## **APPENDIX** A



**Figure 4.** Site US51-04: Ash Creek - 15 April 2008. **A**. Looking upstream. **B**. Looking downstream. Photos by S.J. Taylor (INHS).



Figure 6. Site US51-06: Ramsey Creek - 15 April 2008. A. Looking upstream.
B. Looking downstream; note large, submerged, flat rocks.
Photos by S.J. Taylor (INHS).



**Figure 9.** Site US51-09: Kaskaskia River - 15 April 2008. **A.** Looking upstream. **B**. Looking downstream. Photos by S.J. Taylor (INHS).



Figure 12. Site US51-12: Hickory Creek - 14 April 2008. A. Looking upstream. B. Looking downstream. Photos by S.J. Taylor (INHS).



Figure 18. Site US51-18: North Fork Kaskaskia River - 14 April 2008. A. Looking upstream. B. Looking downstream. Photos by S.J. Taylor (INHS).



**Figure 22.** Site US51-22: East Fork Kaskaskia River - 22 July