
		GPS #		
		028		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		125	open channel- mineral in sediment
		GPS #		
		029		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		126	representative reach photo (downstream)
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		127	erosion- left bank
		GPS #		
		030		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		128	debris
		GPS #		
		031		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		129	armoring- left bank
		GPS #		
		032		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		130	debris
		GPS #		
		033		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		131	armoring- left bank
		GPS #		
		034		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		132	drain pipe
		GPS #		
		035		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		133	drain pipe
		GPS #		
		036		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		134	armoring- left bank, failed
		GPS #		
		037		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		135	drain pipe
		GPS #		
		038		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		136	drain pipe
		GPS #		
		039		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		137	drain pipe
		GPS #		
		040		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		138	drian pipe
		GPS #		
		041		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		139	drain pipe
		GPS #		
		042		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		140	debris
		GPS #		
		043		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		141	debris
		GPS #		
		044		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		142	erosion- left bank
		GPS #		
		045		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		143	culverts at Talmadge
		GPS #		
		046		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		144	drain pipe
		GPS #		
		046		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL09	Russell Brunner		145	drain pipe
		GPS #		
		046		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL10	DATE:	7/5/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	11				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
Pickford Ave.		right fork- beginning of channel				
UPSTREAM GPS#	050	DOWNSTREAM GPS#	047			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
800	70	10:00:00	RB/KK	Interstitial	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	0	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
		see photos				
SEDIMENT ACCUMULATIONS:	0					
MEAN BANK HT (ft):	6.25	BANK HT RANGE:	from: .5	to: 12		
MEAN BANK SLOPE:	.25/1	BANK SLOPE RANGE:	from: .25/1	to: .25/1		
MEAN WATER DEPTH (ft):	0	WATER DEPTH RANGE:	from: 0	to: 0		
TOP MEAN CHAN. WIDTH (ft):	9	TOP CHANNEL WIDTH RANGE:	from 3	to: 15		
BOTTOM MEAN CHAN. WIDTH (ft):	4.5	BOT. CHAN. WIDTH RANGE:	from 1.5	to: 7.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 0	Wetland: 0		
	Trees: 50	Shrub: 50	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	75	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL10	Plastic Pipe	Top: 0.25 Bottom: Deep:
NOTES:	LOCATION/GPS #	
right bank- closed up	049	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	20
	Recreational:	0	Commercial Industrial:	0
	Residential:	80	Other	0
	Other Description:			

VEGETATION %	Forest:	33	Lawn/Grass:	33	Wetlands:	0
	Crops:	0	Shrub/Weeds:	33	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 30

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	5	Sand:	0	Cobble:	0	Silt	75
	Concrete:	0	Organic Matter:	0	Boulder:	0	Claypan:	20

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
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TURBIDITY: N/A

WATER COLOR: COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
Water Pennies:	Beetles:	Other:					

FISH:

Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		

BIRDS:

Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:
Gulls/Terns:	Others:			

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL10	Russell Brunner		146	start of channel- fork
		GPS #		
		047		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL10	Russell Brunner		147	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL10	Russell Brunner		148	erosion
		GPS #		
		048		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL10	Russell Brunner		149	drain pipe
		GPS #		
		049		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL10	Russell Brunner		150	end reach- Pickford Ave.
		GPS #		
		050		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL11	DATE:	7/5/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	12				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Bertrand Rd.		culverts at Talmadge				
UPSTREAM GPS#	068	DOWNSTREAM GPS#	051			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2500	68	01:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High					
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	2	Types/Locations of High Cases:
		photos			photos
SEDIMENT ACCUMULATIONS:	1				
MEAN BANK HT (ft):	2.5	BANK HT RANGE:	from: 2.5	to: 2.5	
MEAN BANK SLOPE:	.75/1	BANK SLOPE RANGE:	from: .5/1	to: 1/1	
MEAN WATER DEPTH (ft):	.2	WATER DEPTH RANGE:	from: .16	to: .25	
TOP MEAN CHAN. WIDTH (ft):	12.25	TOP CHANNEL WIDTH RANGE:	from: 9.5	to: 15	
BOTTOM MEAN CHAN. WIDTH (ft):	2.5	BOT. CHAN. WIDTH RANGE:	from: 2	to: 3	
MEAN VELOCITY (ft/s):	20/24	VELOCITY RANGE:	from: 0	to: 20/24	
PREDOMINANT BANK VEG. %	None: 20	Grass: 0	Lawn: 0	Wetland: 0	
	Trees: 40	Shrub: 40	Rowcrop: 0		
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CANOPY (% shaded cov. of channel):	75	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:	
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass		
COMMENTS:					
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>		
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:		

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5 H:	7 L:	MATERIAL:
BL11	Culvert				Steel
LOCATION/GPS#	NOTES:				
051	south side Talmadge Rd.				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5 H:	7 L:	MATERIAL:
BL11	Culvert				Steel
LOCATION/GPS#	NOTES:				
051	south side Talmadge Rd.				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	L:	MATERIAL:
BL11	Culvert				Steel

LOCATION/GPS#

054

NOTES:

residential street/ driveway

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

3 H:

2 L:

10

MATERIAL:

BL11

Bridge

Wood

LOCATION/GPS#

060

NOTES:

residential

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

4.5 H:

9.5 L:

43

MATERIAL:

BL11

Bridge

Wood

LOCATION/GPS#

063

NOTES:

residential

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

4.5 H:

9.5 L:

43

MATERIAL:

BL11

Bridge

Wood

LOCATION/GPS#

063

NOTES:

residential

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

3 H:

2 L:

13

MATERIAL:

BL11

Bridge

Wood

LOCATION/GPS#

064

NOTES:

residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

2.5 H:

4 L:

12

MATERIAL:

BL11

Bridge

Wood

LOCATION/GPS#

065

NOTES:

residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID:

TYPE:

SIZE (ft): W:

4 H:

L:

MATERIAL:

BL11

Culvert

Concrete

LOCATION/GPS#

068

NOTES:

Bertrand Rd.- draining retention pond

POINT DISCHARGE:

LAKE CO ID:

TYPE:

SIZE (ft):

BL11

Concrete Pipe

Top:

1.5 Bottom

Deep:

LOCATION/GPS #

NOTES:

051

draining Talmadge from west

POINT DISCHARGE:

LAKE CO ID:

TYPE:

SIZE (ft):

BL11

Concrete Pipe

Top:

1.5 Bottom

Deep:

LOCATION/GPS #

NOTES:

051

draining Talmadge from east

POINT DISCHARGE:

LAKE CO ID:

TYPE:

SIZE (ft):

BL11

Plastic Pipe

Top:

2 Bottom

Deep:

NOTES:	LOCATION/GPS #	
	052	
left bank- residential/ armoring		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Swale/Open Channel	Top: 4 Bottom Deep:
	LOCATION/GPS #	
	056	
left bank- dry but established		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Steel Pipe	Top: 1.5 Bottom Deep:
	LOCATION/GPS #	
	057	
left bank- residential		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Swale/Open Channel	Top: 2 Bottom Deep:
	LOCATION/GPS #	
	058	
left bank		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Plastic Pipe	Top: 0.25 Bottom Deep:
	LOCATION/GPS #	
	061	
right bank		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Plastic Pipe	Top: 0.25 Bottom Deep:
	LOCATION/GPS #	
	062	
left bank		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Plastic Pipe	Top: 0.25 Bottom Deep:
	LOCATION/GPS #	
	065	
left bank- armoring		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Plastic Pipe	Top: 0.25 Bottom Deep:
	LOCATION/GPS #	
	065	
left bank		
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL11	Plastic Pipe	Top: 0.25 Bottom Deep:

NOTES:	LOCATION/GPS #
right bank- armoring	066
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL11	Concrete Pipe
SIZE (ft):	Top: 2 Bottom: Deep:
NOTES:	LOCATION/GPS #
right bank- retention pond	067

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	10
	Recreational:	0	Commercial Industrial:	0
	Residential:	90	Other	0
	Other Description:			

VEGETATION %	Forest:	10	Lawn/Grass:	50	Wetlands:	0
	Crops:	0	Shrub/Weeds:	40	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER:	30
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COMMENTS (Riparian Corridor/Floodplain):	
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D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	20	Sand:	5	Cobble:	40	Silt:	25
	Concrete:	0	Organic Matter:	0	Boulder:	5	Claypan:	5

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:

TURBIDITY:	Low
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WATER COLOR:	Brown	COMMENTS:
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E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A
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HABITATS SAMPLED FOR INVERTEBRATES:	N/A
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GEAR/METHODS USED FOR:	Invertebrates:	Fish:
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EFFORTS USED FOR:	Invertebrates:	Fish:
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INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						

FISH:

Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		

BIRDS:

Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:
Gulls/Terns:	Others:			

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		151	drain pipe
		GPS #		
		051		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		152	culverts
		GPS #		
		051		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		153	drain pipe
		GPS #		
		051		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		154	drain pipe
		GPS #		
		052		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		155	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		156	erosion
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		157	culvert with armoring
		GPS #		
		054		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		158	debris- sediment build up
		GPS #		
		055		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		159	open channel
		GPS #		
		056		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		160	erosion/ armoring- left bank
		GPS #		
		055		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		161	drain pipe
		GPS #		
		057		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		162	open channel
		GPS #		
		058		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		163	open channel
		GPS #		
		059		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		164	bridge
		GPS #		
		060		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		165	drain pipe
		GPS #		
		061		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		166	armoring
		GPS #		
		062		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		167	drain pipe
		GPS #		
		062		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		168	2 bridges
		GPS #		
		063		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		169	footbridge
		GPS #		
		064		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		170	footbridge
			GPS #	
			065	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		171	drain pipe
			GPS #	
			065	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		172	drain pipe
		GPS #		
		065		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		173	drain pipe
		GPS #		
		066		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		174	drain pipe
		GPS #		
		067		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL11	Russell Brunner		175	culvert at Bertrand
		GPS #		
		068		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL12	DATE:	7/6/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	13				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Beach Rd.		south fork from previous reach				
UPSTREAM GPS#	076	DOWNSTREAM GPS#	069			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
1900	75	08:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:				
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High								
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1			
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:			
		see photos						
SEDIMENT ACCUMULATIONS:	2							
MEAN BANK HT (ft):	3.33	BANK HT RANGE:	from:	3	to:	4		
MEAN BANK SLOPE:	.5/1	BANK SLOPE RANGE:	from:	.25/1	to:	.75/1		
MEAN WATER DEPTH (ft):	1	WATER DEPTH RANGE:	from:	.25	to:	2.5		
TOP MEAN CHAN. WIDTH (ft):	19.6	TOP CHANNEL WIDTH RANGE:	from	16	to:	22		
BOTTOM MEAN CHAN. WIDTH (ft):	10.8	BOT. CHAN. WIDTH RANGE:	from	7	to:	15		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from:	0	to:	0		
PREDOMINANT BANK VEG. %	None:	0	Grass:	10	Lawn:	0	Wetland:	0
	Trees:	50	Shrub:	40	Rowcrop:	0		
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
CANOPY (% shaded cov. of channel):	80	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:				
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass					

COMMENTS:			
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input checked="" type="checkbox"/>
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	4	L:	20.5	MATERIAL:
BL12	Bridge								Wood
LOCATION/GPS#	NOTES:								
070	connecting residential areas								

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	16	H:	7.5	L:		MATERIAL:
BL12	Culvert								Conc\steel
LOCATION/GPS#	NOTES:								
076	north side Beach Rd.								

POINT DISCHARGE:

LAKE CO ID:

BL12

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 2 Bottom Deep:

LOCATION/GPS #

074

NOTES:

left bank- dry

POINT DISCHARGE:

LAKE CO ID:

BL12

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 1 Bottom Deep:

LOCATION/GPS #

075

NOTES:

bike path run off

POINT DISCHARGE:

LAKE CO ID:

BL12

TYPE:

Concrete Pipe

SIZE (ft):

Top: 1 Bottom Deep:

LOCATION/GPS #

076

NOTES:

draining Beach Rd.

POINT DISCHARGE:

LAKE CO ID:

BL12

TYPE:

Concrete Pipe

SIZE (ft):

Top: 1 Bottom Deep:

LOCATION/GPS #

076

NOTES:

draining Beach Rd.

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %

Agricultural:

0

Vacant/Open Space:

30

Recreational:

70

Commercial Industrial:

0

Residential:

0

Other

0

Other Description:

VEGETATION %

Forest:

40

Lawn/Grass:

20

Wetlands:

0

Crops:

0

Shrub/Weeds:

40

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER:

60

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %

Gravel:

5

Sand:

20

Cobble:

30

Silt

30

Concrete:

5

Organic Matter:

0

Boulder:

5

Claypan:

5

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Moderate

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:

☒

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY:

High

WATER COLOR:

Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☒ Macrophytes: ☐ Logs: ☒ COMMENTS (Instream Cover for Fish):
 Overhanging Veg: ☒ Rootwads: ☒ Boulders: ☒ Backwaters: ☒

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☐ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐

Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐

Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐

Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		185	Culvert & Drainpipes
		GPS #		
		076		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		177	south fork from previous reach
		GPS #		
		069		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		178	bridge
		GPS #		
		070		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		179	erosion- right bank
		GPS #		
		071		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		180	debris- log jam
		GPS #		
		072		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		181	erosion- right bank
		GPS #		
		073		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		182	open channel
		GPS #		
		074		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		183	open channel
		GPS #		
		075		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL12	Russell Brunner		184	open channel
		GPS #		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL13	DATE:	7/6/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek (LM)	South Branch	14				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Wilson Ave.- stream continues from 700ft. of underground pipe		culvert at Beach Rd.				
UPSTREAM GPS#	101	DOWNSTREAM GPS#	077			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3000	80	10:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases: see photos	DEGREE OF ARMORING:	2	Types/Locations of High Cases: see photos	
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	2.8	BANK HT RANGE:	from: 2	to: 3.5		
MEAN BANK SLOPE:	.7/1	BANK SLOPE RANGE:	from: .5/1	to: .85/1		
MEAN WATER DEPTH (ft):	.58	WATER DEPTH RANGE:	from: .5	to: .75		
TOP MEAN CHAN. WIDTH (ft):	13.6	TOP CHANNEL WIDTH RANGE:	from 13	to: 14		
BOTTOM MEAN CHAN. WIDTH (ft):	7.8	BOT. CHAN. WIDTH RANGE:	from 5	to: 9.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 30	Lawn: 20	Wetland: 0		
	Trees: 20	Shrub: 30	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	60	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	16 H:	7.5 L:	MATERIAL:
BL13	Culvert				conc/steel
LOCATION/GPS#	NOTES:				
077	south side Beach Rd.				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5.5 H:	4 L:	MATERIAL:
BL13	Culvert				conc/steel
LOCATION/GPS#	NOTES:				
081	residential walkway				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3 H:	6 L:	12	MATERIAL:
BL13	Bridge					Wood

LOCATION/GPS# 083	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 4 H: 5 L: 15	MATERIAL: Wood	
LOCATION/GPS# 084	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Beaver Dam	SIZE (ft): W: 6 H: 10 L: 60	MATERIAL: Wood	
LOCATION/GPS# 086	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 4 H: 4 L: 12	MATERIAL: Concrete	
LOCATION/GPS# 087	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 4 H: 4 L: 12	MATERIAL: Concrete	
LOCATION/GPS# 089	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: channelized ar	SIZE (ft): W: 6 H: 5 L: 0	MATERIAL: Concrete	
LOCATION/GPS# 090	NOTES: stream channel covered with concrete			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 5 H: 6 L: 40	MATERIAL: Wood	
LOCATION/GPS# 093	NOTES: residential rock dam			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 10 H: 10 L: 15	MATERIAL: con/wood/steel	
LOCATION/GPS# 094	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Bridge	SIZE (ft): W: 3 H: 5 L: 20	MATERIAL: Wood	
LOCATION/GPS# 095	NOTES: residential			
HYDRAULIC STRUCTURES:				
LAKE CO ID: BL13	TYPE: Culvert	SIZE (ft): W: 3 H: L:	MATERIAL: Concrete	
LOCATION/GPS# 098	NOTES: right bank- driveway			

HYDRAULIC STRUCTURES:

LAKE CO ID: **BL13** TYPE: **Culvert** SIZE (ft): W: **6** H: **3** L: MATERIAL: **Concrete**

LOCATION/GPS#
100

NOTES:
right bank

HYDRAULIC STRUCTURES:

LAKE CO ID: **BL13** TYPE: **chanalized area** SIZE (ft): W: **7** H: **5.5** L: MATERIAL: **Concrete**

LOCATION/GPS#
100

NOTES:
stream channel covered with conc

HYDRAULIC STRUCTURES:

LAKE CO ID: **BL13** TYPE: **Culvert** SIZE (ft): W: **11** H: **4** L: MATERIAL: **Steel**

LOCATION/GPS#
101

NOTES:
east side Wilson Ave- stream continues from 700ft. Underground pipe

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Steel Pipe** SIZE (ft): Top: **1** Bottom: Deep:

LOCATION/GPS #

NOTES: **077**

right bank- draining Beach Rd. from south/ erosion

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Steel Pipe** SIZE (ft): Top: **0.75** Bottom: Deep:

LOCATION/GPS #

NOTES: **079**

left bank- erosion

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Steel Pipe** SIZE (ft): Top: **4** Bottom: Deep:

LOCATION/GPS #

NOTES: **082**

left bank- armoring/ North Ave.

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Steel Pipe** SIZE (ft): Top: **2** Bottom: Deep:

LOCATION/GPS #

NOTES: **082**

left bank- armoring/ North Ave.

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Steel Pipe** SIZE (ft): Top: **1** Bottom: Deep:

LOCATION/GPS #

NOTES: **082**

left bank- armoring/ North Ave.

POINT DISCHARGE:

LAKE CO ID: **BL13** TYPE: **Plastic Pipe** SIZE (ft): Top: **0.25** Bottom: Deep:

NOTES:	LOCATION/GPS #	
left bank- residential	091	
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL13	Concrete Pipe	Top: 0.75 Bottom: 0
NOTES:	LOCATION/GPS #	
right bank	092	
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL13	Plastic Pipe	Top: 0.5 Bottom: 0
NOTES:	LOCATION/GPS #	
left bank	097	
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL13	Swale/Open Channel	Top: 1 Bottom: 0
NOTES:	LOCATION/GPS #	
left bank	099	
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL13	Steel Pipe	Top: 1 Bottom: 0
NOTES:	LOCATION/GPS #	
draining Wilson Ave from north	101	
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL13	Steel Pipe	Top: 1 Bottom: 0
NOTES:	LOCATION/GPS #	
draining Wilson Ave. from south	101	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	20		
	Recreational:	0	Commercial Industrial:	0		
	Residential:	80	Other	0		
	Other Description:					
VEGETATION %	Forest:	20	Lawn/Grass:	50	Wetlands:	0
	Crops:	0	Shrub/Weeds:	30	Other:	0
	Other Description:					
WIDTH OF VEGETATED BUFFER:		30				
COMMENTS (Riparian Corridor/Floodplain):						

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	30	Sand:	20	Cobble:	5	Silt:	30
-------------------------	---------	----	-------	----	---------	---	-------	----

Concrete: 10 Organic Matter: 0 Boulder: 5 Claypan: 0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Moderate

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:

☐

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY:

Moderate

WATER COLOR:

Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:

☒

Pools Over 28" Deep:

☒

Macrophytes:

☒

Logs:

☒

COMMENTS (Instream Cover for Fish):

Overhanging Veg:

☒

Rootwads:

☒

Boulders:

☒

Backwaters:

☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

☐

Caddisflies:

☐

Dragonfly/Damselfly Nymphs:

☒

Snail

☐

Isopods:

☐

Sowbugs:

☐

Leeches:

☐

Worms:

☐

Water Pennies:

☐

Beetles:

☐

Other:

FISH:

Carp:

☐

Black Bullheads:

☐

Creek Chubs:

☐

Green Sunfish:

☒

Bluegill:

☒

Largemouth Bass:

☒

Johnny Darters:

☐

Fathead Minnows:

☐

Golden Shiners:

☐

Other:

BIRDS:

Ducks:

☐

Geese:

☐

Hérons:

☐

Kingfishers:

☐

Sandpipers/Plovers:

☐

Gulls/Terns:

☐

Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

BL13

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

186

PHOTO DESCRIPTION:

culvert at Beach Rd. (downstream)

GPS #

077

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		187	drain pipe
		GPS #		
		077		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		188	erosion- right bank
		GPS #		
		078		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		189	drain pipe
		GPS #		
		079		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		190	armoring- right bank
		GPS #		
		080		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		191	culvert
		GPS #		
		081		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		192	drain pipes
		GPS #		
		082		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		193	footbridge- armoring
		GPS #		
		083		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		194	footbridge/ armoring
		GPS #		
		084		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		195	armoring/ fence
		GPS #		
		085		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		196	bridge
		GPS #		
		086		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		197	bridge
		GPS #		
		087		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		198	concrete- armoring?
		GPS #		
		088		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		199	bridge (downstream)
		GPS #		
		089		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		200	channel armoring
		GPS #		
		090		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		201	drain pipe
		GPS #		
		091		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		202	drain pipe
		GPS #		
		092		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		203	bridge/ armoring/ dam
		GPS #		
		093		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		204	bridge (downstream)
		GPS #		
		094		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		205	bridge
		GPS #		
		095		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		206	debris- log jam
		GPS #		
		096		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		207	drain pipe
		GPS #		
		097		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		208	culvert
		GPS #		
		098		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		209	open channel
		GPS #		
		099		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		210	culvert/ channelization
		GPS #		
		100		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL13	Russell Brunner		211	culvert/ drain pipes at Wilson Ave.
		GPS #		
		101		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL14	DATE:	7/6/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	15				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
vegetation		culvert at Wilson Ave heading south				
UPSTREAM GPS#	107	DOWNSTREAM GPS#	102			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
500	80	01:00:00	RB/KK	None	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	0	BASEFLOW SINUOSITY:	0	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	0	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	0					
MEAN BANK HT (ft):	4.5	BANK HT RANGE:	from: 4.5	to: 4.5		
MEAN BANK SLOPE:	.75/1	BANK SLOPE RANGE:	from: .75/1	to: .75/1		
MEAN WATER DEPTH (ft):	0	WATER DEPTH RANGE:	from: 0	to: 0		
TOP MEAN CHAN. WIDTH (ft):	15	TOP CHANNEL WIDTH RANGE:	from 15	to: 15		
BOTTOM MEAN CHAN. WIDTH (ft):	5	BOT. CHAN. WIDTH RANGE:	from 5	to: 5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 30	Lawn: 0	Wetland: 0		
	Trees: 20	Shrub: 50	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CANOPY (% shaded cov. of channel):	10	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7 H:	L:	MATERIAL:
BL14	Culvert				Concrete
LOCATION/GPS#	NOTES:				
103	Wilson Ave.- right bank drain ditch				

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):	Top: 0.25 Bottom	Deep:
BL14	Plastic Pipe			
LOCATION/GPS #	NOTES:			
104	right bank			

POINT DISCHARGE:

LAKE CO ID: BL14	TYPE: Concrete Pipe	SIZE (ft): Top: 2 Bottom Deep:
LOCATION/GPS # 105		
NOTES: right bank		

POINT DISCHARGE:		
LAKE CO ID: BL14	TYPE: Plastic Pipe	SIZE (ft): Top: 0.5 Bottom Deep:
LOCATION/GPS # 106		
NOTES: left bank		

POINT DISCHARGE:		
LAKE CO ID: BL14	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 107		
NOTES: left bank		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	10
	Recreational:	0	Commercial Industrial:	0
	Residential:	90	Other	0
	Other Description:			

VEGETATION %	Forest:	5	Lawn/Grass:	15	Wetlands:	0
	Crops:	0	Shrub/Weeds:	80	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER:	10
COMMENTS (Riparian Corridor/Floodplain):	residential drainage ditch- almost completely vegetated

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	5	Sand:	0	Cobble:	5	Silt:	80
	Concrete:	0	Organic Matter:	10	Boulder:	0	Claypan:	0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:

TURBIDITY:	N/A
WATER COLOR:	COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A
HABITATS SAMPLED FOR INVERTEBRATES:	N/A

GEAR/METHODS USED FOR:	Invertebrates:		Fish:				
EFFORTS USED FOR:	Invertebrates:		Fish:				
INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						
FISH:							
Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
BIRDS:							
Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Gulls/Terns:	Others:						
<input type="checkbox"/>							
ADDITIONAL COMMENTS:							

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		212	Beginning of reach at Wilson Ave culvert S. Fork
		GPS #		
		102		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		213	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		214	culvert under Wilson Ave- drain ditch
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		215	drain pipe
		GPS #		
		104		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		216	drain pipe
		GPS #		
		105		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		217	drain pipe
		GPS #		
		106		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		218	drain pipe
		GPS #		
		107		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL14	Russell Brunner		219	representative reach- vegetated ditch/ end of reach
		GPS #		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL15	DATE:	7/9/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	16				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Beach Rd.		culvert at Manor Road- stream continues underground 700ft. to Wilson				
UPSTREAM GPS#	129	DOWNSTREAM GPS#	108			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2800	90	09:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
		photos				
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	6.3	BANK HT RANGE:	from: 5.5	to: 7.5		
MEAN BANK SLOPE:	1.06/1	BANK SLOPE RANGE:	from: .9/0	to: 1.3/1		
MEAN WATER DEPTH (ft):	.33	WATER DEPTH RANGE:	from: .25	to: .5		
TOP MEAN CHAN. WIDTH (ft):	22	TOP CHANNEL WIDTH RANGE:	from 21	to: 24		
BOTTOM MEAN CHAN. WIDTH (ft):	9.5	BOT. CHAN. WIDTH RANGE:	from 7.5	to: 11		
MEAN VELOCITY (ft/s):	20/2000	VELOCITY RANGE:	from: 0	to: 20/2000		
PREDOMINANT BANK VEG. %	None: 10	Grass: 20	Lawn: 20	Wetland: 0		
	Trees: 30	Shrub: 20	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	40	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	12 H:	8.5 L:	MATERIAL:
BL15	Culvert				Concrete
LOCATION/GPS#	NOTES:				
124	residential street				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	4.5 H:	8 L:	MATERIAL:
BL15	Bridge				Wood
LOCATION/GPS#	NOTES:				
126	residential street/ armoring				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	L:	MATERIAL:
BL15	Culvert				Steel

LOCATION/GPS# 129		NOTES: south side Beach Rd.	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 7 H: L:	MATERIAL: Steel
LOCATION/GPS# 108		NOTES: Manor Rd.- stream continues underground 700ft.	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Bridge	SIZE (ft): W: 4 H: 7.3 L: 24	MATERIAL: Wood
LOCATION/GPS# 110		NOTES: residential	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 7 H: L:	MATERIAL: Concrete
LOCATION/GPS# 111		NOTES: residential street	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 6 H: 4.5 L:	MATERIAL: Concrete
LOCATION/GPS# 113		NOTES: residential street- armoring	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 8 H: L:	MATERIAL: Concrete
LOCATION/GPS# 118		NOTES: left bank- residential road	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 7 H: L:	MATERIAL: Concrete
LOCATION/GPS# 111		NOTES: residential street	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 6 H: 4.5 L:	MATERIAL: Steel
LOCATION/GPS# 113		NOTES: residential street	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 8 H: L:	MATERIAL: Concrete
LOCATION/GPS# 118		NOTES: left bank-residential street	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL15	TYPE: Culvert	SIZE (ft): W: 2 H: L:	MATERIAL: Concrete
LOCATION/GPS# 120		NOTES: left bank- redirect pond/ subdivision?	

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Concrete Pipe	Top: 0.75 Bottom Deep:
LOCATION/GPS #		
108		

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Plastic Pipe	Top: 0.25 Bottom Deep:
LOCATION/GPS #		
109		

NOTES:

right bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Plastic Pipe	Top: 0.25 Bottom Deep: 0
LOCATION/GPS #		
110		

NOTES:

right bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Plastic Pipe	Top: 1.25 Bottom Deep:
LOCATION/GPS #		
111		

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Plastic Pipe	Top: 1.25 Bottom Deep:
LOCATION/GPS #		
111		

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Concrete Pipe	Top: 1 Bottom Deep: 0
LOCATION/GPS #		
111		

NOTES:

right bank- draining from culvert

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Swale/Open Channel	Top: 2 Bottom Deep:
LOCATION/GPS #		
112		

NOTES:

right bank- drain ditch

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL15	Steel Pipe	Top: 1 Bottom Deep:
LOCATION/GPS #		
113		

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Steel Pipe	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 114		

NOTES:
over culvert- south end

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Steel Pipe	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 114		

NOTES:
over culvert north end

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 115		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 119		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Clay Pipe	SIZE (ft): Top: 1 Bottom Deep:
LOCATION/GPS # 119		

NOTES:
left bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Swale/Open Channel	SIZE (ft): Top: 3 Bottom Deep:
LOCATION/GPS # 121		

NOTES:
left bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 123		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:
LOCATION/GPS # 123		

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: BL15	TYPE: Swale/Open Channel	SIZE (ft): Top: 1.5 Bottom Deep:
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NOTES:		LOCATION/GPS #	
left bank		124	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Plastic Pipe	Top: 0.9 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
draining rd from south		125	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Concrete Pipe	Top: 1 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
draining road from north		125	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Concrete Pipe	Top: 0.75 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
left bank- also tributary that will start next reach		127	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Concrete Pipe	Top: 0.75 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
right bank		127	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Concrete Pipe	Top: 0.5 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
right bank		128	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL15	Plastic Pipe	Top: 1 Bottom: Deep:	
NOTES:		LOCATION/GPS #	
draining road		130	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	10		
	Recreational:	0	Commercial Industrial:	0		
	Residential:	90	Other	0		
	Other Description:					
VEGETATION %	Forest:	30	Lawn/Grass:	40	Wetlands:	0
	Crops:	0	Shrub/Weeds:	30	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER:	30
COMMENTS (Riparian Corridor/Floodplain):	

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel: 5	Sand: 10	Cobble: 65	Silt: 10
	Concrete: 0	Organic Matter: 0	Boulder: 5	Claypan: 5
SUBSTRATE STABILITY OF ENTIRE CHANNEL:	High			
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Low			
FILAMENTOUS ALGAE:	Low			
GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:			
<input checked="" type="checkbox"/>	<input type="checkbox"/>			
TURBIDITY:	Moderate			
WATER COLOR:	Brown			
COMMENTS:				

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A						
HABITATS SAMPLED FOR INVERTEBRATES:	N/A						
GEAR/METHODS USED FOR:	Invertebrates:	Fish:					
EFFORTS USED FOR:	Invertebrates:	Fish:					
INVERTEBRATES:							
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						
FISH:							
Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
BIRDS:							
Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Gulls/Terns:	Others:						
<input type="checkbox"/>							

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		225	drain pipe
GPS #				
111				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		229	culvert
		GPS #		
		111		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		220	culvert
		GPS #		
		108		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		221	drain pipe
		GPS #		
		108		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		222	drain pipe
		GPS #		
		109		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		223	bridge
		GPS #		
		110		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		224	drain pipe
		GPS #		
		110		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		226	open channel
		GPS #		
		111		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		227	drain pipe
		GPS #		
		111		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		228	drain pipe
		GPS #		
		111		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		228	drain pipe
		GPS #		
		111		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		230	open channel;
		GPS #		
		112		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		231	representative reach photo (downstream)
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		232	drain pipe
		GPS #		
		113		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		233	culvert
		GPS #		
		113		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		234	debris- log jam/drain pipes
		GPS #		
		114		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		235	drain pipe
GPS #				
115				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		236	debris jam
GPS #				
116				

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		237	bike path
		GPS #		
		117		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		238	culvert
		GPS #		
		118		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		239	drain pipe
		GPS #		
		119		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		240	drain pipe
		GPS #		
		119		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		241	culvert
		GPS #		
		120		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		242	open channel
			GPS #	
			121	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		243	erosion
			GPS #	
			122	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		244	drain pipe
		GPS #		
		123		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		245	culvert
		GPS #		
		124		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		246	open channel
		GPS #		
		124		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		247	drain pipe
		GPS #		
		125		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		248	drain pipe
		GPS #		
		125		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		249	bridge and armoring
		GPS #		
		126		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		250	oepr channel
		GPS #		
		127		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		251	armoring
		GPS #		
		127		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		252	drain pipe
		GPS #		
		127		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		253	drain pipe
		GPS #		
		128		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		254	culvert at Beach Rd.
		GPS #		
		129		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL15	Russell Brunner		255	drain pipe
		GPS #		
		130		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL16	DATE:	7/10/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	17				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at subdivison		for from previous reach				
UPSTREAM GPS#	133	DOWNSTREAM GPS#	130			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
350	85	09:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	3					
MEAN BANK HT (ft):	6.25	BANK HT RANGE:	from: 5.5	to: 7		
MEAN BANK SLOPE:	.54/1	BANK SLOPE RANGE:	from: .33/1	to: .75/1		
MEAN WATER DEPTH (ft):	.2	WATER DEPTH RANGE:	from: .16	to: .25		
TOP MEAN CHAN. WIDTH (ft):	18.5	TOP CHANNEL WIDTH RANGE:	from 16	to: 21		
BOTTOM MEAN CHAN. WIDTH (ft):	4.5	BOT. CHAN. WIDTH RANGE:	from 4	to: 5		
MEAN VELOCITY (ft/s):	20/140	VELOCITY RANGE:	from: 20/140	to: 20/140		
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 0	Wetland: 0		
	Trees: 20	Shrub: 80	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CANOPY (% shaded cov. of channel):	80	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W: 5.5 H: L:	MATERIAL:
BL16	Culvert		Concrete
LOCATION/GPS#	NOTES:		
133	draining retention pond of subdivison		

POINT DISCHARGE:

LAKE CO ID:	TYPE:	SIZE (ft):
BL16	Swale/Open Channel	Top: 3 Bottom: Deep:
LOCATION/GPS #	NOTES:	
131	right bank	

POINT DISCHARGE:

LAKE CO ID: BL16	TYPE: Swale/Open Channel	SIZE (ft): Top: 5 Bottom: Deep:
LOCATION/GPS # 133		
NOTES: drain ditch- next to culvert		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	40
	Recreational:	0	Commercial Industrial:	0
	Residential:	60	Other	0
	Other Description:			

VEGETATION %	Forest:	20	Lawn/Grass:	10	Wetlands:	0
	Crops:	0	Shrub/Weeds:	70	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 50

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	0	Sand:	30	Cobble:	10	Silt	40
	Concrete:	0	Organic Matter:	0	Boulder:	0	Claypan:	20

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Moderate
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	Low

GREASE/OIL IN WATER COLUMN: ☒ **GREASE/OIL IN SEDIMENT:** ☐

TURBIDITY: Low

WATER COLOR: Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						

FISH:

Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

BIRDS:

Ducks:

Geese:

Hérons:

Kingfishers:

Sandpipers/Plovers:

Gulls/Terns:

Others:

ADDITIONAL COMMENTS:**PHOTO TABLE:**

LAKE CO ID:

BL16

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

256

PHOTO DESCRIPTION:

fork/ begin reach

GPS #

130

PHOTO TABLE:

LAKE CO ID:

BL16

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

257

PHOTO DESCRIPTION:

open channel

GPS #

131

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL16	Russell Brunner		258	end of open channel
		GPS #		
		132		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL16	Russell Brunner		259	culvert/ open channel
		GPS #		
		133		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL16	Russell Brunner		260	sitting water(natural?) vs. retention pond-developers trying to move water?
		GPS #		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL17	DATE:	7/10/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	South Branch	18				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Lewis Ave.		culvert at Beach Rd.				
UPSTREAM GPS#	149	DOWNSTREAM GPS#	134			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2400	85	11:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:								
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High												
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	2							
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	2	Types/Locations of High Cases:							
		photos			photos							
SEDIMENT ACCUMULATIONS:	1											
MEAN BANK HT (ft):	2.8	BANK HT RANGE:	from:	1	to:	5						
MEAN BANK SLOPE:	.83/1	BANK SLOPE RANGE:	from:	.5/1	to:	1.3/1						
MEAN WATER DEPTH (ft):	.28	WATER DEPTH RANGE:	from:	.1	to:	.5						
TOP MEAN CHAN. WIDTH (ft):	12.3	TOP CHANNEL WIDTH RANGE:	from:	5.5	to:	18						
BOTTOM MEAN CHAN. WIDTH (ft):	6.16	BOT. CHAN. WIDTH RANGE:	from:	4.5	to:	7						
MEAN VELOCITY (ft/s):	20/160	VELOCITY RANGE:	from:	0	to:	20/160						
PREDOMINANT BANK VEG. %	None:	0	Grass:	10	Lawn:	25	Wetland:	0				
	Trees:	30	Shrub:	35	Rowcrop:	0						
PREDOMINANT TREE/SHRUB	Willows:	<input checked="" type="checkbox"/>	Box Elder:	<input type="checkbox"/>	Honeysuckle:	<input type="checkbox"/>	Buckthorn:	<input checked="" type="checkbox"/>	Hardwoods:	<input checked="" type="checkbox"/>	Other:	
CANOPY (% shaded cov. of channel):	60	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:								
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass									
COMMENTS:												
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>									
EST. MANNINGS n:	Right Overbank:		Instream:		Left Overbank:							

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	5	H:	L:	MATERIAL:
BL17	Culvert						Steel
LOCATION/GPS#	NOTES:						
134	Beach Rd./ debris- log jam						

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	6.5	H:	L:	0	MATERIAL:
BL17	Culvert							Steel
LOCATION/GPS#	NOTES:							
134	Beach Rd.							

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	4.5	H:	L:	MATERIAL:
BL17	Culvert						Steel

LOCATION/GPS# 136		NOTES:	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Bridge	SIZE (ft): W: 5 H: 5 L: 20	MATERIAL: Wood
LOCATION/GPS# 137		NOTES: recreation/open space footbridge- horse stables?	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Culvert	SIZE (ft): W: 4.5 H: L: 0	MATERIAL: Concrete
LOCATION/GPS# 138		NOTES: armoring/ golfcourse	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Bridge	SIZE (ft): W: 6 H: 2.5 L: 13	MATERIAL: Wood
LOCATION/GPS# 139		NOTES: golf course	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Culvert	SIZE (ft): W: 3 H: L:	MATERIAL: Concrete
LOCATION/GPS# 140		NOTES: golf course	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Bridge	SIZE (ft): W: 6 H: 2.5 L: 13	MATERIAL: Wood
LOCATION/GPS# 142		NOTES: golf course	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Bridge	SIZE (ft): W: 4 H: 2 L: 7.5	MATERIAL: Wood
LOCATION/GPS# 143		NOTES: residential footbridge	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Bridge	SIZE (ft): W: 3.5 H: 2.5 L: 13	MATERIAL: Wood
LOCATION/GPS# 144		NOTES: residential footbridge	
HYDRAULIC STRUCTURES:			
LAKE CO ID: BL17	TYPE: Culvert	SIZE (ft): W: 7 H: 4 L:	MATERIAL: Concrete
LOCATION/GPS# 149		NOTES: Lewis Ave.	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.75 Bottom Deep:	

NOTES: right bank		LOCATION/GPS # 135	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Swale/Open Channel	SIZE (ft): Top: 3 Bottom Deep:	
NOTES: left bank		LOCATION/GPS # 135	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Steel Pipe	SIZE (ft): Top: 1 Bottom Deep:	
NOTES: left bank		LOCATION/GPS # 137	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep:	
NOTES: left bank		LOCATION/GPS # 138	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep: 0	
NOTES: left bank		LOCATION/GPS # 139	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep: 0	
NOTES: right bank- golfcourse		LOCATION/GPS # 141	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep: 0	
NOTES: right bank- residential		LOCATION/GPS # 143	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 1.5 Bottom Deep: 0	
NOTES: right bank		LOCATION/GPS # 145	
POINT DISCHARGE:			
LAKE CO ID: BL17	TYPE: Plastic Pipe	SIZE (ft): Top: 0.25 Bottom Deep: 0	

NOTES:		LOCATION/GPS #
left bank- golf course		146
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL17	Plastic Pipe	Top: 0.25 Bottom: Deep: 0
NOTES:		LOCATION/GPS #
right bank		147
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL17	Plastic Pipe	Top: 0.25 Bottom: Deep:
NOTES:		LOCATION/GPS #
left bank		148
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL17	Steel Pipe	Top: 1.25 Bottom: Deep:
NOTES:		LOCATION/GPS #
right bank- north Lewis Rd.		149

POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL17	Concrete Pipe	Top: 0.5 Bottom: Deep:
NOTES:		LOCATION/GPS #
in culvert at Lewis Rd.		149
POINT DISCHARGE:		
LAKE CO ID:	TYPE:	SIZE (ft):
BL17	Concrete Pipe	Top: 0.5 Bottom: Deep:
NOTES:		LOCATION/GPS #
in culvert at Lewis Rd.		149

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	30		
	Recreational:	25	Commercial Industrial:	15		
	Residential:	30	Other	0		
	Other Description:					
VEGETATION %	Forest:	30	Lawn/Grass:	35	Wetlands:	0
	Crops:	0	Shrub/Weeds:	35	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 25

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION % Gravel: 25 Sand: 20 Cobble: 30 Silt: 10

Concrete: 5 Organic Matter: 5 Boulder: 5 Claypan: 0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

High

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Low

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:



GREASE/OIL IN SEDIMENT:



TURBIDITY:

Moderate

WATER COLOR:

Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:



Pools Over 28" Deep:



Macrophytes:



Logs:



COMMENTS (Instream Cover for Fish):

Overhanging Veg:



Rootwads:



Boulders:



Backwaters:



F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:



Caddisflies:



Dragonfly/Damselfly Nymphs:



Snail



Isopods:



Sowbugs:



Leeches:



Worms:



Water Pennies:



Beetles:



Other:

FISH:

Carp:



Black Bullheads:



Creek Chubs:



Green Sunfish:



Bluegill:



Largemouth Bass:



Johnny Darters:



Fathead Minnows:



Golden Shiners:



Other:

BIRDS:

Ducks:



Geese:



Hérons:



Kingfishers:



Sandpipers/Plovers:



Gulls/Terns:



Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

BL17

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

261

PHOTO DESCRIPTION:

culvert

GPS #

134

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		262	culvert (downstream)
		GPS #		
		134		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		263	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		264	armoring- right bank
		GPS #		
		135		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		265	drain pipe
		GPS #		
		135		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		266	open channel
		GPS #		
		135		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		267	culvert
		GPS #		
		136		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		268	bridge (downstream)
		GPS #		
		137		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		269	drain pipe
		GPS #		
		137		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		270	culvert
		GPS #		
		138		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		271	drain pipe
		GPS #		
		138		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		272	footbridge
		GPS #		
		139		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		273	culvert
		GPS #		
		140		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		274	pond
		GPS #		
		141		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		275	drain pipe
		GPS #		
		141		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		277	bridge
		GPS #		
		142		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		278	bridge/ drain pipe
		GPS #		
		143		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		279	bridge
		GPS #		
		144		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		280	drain pipe-residential
		GPS #		
		145		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		281	drain pipe/ armoring/debris
		GPS #		
		146		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		282	erosion
		GPS #		
		146		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		283	drain pipe
		GPS #		
		147		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		284	drain pipe
		GPS #		
		148		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		285	culvert/ drain pipe
		GPS #		
		149		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL17	Russell Brunner		286	drain pipe x2
		GPS #		
		149		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL18	DATE:	7/10/2001
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:	
Bull Creek(LM)	South Branch	19	
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:	
airport culvert		culverts at Lewis	
UPSTREAM GPS#	154	DOWNSTREAM GPS#	150
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:
700	85	12:00:00	RB/KK
STREAM STAGE:	RECENT RAIN:	RAIN (in):	
Low	N/A		

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High				
BANKFULL SINUOSITY:	3	BASEFLOW SINUOSITY:	3	POOL/RIFFLE DEVELOPMENT:
				1
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	0
				Types/Locations of High Cases:
SEDIMENT ACCUMULATIONS:	1			
MEAN BANK HT (ft):	2.5	BANK HT RANGE:	from: 2	to: 3
MEAN BANK SLOPE:	.375/1	BANK SLOPE RANGE:	from: .25/1	to: .5/1
MEAN WATER DEPTH (ft):	.375	WATER DEPTH RANGE:	from: .25	to: .5
TOP MEAN CHAN. WIDTH (ft):	12.5	TOP CHANNEL WIDTH RANGE:	from 10	to: 15
BOTTOM MEAN CHAN. WIDTH (ft):	6	BOT. CHAN. WIDTH RANGE:	from 5	to: 7
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 0	Wetland: 0
	Trees: 40	Shrub: 60	Rowcrop: 0	
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
				Hardwoods
				Other:
CANOPY (% shaded cov. of channel):	80	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass	
COMMENTS:				
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input type="checkbox"/>	
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:	

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	5 H:	0 L:	0	MATERIAL:
BL18	Culvert					Steel

LOCATION/GPS#	NOTES:
150	west side Lewis

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2.5 H:	0 L:	0	MATERIAL:
BL18	Culvert					Concrete

LOCATION/GPS#	NOTES:
150	draining Lewis from south

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3 H:	L:		MATERIAL:
BL18	Culvert					Concrete

LOCATION/GPS# 150	NOTES: draining Lewis from north
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL18	TYPE: Bridge
SIZE (ft): W: 3 H: 3 L: 12	MATERIAL: Wood
LOCATION/GPS# 151	NOTES: residential footbridge
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL18	TYPE: Bridge
SIZE (ft): W: 3 H: 3 L: 12	MATERIAL: Wood
LOCATION/GPS# 153	NOTES: residential footbridge
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL18	TYPE: Culvert
SIZE (ft): W: 4 H: L:	MATERIAL: Concrete
LOCATION/GPS# 154	NOTES: draining retention pond from airport

POINT DISCHARGE:	
LAKE CO ID: BL18	TYPE: Steel Pipe
SIZE (ft): Top: 0.25 Bottom: Deep:	
LOCATION/GPS # 152	NOTES: left bank
POINT DISCHARGE:	
LAKE CO ID: BL18	TYPE: Swale/Open Channel
SIZE (ft): Top: 2 Bottom: Deep:	
LOCATION/GPS # 154	NOTES: left bank

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	40
	Recreational:	0	Commercial Industrial:	10
	Residential:	50	Other:	0
	Other Description:			
VEGETATION %	Forest:	30	Lawn/Grass:	30
	Crops:	0	Shrub/Weeds:	40
	Wetlands:		Other:	0
	Other Description:			

WIDTH OF VEGETATED BUFFER:	35
COMMENTS (Riparian Corridor/Floodplain):	

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	10	Sand:	30	Cobble:	40	Silt:	20
	Concrete:	0	Organic Matter:	0	Boulder:	0	Claypan:	0
SUBSTRATE STABILITY OF ENTIRE CHANNEL:		Moderate						

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	Low
GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
<input checked="" type="checkbox"/>	<input type="checkbox"/>
TURBIDITY:	Moderate
WATER COLOR:	Brown
COMMENTS:	

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A	
HABITATS SAMPLED FOR INVERTEBRATES:	N/A	
GEAR/METHODS USED FOR:	Invertebrates:	Fish:
EFFORTS USED FOR:	Invertebrates:	Fish:
INVERTEBRATES:		
Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:
<input type="checkbox"/>	<input type="checkbox"/>	
FISH:		
Carp:	Black Bullheads:	Creek Chubs:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnny Darters:	Fathead Minnows:	Golden Shiners:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BIRDS:		
Ducks:	Geese:	Hérons:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gulls/Terns:	Others:	
<input type="checkbox"/>		
ADDITIONAL COMMENTS:		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		286	culverts at Lewis
		GPS #		
		150		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		287	culvert- right
		GPS #		
		150		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		288	culvert- left
		GPS #		
		150		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		289	bridge
		GPS #		
		151		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		290	drain pipe
		GPS #		
		152		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		291	bridge
		GPS #		
		153		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		292	culvert at airport
		GPS #		
		154		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		293	open channel
		GPS #		
		154		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL18	Russell Brunner		294	representative reach photo (downstream)
		GPS #		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL19	DATE:	7/11/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	20				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culverts at Wadsworth		fork- start north branch				
UPSTREAM GPS#	161	DOWNSTREAM GPS#	155			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
1900	75	09:30:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	4.3	BANK HT RANGE:	from: 3.5	to: 5		
MEAN BANK SLOPE:	.7/1	BANK SLOPE RANGE:	from: .3/1	to: 1/1		
MEAN WATER DEPTH (ft):	.7	WATER DEPTH RANGE:	from: .5	to: 1.1		
TOP MEAN CHAN. WIDTH (ft):	20.6	TOP CHANNEL WIDTH RANGE:	from 14	to: 28		
BOTTOM MEAN CHAN. WIDTH (ft):	9	BOT. CHAN. WIDTH RANGE:	from 7.5	to: 10.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 15	Lawn: 5	Wetland: 0		
	Trees: 40	Shrub: 30	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	75	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3.5	H:	5	L:	20	MATERIAL:
BL19	Bridge							Wood
LOCATION/GPS#	NOTES:							
156	residential footbridge/ lawned open space							

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	11	H:	8	L:		MATERIAL:
BL19	Culvert							Concrete
LOCATION/GPS#	NOTES:							
161	south side of Wadsworth							

POINT DISCHARGE:

LAKE CO ID: BL19 TYPE: Swale/Open Channel SIZE (ft): Top: 2 Bottom: Deep:

LOCATION/GPS # 158

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID: BL19 TYPE: Steel Pipe SIZE (ft): Top: 1 Bottom: Deep:

LOCATION/GPS # 159

NOTES:

right bank- open channel forms behind

POINT DISCHARGE:

LAKE CO ID: BL19 TYPE: Concrete Pipe SIZE (ft): Top: 1 Bottom: Deep:

LOCATION/GPS # 161

NOTES:

left bank- armoring/ drains Wadsworth southwest side

POINT DISCHARGE:

LAKE CO ID: BL19 TYPE: Concrete Pipe SIZE (ft): Top: 2 Bottom: Deep:

LOCATION/GPS # 161

NOTES:

under culvert Wadsworth south side

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %
Agricultural: 0 Vacant/Open Space: 30
Recreational: 0 Commercial Industrial: 0
Residential: 70 Other: 0
Other Description:

VEGETATION %
Forest: 60 Lawn/Grass: 20 Wetlands: 0
Crops: 0 Shrub/Weeds: 20 Other: 0
Other Description:

WIDTH OF VEGETATED BUFFER: 80

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %
Gravel: 20 Sand: 20 Cobble: 10 Silt: 10
Concrete: 0 Organic Matter: 0 Boulder: 0 Claypan: 40

SUBSTRATE STABILITY OF ENTIRE CHANNEL: High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL: Low
FILAMENTOUS ALGAE: N/A

GREASE/OIL IN WATER COLUMN: ☐ **GREASE/OIL IN SEDIMENT:** ☐

TURBIDITY: Low

WATER COLOR: Clear

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☒ Macrophytes: ☐ Logs: ☒ COMMENTS (Instream Cover for Fish):
Overhanging Veg: ☒ Rootwads: ☒ Boulders: ☐ Backwaters: ☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☐ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐

Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐

Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐

Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		295	fork/ begin north branch
		GPS #		
		155		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		296	bridge
		GPS #		
		156		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		297	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		298	debris- log jam
		GPS #		
		157		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		299	open channel
		GPS #		
		158		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		300	drain pipe
		GPS #		
		159		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		301	open channel- behind pipe
		GPS #		
		159		

PHOTO TABLE:

LAKE CO ID:

PHOTOGRAPHER:

ROLL #:

PHOTO #:

PHOTO DESCRIPTION:

BL19

Russell Brunner

302

erosion-left bank

GPS #

160

PHOTO TABLE:

LAKE CO ID:

PHOTOGRAPHER:

ROLL #:

PHOTO #:

PHOTO DESCRIPTION:

BL19

Russell Brunner

303

drain pipe

GPS #

161

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		304	drain pipe
		GPS #		
		161		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL19	Russell Brunner		305	culvert/ drain pipe
		GPS #		
		161		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL20	DATE:	7/11/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	21				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at bike path		culverts at Wadsworth				
UPSTREAM GPS#	182	DOWNSTREAM GPS#	162			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3600	75	12:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	4	BANK HT RANGE:	from: 2	to: 5		
MEAN BANK SLOPE:	.8/1	BANK SLOPE RANGE:	from: .5/1	to: 1/1		
MEAN WATER DEPTH (ft):	.13	WATER DEPTH RANGE:	from: 0	to: .25		
TOP MEAN CHAN. WIDTH (ft):	20.3	TOP CHANNEL WIDTH RANGE:	from: 12	to: 29.5		
BOTTOM MEAN CHAN. WIDTH (ft):	11.3	BOT. CHAN. WIDTH RANGE:	from: 9	to: 15.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 5	Lawn: 5	Wetland: 0		
	Trees: 50	Shrub: 40	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	80	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	11 H:	8 L:	MATERIAL:
BL20	Culvert				Concrete
LOCATION/GPS#	NOTES:				
162	north side Wadsworth				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	11 H:	5.5 L:	25 MATERIAL:
BL20	Bridge				Wood/Steel
LOCATION/GPS#	NOTES:				
165	residential				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	12.5 H:	7.5 L:	MATERIAL:
BL20	Culvert				Steel

LOCATION/GPS#
168

NOTES:

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 7 H: L: MATERIAL:
BL20 Culvert Steel

LOCATION/GPS#
172

NOTES:

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 4 H: L: MATERIAL:
BL20 Culvert Concrete

LOCATION/GPS#
172

NOTES:
low water/ no water

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 4 H: L: MATERIAL:
BL20 Culvert Concrete

LOCATION/GPS#
173

NOTES:
pool of water

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 6 H: 6.5 L: MATERIAL:
BL20 Culvert Concrete

LOCATION/GPS#
174

NOTES:
concrete bank- residential

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 6 H: L: MATERIAL:
BL20 Culvert Steel

LOCATION/GPS#
175

NOTES:
armoring

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 10 H: 8 L: 0 MATERIAL:
BL20 Culvert Concrete

LOCATION/GPS#
182

NOTES:
bike path

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Swale/Open Channel Top: 2 Bottom Deep:

LOCATION/GPS #
162

NOTES:
next to culver

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Swale/Open Channel Top: 3 Bottom Deep:

LOCATION/GPS #
163

NOTES:
right bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Steel Pipe Top: 3 Bottom Deep: 0

NOTES: LOCATION/GPS # 164
right bank- creating channel 2ft

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Plastic Pipe Top: 0.25 Bottom Deep:

NOTES: LOCATION/GPS # 165
left bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Concrete Pipe Top: 1 Bottom Deep:

NOTES: LOCATION/GPS # 169
over culvert

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Swale/Open Channel Top: 1 Bottom Deep:

NOTES: LOCATION/GPS # 170
left bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Swale/Open Channel Top: 1.5 Bottom Deep:

NOTES: LOCATION/GPS # 173
left bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Plastic Pipe Top: 0.5 Bottom Deep:

NOTES: LOCATION/GPS # 175
left bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Swale/Open Channel Top: 1 Bottom Deep:

NOTES: LOCATION/GPS # 176
left bank

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Plastic Pipe Top: 0.25 Bottom Deep:

NOTES: LOCATION/GPS # 177
right bank-residential armoring

POINT DISCHARGE:

LAKE CO ID: TYPE: SIZE (ft):
BL20 Concrete Pipe Top: 2 Bottom Deep:

NOTES:	LOCATION/GPS #
left bank-residential armoring	178
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL20	Swale/Open Channel
SIZE (ft):	Top: 0.5 Bottom: Deep:
NOTES:	LOCATION/GPS #
left bank	179
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL20	Swale/Open Channel
SIZE (ft):	Top: 2 Bottom: Deep:
NOTES:	LOCATION/GPS #
right bank- pipe at end	180
POINT DISCHARGE:	
LAKE CO ID:	TYPE:
BL20	Steel Pipe
SIZE (ft):	Top: 3 Bottom: Deep:
NOTES:	LOCATION/GPS #
	181

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	70		
	Recreational:	0	Commercial Industrial:	0		
	Residential:	30	Other	0		
	Other Description:					
VEGETATION %	Forest:	40	Lawn/Grass:	30	Wetlands:	0
	Crops:	0	Shrub/Weeds:	30	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 70

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	20	Sand:	10	Cobble:	30	Silt:	20
	Concrete:	5	Organic Matter:	0	Boulder:	5	Claypan:	10
SUBSTRATE STABILITY OF ENTIRE CHANNEL:				High				
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:				Low				
FILAMENTOUS ALGAE:				Low				
GREASE/OIL IN WATER COLUMN:				GREASE/OIL IN SEDIMENT:				
TURBIDITY:				High				
WATER COLOR:				Clear				
COMMENTS:								

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☒ Macrophytes: ☐ Logs: ☒ COMMENTS (Instream Cover for Fish):
Overhanging Veg: ☒ Rootwads: ☒ Boulders: ☒ Backwaters: ☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

☐

Caddisflies:

☐

Dragonfly/Damselfly Nymphs:

☒

Snail

☐

Isopods:

☐

Sowbugs:

☐

Leeches:

☐

Worms:

☐

Water Pennies:

☐

Beetles:

☐

Other:

FISH:

Carp:

☐

Black Bullheads:

☐

Creek Chubs:

☐

Green Sunfish:

☐

Bluegill:

☐

Largemouth Bass:

☐

Johnny Darters:

☐

Fathead Minnows:

☐

Golden Shiners:

☐

Other:

BIRDS:

Ducks:

☐

Geese:

☐

Hérons:

☐

Kingfishers:

☐

Sandpipers/Plovers:

☐

Gulls/Terns:

☐

Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

BL20

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

306

PHOTO DESCRIPTION:

culvert (downstream)

GPS #

162

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		307	open channel
		GPS #		
		162		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		308	open channel
		GPS #		
		163		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		309	pipe/ open channel
		GPS #		
		164		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		310	bridge
		GPS #		
		165		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		311	drain pipe
		GPS #		
		166		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		312	erosion
		GPS #		
		167		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		313	culvert/ armoring
		GPS #		
		168		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		314	drain pipe
		GPS #		
		169		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		315	open channel
		GPS #		
		170		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		316	debris (downstream)
		GPS #		
		171		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		317	culverts x2
		GPS #		
		172		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		318	culvert
		GPS #		
		173		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		319	open channel
		GPS #		
		173		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		320	culvert
		GPS #		
		174		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		321	culvert
		GPS #		
		175		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		322	drain pipe
		GPS #		
		175		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		323	open channel
		GPS #		
		176		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		324	drain pipe and armoring- right bank
		GPS #		
		177		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		325	drain pipe
		GPS #		
		178		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		326	drain pipe
		GPS #		
		179		

PHOTO TABLE:

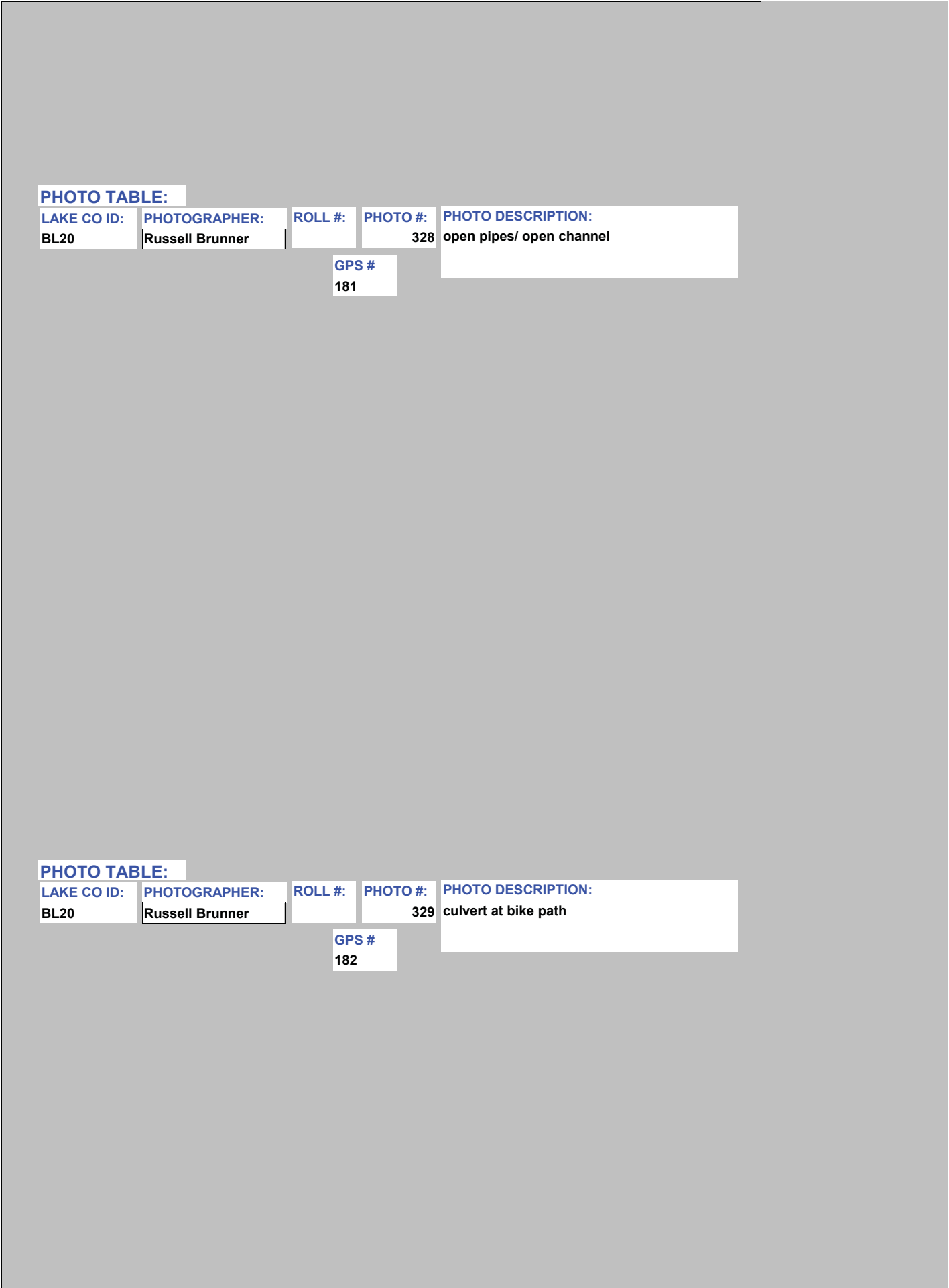
LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		327	open channel
		GPS #		
		180		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		328	open pipes/ open channel
		GPS #		
		181		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL20	Russell Brunner		329	culvert at bike path
		GPS #		
		182		





Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL21	DATE:	7/11/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	22				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at 33rd St.		culvert at bike path				
UPSTREAM GPS#	193	DOWNSTREAM GPS#	183			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3500	90	12:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	3	BASEFLOW SINUOSITY:	3	POOL/RIFFLE DEVELOPMENT:	0	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
		photos				
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	1.5	BANK HT RANGE:	from: 1.5	to: 1.5		
MEAN BANK SLOPE:	.5/1	BANK SLOPE RANGE:	from: .5/1	to: .5/1		
MEAN WATER DEPTH (ft):	0	WATER DEPTH RANGE:	from: 0	to: 0		
TOP MEAN CHAN. WIDTH (ft):	12	TOP CHANNEL WIDTH RANGE:	from: 9.5	to: 14.5		
BOTTOM MEAN CHAN. WIDTH (ft):	6.25	BOT. CHAN. WIDTH RANGE:	from: 4.5	to: 8		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 10	Wetland: 0		
	Trees: 40	Shrub: 30	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	0	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	10	H:	8	L:	0	MATERIAL:
BL21	Culvert							Concrete
LOCATION/GPS#	NOTES:							
183	west end of bike path culvert							

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2	H:	3	L:	14	MATERIAL:
BL21	Bridge							Wood
LOCATION/GPS#	NOTES:							
188	residential							

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5	H:		L:		MATERIAL:
BL21	Culvert							Concrete

LOCATION/GPS#

193

NOTES:

south side 33rd St.

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.75 Bottom Deep:

LOCATION/GPS #

184

NOTES:

forms open channel

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom Deep:

LOCATION/GPS #

185

NOTES:

right bank

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 3 Bottom Deep:

LOCATION/GPS #

186

NOTES:

left bank- 1 ft pipe acting as culvert

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.5 Bottom Deep:

LOCATION/GPS #

187

NOTES:

right bank

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom Deep:

LOCATION/GPS #

191

NOTES:

left bank

POINT DISCHARGE:

LAKE CO ID:

BL21

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom Deep:

LOCATION/GPS #

192

NOTES:

left bank

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %

Agricultural:

0

Vacant/Open Space:

70

Recreational:

0

Commercial Industrial:

0

Residential:

30

Other

0

Other Description:

VEGETATION %

Forest:

40

Lawn/Grass:

20

Wetlands:

0

Crops:

0

Shrub/Weeds:

40

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER: 80

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION % Gravel: 20 Sand: 20 Cobble: 30 Silt: 10
Concrete: 0 Organic Matter: 0 Boulder: 10 Claypan: 10

SUBSTRATE STABILITY OF ENTIRE CHANNEL: High
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL: Low
FILAMENTOUS ALGAE: Low

GREASE/OIL IN WATER COLUMN: GREASE/OIL IN SEDIMENT:

TURBIDITY: Low

WATER COLOR: Brown COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: Pools Over 28" Deep: Macrophytes: Logs: COMMENTS (Instream Cover for Fish):
☒ ☐ ☐ ☒
Overhanging Veg: Rootwads: Boulders: Backwaters:
☒ ☒ ☒ ☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: Caddisflies: Dragonfly/Damselfly Nymphs: Snail Isopods: Sowbugs: Leeches: Worms:
Water Pennies: Beetles: Other:

FISH:

Carp: Black Bullheads: Creek Chubs: Green Sunfish: Bluegill: Largemouth Bass:
Johnny Darters: Fathead Minnows: Golden Shiners: Other:

BIRDS:

Ducks: Geese: Herons: Kingfishers: Sandpipers/Plovers:
Gulls/Terns: Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID: BL21 PHOTOGRAPHER: Russell Brunner ROLL #: PHOTO #: 330 PHOTO DESCRIPTION: culverts at bike path, north of Wadsworth

GPS #
183

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		331	open channel/ drain pipe
		GPS #		
		184		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		332	plastic pipe
		GPS #		
		185		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		334	open channel with culvert?
		GPS #		
		186		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		335	drain pipe
		GPS #		
		187		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		336	bridge
		GPS #		
		188		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		337	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		338	debris
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		339	armoring
		GPS #		
		190		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		340	drain pipe x2
		GPS #		
		191		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		341	drain pipe
		GPS #		
		192		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL21	Russell Brunner		342	culvert
		GPS #		
		193		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL22	DATE:	7/12/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	23				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at Lewis		culvert at 33rd St.				
UPSTREAM GPS#	198	DOWNSTREAM GPS#	194			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
1200	75	10:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	3	BANK HT RANGE:	from: 1	to: 5.5		
MEAN BANK SLOPE:	.5/1	BANK SLOPE RANGE:	from: .25/1	to: .75/1		
MEAN WATER DEPTH (ft):	.16	WATER DEPTH RANGE:	from: 0	to: .5		
TOP MEAN CHAN. WIDTH (ft):	9.5	TOP CHANNEL WIDTH RANGE:	from 5	to: 14.5		
BOTTOM MEAN CHAN. WIDTH (ft):	3.5	BOT. CHAN. WIDTH RANGE:	from 1.5	to: 5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 30	Lawn: 0	Wetland: 10		
	Trees: 40	Shrub: 20	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	60	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input checked="" type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7.5 H:	0 L:	MATERIAL:
BL22	Culvert				Concrete

LOCATION/GPS#	NOTES:
194	north side of 33rd St.

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7 H:	L:	MATERIAL:
BL22	Culvert				Concrete

LOCATION/GPS#	NOTES:
195	east side of Lebanon

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	7 H:	L:	MATERIAL:
BL22	Culvert				Concrete

LOCATION/GPS# 195	NOTES: west side of Lebanon
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL22	TYPE: Culvert
SIZE (ft): W: 8 H: L:	MATERIAL: Concrete
LOCATION/GPS# 198	NOTES: east side of Lewis

POINT DISCHARGE:	
LAKE CO ID: BL22	TYPE: Plastic Pipe
SIZE (ft): Top: 1 Bottom: Deep:	
LOCATION/GPS # 197	NOTES: right bank- commercial

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural: 0	Vacant/Open Space: 60
	Recreational: 0	Commercial Industrial: 5
	Residential: 35	Other: 0
	Other Description:	

VEGETATION %	Forest: 20	Lawn/Grass: 30	Wetlands: 30
	Crops: 0	Shrub/Weeds: 20	Other: 0
	Other Description:		

WIDTH OF VEGETATED BUFFER:	65
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COMMENTS (Riparian Corridor/Floodplain):	
--	--

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel: 20	Sand: 5	Cobble: 40	Silt: 30
	Concrete: 0	Organic Matter: 0	Boulder: 5	Claypan: 0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Moderate
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
<input type="checkbox"/>	<input type="checkbox"/>

TURBIDITY:	Low
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WATER COLOR: Clear	COMMENTS:
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E. INSTREAM COVER FOR FISH

Undercut Banks: <input type="checkbox"/>	Pools Over 28" Deep: <input type="checkbox"/>	Macrophytes: <input type="checkbox"/>	Logs: <input checked="" type="checkbox"/>	COMMENTS (Instream Cover for Fish):
Overhanging Veg: <input checked="" type="checkbox"/>	Rootwads: <input type="checkbox"/>	Boulders: <input checked="" type="checkbox"/>	Backwaters: <input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:	N/A	
HABITATS SAMPLED FOR INVERTEBRATES:	N/A	
GEAR/METHODS USED FOR:	Invertebrates:	Fish:
EFFORTS USED FOR:	Invertebrates:	Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☐ Snail ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐
Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐
Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐
Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:**PHOTO TABLE:**

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL22	Russell Brunner		343	culvert
		GPS #		
		194		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL22	Russell Brunner		344	culvert
		GPS #		
		195		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL22	Russell Brunner		345	culvert
		GPS #		
		195		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL22	Russell Brunner		346	debris (downstream)
		GPS #		
		196		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL22	Russell Brunner		347	drain pipe
		GPS #		
		197		

PHOTO TABLE:

LAKE CO ID:

BL22

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

348

PHOTO DESCRIPTION:

culvert

GPS #

198

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL23	DATE:	7/12/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	24				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at golf course		culvert at Lewis				
UPSTREAM GPS#	210	DOWNSTREAM GPS#	199			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
3600	75	11:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:	DEGREE OF ARMORING:	0	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	1.16	BANK HT RANGE:	from: 1	to: 1.5		
MEAN BANK SLOPE:	.7/1	BANK SLOPE RANGE:	from: .5/1	to: 1/1		
MEAN WATER DEPTH (ft):	.45	WATER DEPTH RANGE:	from: .1	to: 1		
TOP MEAN CHAN. WIDTH (ft):	4.6	TOP CHANNEL WIDTH RANGE:	from: 4	to: 5		
BOTTOM MEAN CHAN. WIDTH (ft):	2.8	BOT. CHAN. WIDTH RANGE:	from: 2	to: 3.5		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 0	Lawn: 0	Wetland: 70		
	Trees: 10	Shrub: 20	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CANOPY (% shaded cov. of channel):	50	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	8 H:	L:	MATERIAL:
BL23	Culvert				Concrete
LOCATION/GPS#	NOTES:				
199	west side of Lewis				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	10 H:	3 L:	120	MATERIAL:
BL23	Bridge					Wood
LOCATION/GPS#	NOTES:					
201	golf course bridge					

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	3.5 H:	3 L:	80	MATERIAL:
BL23	Bridge					Wood

LOCATION/GPS# 202	NOTES: golf course footbridge
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL23	TYPE: Culvert
SIZE (ft): W: 1 H: L:	MATERIAL: Plastic
LOCATION/GPS# 204	NOTES: right bank- golf course retention pond
HYDRAULIC STRUCTURES:	
LAKE CO ID: BL23	TYPE: Culvert
SIZE (ft): W: 4 H: L:	MATERIAL: Concrete
LOCATION/GPS# 210	NOTES: end at golf course- wetland

POINT DISCHARGE:	
LAKE CO ID: BL23	TYPE: Swale/Open Channel
SIZE (ft): Top: 2 Bottom: Deep:	LOCATION/GPS # 200
NOTES: right bank- two small forks	
POINT DISCHARGE:	
LAKE CO ID: BL23	TYPE: Swale/Open Channel
SIZE (ft): Top: 1 Bottom: Deep:	LOCATION/GPS # 203
NOTES: left bank	
POINT DISCHARGE:	
LAKE CO ID: BL23	TYPE: Plastic Pipe
SIZE (ft): Top: 0.25 Bottom: Deep:	LOCATION/GPS # 205
NOTES: left bank	
POINT DISCHARGE:	
LAKE CO ID: BL23	TYPE: Swale/Open Channel
SIZE (ft): Top: 2 Bottom: Deep:	LOCATION/GPS # 205
NOTES: left bank	
POINT DISCHARGE:	
LAKE CO ID: BL23	TYPE: Swale/Open Channel
SIZE (ft): Top: 1 Bottom: Deep:	LOCATION/GPS # 208
NOTES: left bank	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN				
DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	0
	Recreational:	100	Commercial Industrial:	0
	Residential:	0	Other	0

Other Description:

VEGETATION %

Forest:

10

Lawn/Grass:

10

Wetlands:

50

Crops:

0

Shrub/Weeds:

30

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER:

100

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %

Gravel:

20

Sand:

10

Cobble:

20

Silt:

40

Concrete:

0

Organic Matter:

0

Boulder:

0

Claypan:

10

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Moderate

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Moderate

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:

☐

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY:

Low

WATER COLOR:

Clear

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:

☐

Pools Over 28" Deep:

☐

Macrophytes:

☐

Logs:

☒

COMMENTS (Instream Cover for Fish):

Overhanging Veg:

☒

Rootwads:

☒

Boulders:

☐

Backwaters:

☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

☐

Caddisflies:

☐

Dragonfly/Damselfly Nymphs:

☐

Snail:

☐

Isopods:

☐

Sowbugs:

☐

Leeches:

☐

Worms:

☐

Water Pennies:

☐

Beetles:

☐

Other:

FISH:

Carp:

☐

Black Bullheads:

☐

Creek Chubs:

☐

Green Sunfish:

☐

Bluegill:

☐

Largemouth Bass:

☐

Johnny Darters:

☐

Fathead Minnows:

☐

Golden Shiners:

☐

Other:

BIRDS:

Ducks:

☐

Geese:

☐

Hérons:

☐

Kingfishers:

☐

Sandpipers/Plovers:

☐

Gulls/Terns:

☐

Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		349	culvert
		GPS #		
		199		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		350	open channel
		GPS #		
		200		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		351	bridge
		GPS #		
		201		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		352	bridge
		GPS #		
		202		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		353	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		354	open channel
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		355	culvert
		GPS #		
		204		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		356	drain pipe/ open channel
		GPS #		
		205		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		357	bridge
		GPS #		
		206		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		358	bridge
		GPS #		
		207		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		359	open channel
		GPS #		
		208		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		360	bridge
		GPS #		
		209		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL23	Russell Brunner		361	culvert
		GPS #		
		210		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL24	DATE:	7/12/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	North Branch	25				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
end of channel vegetated		south fork from previous reach				
UPSTREAM GPS#	218	DOWNSTREAM GPS#	211			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	85	14:00:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	1	BASEFLOW SINUOSITY:	1	POOL/RIFFLE DEVELOPMENT:	1	
DEGREE OF BANK EROSION:	1	Types/Locations of High Cases:		DEGREE OF ARMORING:	0	Types/Locations of High Cases:
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	2	BANK HT RANGE:	from: 1.5	to: 2.5		
MEAN BANK SLOPE:	.7/1	BANK SLOPE RANGE:	from: .5/1	to: .8/1		
MEAN WATER DEPTH (ft):	.05	WATER DEPTH RANGE:	from: 0	to: .15		
TOP MEAN CHAN. WIDTH (ft):	6.3	TOP CHANNEL WIDTH RANGE:	from: 5	to: 8.5		
BOTTOM MEAN CHAN. WIDTH (ft):	3.16	BOT. CHAN. WIDTH RANGE:	from: 2.5	to: 4		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 10	Wetland: 20		
	Trees: 10	Shrub: 40	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CANOPY (% shaded cov. of channel):	40	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2.5	H:	L:	MATERIAL:
BL24	Culvert					Concrete

LOCATION/GPS#	NOTES:
212	under dirt road

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2.5	H:	L:	MATERIAL:
BL24	Culvert				0	Concrete

LOCATION/GPS#	NOTES:
212	under dirt road

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	2.5	H:	L:	MATERIAL:
BL24	Culvert					Concrete

LOCATION/GPS#

212

NOTES:

under dirt road

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL24

TYPE:

Culvert

SIZE (ft):

W:

2 H:

L:

0

MATERIAL:

Steel

LOCATION/GPS#

213

NOTES:

under dirt road

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL24

TYPE:

Bridge

SIZE (ft):

W:

4 H:

2 L:

11

MATERIAL:

Wood

LOCATION/GPS#

214

NOTES:

residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL24

TYPE:

Culvert

SIZE (ft):

W:

6 H:

L:

MATERIAL:

Concrete

LOCATION/GPS#

215

NOTES:

west side of Lewis

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL24

TYPE:

Culvert

SIZE (ft):

W:

1.5 H:

0 L:

0

MATERIAL:

Concrete

LOCATION/GPS#

216

NOTES:

into junk yard

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL24

TYPE:

Culvert

SIZE (ft):

W:

1.5 H:

0 L:

0

MATERIAL:

Concrete

LOCATION/GPS#

217

NOTES:

through junk yard

POINT DISCHARGE:

LAKE CO ID:

BL24

TYPE:

Plastic Pipe

SIZE (ft):

Top:

0.5 Bottom

Deep:

LOCATION/GPS #

216

NOTES:

left of culvert

POINT DISCHARGE:

LAKE CO ID:

BL24

TYPE:

Concrete Pipe

SIZE (ft):

Top:

0.5 Bottom

Deep:

LOCATION/GPS #

216

NOTES:

right of culvert

SUSPICIOUS ACTIVITIES:**C. RIPARIAN CORRIDOR/FLOODPLAIN**

DOMINANT LAND USE %

Agricultural:

0

Vacant/Open Space:

40

Recreational:

0

Commercial Industrial:

20

Residential:

40

Other

0

Other Description:

VEGETATION %

Forest:

10

Lawn/Grass:

30

Wetlands:

20

Crops:

0

Shrub/Weeds:

40

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER:

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION % Gravel: Sand: Cobble: Silt:

Concrete: Organic Matter: Boulder: Claypan:

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

FILAMENTOUS ALGAE:

GREASE/OIL IN WATER COLUMN: GREASE/OIL IN SEDIMENT:

TURBIDITY:

WATER COLOR: COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks: ☒ Pools Over 28" Deep: ☐ Macrophytes: ☐ Logs: ☒ COMMENTS (Instream Cover for Fish):

Overhanging Veg: ☒ Rootwads: ☒ Boulders: ☒ Backwaters: ☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

HABITATS SAMPLED FOR INVERTEBRATES:

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies: ☐ Caddisflies: ☐ Dragonfly/Damselfly Nymphs: ☐ Snail: ☐ Isopods: ☐ Sowbugs: ☐ Leeches: ☐ Worms: ☐

Water Pennies: ☐ Beetles: ☐ Other:

FISH:

Carp: ☐ Black Bullheads: ☐ Creek Chubs: ☐ Green Sunfish: ☐ Bluegill: ☐ Largemouth Bass: ☐

Johnny Darters: ☐ Fathead Minnows: ☐ Golden Shiners: ☐ Other:

BIRDS:

Ducks: ☐ Geese: ☐ Herons: ☐ Kingfishers: ☐ Sandpipers/Plovers: ☐

Gulls/Terns: ☐ Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		362	south branch of fork
		GPS #		
		211		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		363	culverts x 3
		GPS #		
		212		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		364	culvert
			GPS #	
			213	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		365	representative reach photo
			GPS #	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		366	bridge
		GPS #		
		214		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		367	culvert
		GPS #		
		215		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		368	culvert and drain pipes
		GPS #		
		216		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		369	drain pipe and debris (tires)
		GPS #		
		217		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL24	Russell Brunner		370	vegetation- end reach
		GPS #		
		218		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL25	DATE:	7/13/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	27th St. Trib	26				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
end channel- vegetated		north fork at Wadsworth				
UPSTREAM GPS#	227	DOWNSTREAM GPS#	220			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	90	08:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:					
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High									
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	1				
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases:		DEGREE OF ARMORING:	1	Types/Locations of High Cases:			
SEDIMENT ACCUMULATIONS:	1								
MEAN BANK HT (ft):	2.6	BANK HT RANGE:	from: 1.5	to: 4					
MEAN BANK SLOPE:	.75/1	BANK SLOPE RANGE:	from: .5/1	to: 1/1					
MEAN WATER DEPTH (ft):	.03	WATER DEPTH RANGE:	from: 0	to: .1					
TOP MEAN CHAN. WIDTH (ft):	16	TOP CHANNEL WIDTH RANGE:	from 8.5	to: 31					
BOTTOM MEAN CHAN. WIDTH (ft):	8.6	BOT. CHAN. WIDTH RANGE:	from 3	to: 17					
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0					
PREDOMINANT BANK VEG. %		None:	10	Grass:	10	Lawn:	0	Wetland:	0
		Trees:	40	Shrub:	40	Rowcrop:	0		
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
CANOPY (% shaded cov. of channel):	85	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:					
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass						
COMMENTS:									
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS ISLANDS:	<input type="checkbox"/>						
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:						

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	L:	MATERIAL:
BL25	Culvert						Steel

LOCATION/GPS#	NOTES:
224	residential street

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	L:	MATERIAL:
BL25	Culvert						Steel

LOCATION/GPS#	NOTES:
225	armoring/ residential street

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	3	H:	L:	MATERIAL:
BL25	Culvert						Steel

LOCATION/GPS# 226	NOTES: east side of Gabriel/ armoring
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POINT DISCHARGE:	
LAKE CO ID: BL25	TYPE: Swale/Open Channel
SIZE (ft): Top: 3 Bottom: Deep:	
LOCATION/GPS # 222	
NOTES: left bank	

POINT DISCHARGE:	
LAKE CO ID: BL25	TYPE: Clay Pipe
SIZE (ft): Top: 0.25 Bottom: Deep:	
LOCATION/GPS # 223	
NOTES: left bank	

POINT DISCHARGE:	
LAKE CO ID: BL25	TYPE: Swale/Open Channel
SIZE (ft): Top: 2 Bottom: Deep:	
LOCATION/GPS # 227	
NOTES: drains from south on Gabriel	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	30
	Recreational:	0	Commercial Industrial:	0
	Residential:	70	Other	0
	Other Description:			

VEGETATION %	Forest:	30	Lawn/Grass:	20	Wetlands:	10
	Crops:	0	Shrub/Weeds:	40	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 50

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	10	Sand:	20	Cobble:	30	Silt:	30
	Concrete:	0	Organic Matter:	0	Boulder:	5	Claypan:	5

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Moderate
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	N/A

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
<input type="checkbox"/>	<input type="checkbox"/>

TURBIDITY: Moderate

WATER COLOR: Brown COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

Caddisflies:

Dragonfly/Damselfly Nymphs:

Snail

Isopods:

Sowbugs:

Leeches:

Worms:

☐☐☐☐☐☐☐☐

Water Pennies:

Beetles:

Other:

☐☐**FISH:**

Carp:

Black Bullheads:

Creek Chubs:

Green Sunfish:

Bluegill:

Largemouth Bass:

☐☐☐☐☐☐

Johnny Darters:

Fathead Minnows:

Golden Shiners:

Other:

☐☐☐**BIRDS:**

Ducks:

Geese:

Hérons:

Kingfishers:

Sandpipers/Plovers:

☐☐☐☐☐

Gulls/Terns:

Others:

☐

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

PHOTOGRAPHER:

ROLL #:

PHOTO #:

PHOTO DESCRIPTION:

BL25

Russell Brunner

371

start 27th St. Trib.- fork near Wadsworth

GPS #

220

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		372	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		373	debris
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		374	open channel
		GPS #		
		222		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		375	drain pipe
		GPS #		
		223		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		376	culvert
		GPS #		
		224		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		377	culvert
		GPS #		
		225		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		378	culvert
		GPS #		
		226		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL25	Russell Brunner		379	vegetated end reach
		GPS #		
		227		



Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL26	DATE:	7/13/2001
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:	
Bull Creek(LM)	27th St. Trib	27	
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:	
culvert at 33rd St.		fork right from previous reach	
UPSTREAM GPS#	233	DOWNSTREAM GPS#	228
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:
2000	78	09:30:00	RB/KK
STREAM STAGE:	RECENT RAIN:	RAIN (in):	
Low	N/A		

A. CHANNEL CONDITIONS:

CHANNELIZATION: ☒ None: ☐ Recovering ☐ No Recov.: ☐ Pilot Channel:

NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High

BANKFULL SINUOSITY: 2 BASEFLOW SINUOSITY: 2 POOL/RIFFLE DEVELOPMENT: 1

DEGREE OF BANK EROSION: 2 Types/Locations of High Cases: photos DEGREE OF ARMORING: 2 Types/Locations of High Cases: photos

SEDIMENT ACCUMULATIONS: 2

MEAN BANK HT (ft):	4.6	BANK HT RANGE:	from: 3.5	to: 6
MEAN BANK SLOPE:	.9/1	BANK SLOPE RANGE:	from: .75/1	to: 1/1
MEAN WATER DEPTH (ft):	.66	WATER DEPTH RANGE:	from: .25	to: 1
TOP MEAN CHAN. WIDTH (ft):	20.3	TOP CHANNEL WIDTH RANGE:	from 17	to: 24
BOTTOM MEAN CHAN. WIDTH (ft):	12.1	BOT. CHAN. WIDTH RANGE:	from 9.5	to: 14.5
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0
PREDOMINANT BANK VEG. %	None: 20	Grass: 10	Lawn: 0	Wetland: 0
	Trees: 40	Shrub: 30	Rowcrop: 0	

PREDOMINANT TREE/SHRUB ☐ Willows ☐ Box Elder ☐ Honeysuckle ☒ Buckthorn ☒ Hardwoods ☐ Other:

CANOPY (% shaded cov. of channel): 70 BEAVER ACTIVITY: ☐ # OF DAMS: ☐

INSTREAM DEBRIS LOAD: Pass OVERBANK DEBRIS LOAD: Pass

COMMENTS:

IMPOUNDED: ☐ MID-STREAM BARS .ISLANDS: ☒

EST. MANNINGS n: Right Overbank: Instream: Left Overbank:

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 5 H: L: 30 MATERIAL: BL26 Bridge Wood

LOCATION/GPS# 230 NOTES: fallen residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 4 H: 3 L: 20 MATERIAL: BL26 Bridge Wood

LOCATION/GPS# 231 NOTES: residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE: SIZE (ft): W: 4 H: 4 L: 12 MATERIAL: BL26 Bridge Wood

LOCATION/GPS#

231

NOTES:

residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL26

TYPE:

Bridge

SIZE (ft): W:

4

H:

4

L:

12

MATERIAL:

Wood

LOCATION/GPS#

231

NOTES:

residential footbridge

HYDRAULIC STRUCTURES:

LAKE CO ID:

BL26

TYPE:

Culvert

SIZE (ft): W:

6.5

H:

7

L:

0

MATERIAL:

Concrete

LOCATION/GPS#

233

NOTES:

south side of 33rd St.

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.25 Bottom

Deep:

LOCATION/GPS #

230

NOTES:

right bank residential

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Plastic Pipe

SIZE (ft):

Top: 1.25 Bottom

Deep:

LOCATION/GPS #

230

NOTES:

right bank residential

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Plastic Pipe

SIZE (ft):

Top: 0.5 Bottom

Deep:

LOCATION/GPS #

231

NOTES:

left bank residential

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Concrete Pipe

SIZE (ft):

Top: 0.75 Bottom

Deep:

LOCATION/GPS #

231

NOTES:

left bank residential

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 1.5 Bottom

Deep:

LOCATION/GPS #

232

NOTES:

left bank residential

POINT DISCHARGE:

LAKE CO ID:

BL26

TYPE:

Swale/Open Channel

SIZE (ft):

Top: 1.5 Bottom

Deep:

LOCATION/GPS #

233

NOTES:

right bank- draining 33rd St. from west

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	30
	Recreational:	0	Commercial Industrial:	0
	Residential:	70	Other:	0
	Other Description:			

VEGETATION %	Forest:	50	Lawn/Grass:	20	Wetlands:	0
	Crops:	0	Shrub/Weeds:	30	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 60

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	20	Sand:	20	Cobble:	40	Silt:	5
	Concrete:	0	Organic Matter:	0	Boulder:	5	Claypan:	10

SUBSTRATE STABILITY OF ENTIRE CHANNEL:	Moderate
SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:	Moderate
FILAMENTOUS ALGAE:	Low

GREASE/OIL IN WATER COLUMN:	GREASE/OIL IN SEDIMENT:
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TURBIDITY: Moderate

WATER COLOR: Brown COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:	Pools Over 28" Deep:	Macrophytes:	Logs:	COMMENTS (Instream Cover for Fish):
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging Veg:	Rootwads:	Boulders:	Backwaters:	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH: N/A

HABITATS SAMPLED FOR INVERTEBRATES: N/A

GEAR/METHODS USED FOR: Invertebrates: Fish:

EFFORTS USED FOR: Invertebrates: Fish:

INVERTEBRATES:

Mayflies:	Caddisflies:	Dragonfly/Damselfly Nymphs:	Snail	Isopods:	Sowbugs:	Leeches:	Worms:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Pennies:	Beetles:	Other:					
<input type="checkbox"/>	<input type="checkbox"/>						

FISH:

Carp:	Black Bullheads:	Creek Chubs:	Green Sunfish:	Bluegill:	Largemouth Bass:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnny Darters:	Fathead Minnows:	Golden Shiners:	Other:		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

BIRDS:

Ducks:	Geese:	Hérons:	Kingfishers:	Sandpipers/Plovers:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gulls/Terns:	Others:			
<input type="checkbox"/>				

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		381	fork at beginning of reach
		GPS #		
		228		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		382	residential use of vegetation as armoring
		GPS #		
		229		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		383	armoring
		GPS #		
		229		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		384	bridge
		GPS #		
		230		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		385	drain pipes
		GPS #		
		230		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		386	bridge
		GPS #		
		231		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		387	bridges x2
		GPS #		
		231		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		388	drain pipe
		GPS #		
		231		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner			
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		390	erosion
		GPS #		
		232		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		391	open channel
		GPS #		
		232		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		392	open channel
		GPS #		
		233		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL26	Russell Brunner		393	culvert at 33rd street
		GPS #		
		233		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL27	DATE:	7/13/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	27th St. Trib	28				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert at 31st St.		culverts at 33rd St.				
UPSTREAM GPS#	245	DOWNSTREAM GPS#	234			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2000	80	01:30:00	RB/KK	Low	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering:	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	3	Types/Locations of High Cases:	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
		see photos				
SEDIMENT ACCUMULATIONS:	1					
MEAN BANK HT (ft):	4.125	BANK HT RANGE:	from: 2	to: 8		
MEAN BANK SLOPE:	.65/1	BANK SLOPE RANGE:	from: .3/1	to: 1/1		
MEAN WATER DEPTH (ft):	.45	WATER DEPTH RANGE:	from: .1	to: .75		
TOP MEAN CHAN. WIDTH (ft):	17.5	TOP CHANNEL WIDTH RANGE:	from 15.5	to: 21		
BOTTOM MEAN CHAN. WIDTH (ft):	11.8	BOT. CHAN. WIDTH RANGE:	from 9.5	to: 16		
MEAN VELOCITY (ft/s):	0	VELOCITY RANGE:	from: 0	to: 0		
PREDOMINANT BANK VEG. %	None: 35	Grass: 10	Lawn: 0	Wetland: 0		
	Trees: 35	Shrub: 20	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CANOPY (% shaded cov. of channel):	75	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Fail	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS .ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6.5 H:	7 L:	MATERIAL:
BL27	Culvert				Concrete
LOCATION/GPS#	NOTES:				
234	north side of 33rd St.				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	4 L:	23 MATERIAL:
BL27	Bridge				Wood
LOCATION/GPS#	NOTES:				
243	residential- debris under bridge				

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft): W:	6 H:	7 L:	MATERIAL:
BL27	Culvert				Concrete

LOCATION/GPS# 245	NOTES: steam continues underground	
----------------------	---------------------------------------	--

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Concrete Pipe	SIZE (ft): Top: 1 Bottom: Deep: 0
LOCATION/GPS # 235		
NOTES: left bank- erosion		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Concrete Pipe	SIZE (ft): Top: 0.75 Bottom: Deep: 0
LOCATION/GPS # 236		
NOTES: right bank		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Swale/Open Channel	SIZE (ft): Top: 3 Bottom: Deep:
LOCATION/GPS # 240		
NOTES: right bank- backwaters		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Concrete Pipe	SIZE (ft): Top: 3 Bottom: Deep:
LOCATION/GPS # 241		
NOTES: left bank- sewer drain		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Swale/Open Channel	SIZE (ft): Top: 1.5 Bottom: Deep:
LOCATION/GPS # 242		
NOTES: right bank		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Concrete Pipe	SIZE (ft): Top: 0.75 Bottom: Deep: 0
LOCATION/GPS # 242		
NOTES: right bank- makes open channel		

POINT DISCHARGE:		
LAKE CO ID: BL27	TYPE: Concrete Pipe	SIZE (ft): Top: 1 Bottom: Deep:
LOCATION/GPS # 245		
NOTES: in culvert		

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN					
DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	70	
	Recreational:	0	Commercial Industrial:	0	
	Residential:	30	Other	0	

Other Description:

VEGETATION %

Forest:

40

Lawn/Grass:

30

Wetlands:

0

Crops:

0

Shrub/Weeds:

30

Other:

0

Other Description:

WIDTH OF VEGETATED BUFFER:

100

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %

Gravel:

30

Sand:

20

Cobble:

20

Silt:

20

Concrete:

5

Organic Matter:

0

Boulder:

5

Claypan:

0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

High

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

Low

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:

☒

GREASE/OIL IN SEDIMENT:

☐

TURBIDITY:

Moderate

WATER COLOR:

Brown

COMMENTS:

E. INSTREAM COVER FOR FISH

Undercut Banks:

☒

Pools Over 28" Deep:

☒

Macrophytes:

☐

Logs:

☒

COMMENTS (Instream Cover for Fish):

Overhanging Veg:

☐

Rootwads:

☒

Boulders:

☒

Backwaters:

☐

F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:

☐

Caddisflies:

☐

Dragonfly/Damselfly Nymphs:

☐

Snail:

☐

Isopods:

☐

Sowbugs:

☐

Leeches:

☐

Worms:

☐

Water Pennies:

☐

Beetles:

☐

Other:

FISH:

Carp:

☐

Black Bullheads:

☐

Creek Chubs:

☐

Green Sunfish:

☐

Bluegill:

☐

Largemouth Bass:

☐

Johnny Darters:

☐

Fathead Minnows:

☐

Golden Shiners:

☐

Other:

BIRDS:

Ducks:

☐

Geese:

☐

Hérons:

☐

Kingfishers:

☐

Sandpipers/Plovers:

☐

Gulls/Terns:

☐

Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		393	culvert at 33rd St.
			GPS #	
			234	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		394	drain pipe
			GPS #	
			235	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		395	drain pipe
		GPS #		
		236		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		396	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		397	debris (downstream)
		GPS #		
		237		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		398	erosion- left bank
		GPS #		
		238		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		399	debris
		GPS #		
		239		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		400	open channel
		GPS #		
		240		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		401	drain pipe
		GPS #		
		241		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		402	open channel
		GPS #		
		242		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		403	drain pipe
		GPS #		
		242		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		404	bridge
		GPS #		
		243		

PHOTO TABLE:

LAKE CO ID:

PHOTOGRAPHER:

ROLL #:

PHOTO #:

PHOTO DESCRIPTION:

BL27

Russell Brunner

405

erosion- left bank/ debris

GPS #

244

PHOTO TABLE:

LAKE CO ID:

PHOTOGRAPHER:

ROLL #:

PHOTO #:

PHOTO DESCRIPTION:

BL27

Russell Brunner

406

culvert at park- city stormwater outfall

GPS #

245

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL27	Russell Brunner		407	drain pipe in culvert
		GPS #		
		245		

Bull Creek/Dead River (Lake Michigan) - Main Table

LAKE CO ID (FL):	BL28	DATE:	7/16/2001			
PRIMARY WATERSHED:	STREAM REACH NAME:	STREAM REACH #:				
Bull Creek(LM)	27th St. Trib	29				
REACH BOUNDARIES UPSTREAM:		REACH BOUNDARIES DOWNSTREAM:				
culvert- stream continues from underground		begin in wetland				
UPSTREAM GPS#	258	DOWNSTREAM GPS#	246			
LENGTH (ft):	TEMP. (F):	TIME:	INVESTIG.:	STREAM STAGE:	RECENT RAIN:	RAIN (in):
2700	90	11:00:00	RB/KK	Normal	N/A	

A. CHANNEL CONDITIONS:

CHANNELIZATION:	None:	Recovering	No Recov.:	Pilot Channel:		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
NOTE: For the next six fields: 0=None; 1=Low; 2=Moderate; 3=High						
BANKFULL SINUOSITY:	2	BASEFLOW SINUOSITY:	2	POOL/RIFFLE DEVELOPMENT:	2	
DEGREE OF BANK EROSION:	2	Types/Locations of High Cases: photos	DEGREE OF ARMORING:	1	Types/Locations of High Cases:	
SEDIMENT ACCUMULATIONS:	2					
MEAN BANK HT (ft):	1.8	BANK HT RANGE:	from: 1.5	to: 2		
MEAN BANK SLOPE:	.42/1	BANK SLOPE RANGE:	from: .25/1	to: .5/1		
MEAN WATER DEPTH (ft):	.33	WATER DEPTH RANGE:	from: .25	to: .5		
TOP MEAN CHAN. WIDTH (ft):	8.5	TOP CHANNEL WIDTH RANGE:	from 4.5	to: 14.5		
BOTTOM MEAN CHAN. WIDTH (ft):	5.1	BOT. CHAN. WIDTH RANGE:	from 3	to: 9		
MEAN VELOCITY (ft/s):	20/216	VELOCITY RANGE:	from: 0	to: 20/216		
PREDOMINANT BANK VEG. %	None: 0	Grass: 20	Lawn: 15	Wetland: 25		
	Trees: 20	Shrub: 20	Rowcrop: 0			
PREDOMINANT TREE/SHRUB	Willows	Box Elder	Honeysuckle	Buckthorn	Hardwoods	Other:
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CANOPY (% shaded cov. of channel):	40	BEAVER ACTIVITY:	<input type="checkbox"/>	# OF DAMS:		
INSTREAM DEBRIS LOAD:	Pass	OVERBANK DEBRIS LOAD:	Pass			
COMMENTS:						
IMPOUNDED:	<input type="checkbox"/>	MID-STREAM BARS _ISLANDS:	<input checked="" type="checkbox"/>			
EST. MANNINGS n:	Right Overbank:	Instream:	Left Overbank:			

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	2	H:	L:	MATERIAL:
BL28	Culvert						Steel

LOCATION/GPS#	NOTES:
253	under trail

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	2	H:	L:	MATERIAL:
BL28	Culvert						Steel

LOCATION/GPS#	NOTES:
253	under trail

HYDRAULIC STRUCTURES:

LAKE CO ID:	TYPE:	SIZE (ft):	W:	2	H:	L:	MATERIAL:
BL28	Culvert						Steel

LOCATION/GPS#
253

NOTES:
under trail

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE:
BL28 Culvert

SIZE (ft): W: 2 H: L:

MATERIAL:
Steel

LOCATION/GPS#
253

NOTES:
under trail

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE:
BL28 Culvert

SIZE (ft): W: 2 H: L:

MATERIAL:
Steel

LOCATION/GPS#
253

NOTES:
under trail

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE:
BL28 Culvert

SIZE (ft): W: 2 H: L:

MATERIAL:
Concrete

LOCATION/GPS#
255

NOTES:
at Sheridan

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE:
BL28 Culvert

SIZE (ft): W: 3 H: L:

MATERIAL:
Concrete

LOCATION/GPS#
255

NOTES:
at Sheridan

HYDRAULIC STRUCTURES:

LAKE CO ID: TYPE:
BL28 Culvert

SIZE (ft): W: 5.5 H: 5 L:

MATERIAL:
Concrete

LOCATION/GPS#
258

NOTES:
continues from underground

POINT DISCHARGE:

LAKE CO ID: TYPE:
BL28 Swale/Open Channel

SIZE (ft):
Top: 6 Bottom Deep:

LOCATION/GPS #

NOTES:

247

right bank- draining wetlands

POINT DISCHARGE:

LAKE CO ID: TYPE:
BL28 Swale/Open Channel

SIZE (ft):
Top: 2 Bottom Deep:

LOCATION/GPS #

NOTES:

248

right bank

POINT DISCHARGE:

LAKE CO ID: TYPE:
BL28 Swale/Open Channel

SIZE (ft):
Top: 1 Bottom Deep:

LOCATION/GPS #

NOTES:

250

left bank

POINT DISCHARGE:

LAKE CO ID: TYPE:
BL28 Swale/Open Channel

SIZE (ft):
Top: 0.25 Bottom Deep:

NOTES:		LOCATION/GPS #	
left bank		251	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL28	Steel Pipe	Top: 1	Bottom: Deep:
NOTES:		LOCATION/GPS #	
right bank- draining trail		252	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL28	Concrete Pipe	Top: 1	Bottom: Deep:
NOTES:		LOCATION/GPS #	
at Sheridan culvert		255	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL28	Concrete Pipe	Top: 1.5	Bottom: Deep:
NOTES:		LOCATION/GPS #	
at Sheridan culvert		255	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL28	Concrete Pipe	Top: 3	Bottom: Deep:
NOTES:		LOCATION/GPS #	
right bank		256	
POINT DISCHARGE:			
LAKE CO ID:	TYPE:	SIZE (ft):	
BL28	Concrete Pipe	Top: 1	Bottom: Deep:
NOTES:		LOCATION/GPS #	
right bank		257	

SUSPICIOUS ACTIVITIES:

C. RIPARIAN CORRIDOR/FLOODPLAIN

DOMINANT LAND USE %	Agricultural:	0	Vacant/Open Space:	50		
	Recreational:	30	Commercial Industrial:	0		
	Residential:	20	Other:	0		
	Other Description:					
VEGETATION %	Forest:	20	Lawn/Grass:	20	Wetlands:	30
	Crops:	0	Shrub/Weeds:	30	Other:	0
	Other Description:					

WIDTH OF VEGETATED BUFFER: 50

COMMENTS (Riparian Corridor/Floodplain):

D. SUBSTRATE AND WATER QUALITY

SUBSTRATE COMPOSITION %	Gravel:	5	Sand:	40	Cobble:	10	Silt:	40
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Concrete: 0 Organic Matter: 0 Boulder: 5 Claypan: 0

SUBSTRATE STABILITY OF ENTIRE CHANNEL:

Low

SUBSTRATE EMBEDDEDNESS OF ENTIRE CHANNEL:

High

FILAMENTOUS ALGAE:

Low

GREASE/OIL IN WATER COLUMN:



GREASE/OIL IN SEDIMENT:



TURBIDITY:

Low

WATER COLOR:

Brown

COMMENTS: water is clear- walking through sediment increases turbidity

E. INSTREAM COVER FOR FISH

Undercut Banks:



Pools Over 28" Deep:



Macrophytes:



Logs:



COMMENTS (Instream Cover for Fish):

Overhanging Veg:



Rootwads:



Boulders:



Backwaters:



F. AQUATIC AND TERRESTRIAL ORGANISMS

HABITATS SAMPLED FOR FISH:

N/A

HABITATS SAMPLED FOR INVERTEBRATES:

N/A

GEAR/METHODS USED FOR:

Invertebrates:

Fish:

EFFORTS USED FOR:

Invertebrates:

Fish:

INVERTEBRATES:

Mayflies:



Caddisflies:



Dragonfly/Damselfly Nymphs:



Snail



Isopods:



Sowbugs:



Leeches:



Worms:



Water Pennies:



Beetles:



Other:

FISH:

Carp:



Black Bullheads:



Creek Chubs:



Green Sunfish:



Bluegill:



Largemouth Bass:



Johnny Darters:



Fathead Minnows:



Golden Shiners:



Other:

BIRDS:

Ducks:



Geese:



Hérons:



Kingfishers:



Sandpipers/Plovers:



Gulls/Terns:



Others:

ADDITIONAL COMMENTS:

PHOTO TABLE:

LAKE CO ID:

BL28

PHOTOGRAPHER:

Russell Brunner

ROLL #:

PHOTO #:

411

PHOTO DESCRIPTION:

debris

GPS #

249

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		412	open channel
		GPS #		
		250		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		413	oeprn channel
		GPS #		
		251		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		414	drain pipe
		GPS #		
		252		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		415	culverts x5
		GPS #		
		253		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		416	culverts x5 (south end)
		GPS #		
		253		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		417	debris- log jam
		GPS #		
		254		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		418	culverts/ drain pipes at Sheridan
			GPS #	
			255	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		419	drain pipes
			GPS #	
			256	

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		420	drain pipe
		GPS #		
		257		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		421	representative reach photo
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		422	erosion
		GPS #		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		408	begin reach- wetland
		GPS #		
		246		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		409	open channel
		GPS #		
		247		

PHOTO TABLE:

LAKE CO ID:	PHOTOGRAPHER:	ROLL #:	PHOTO #:	PHOTO DESCRIPTION:
BL28	Russell Brunner		410	open channel
		GPS #		
		248		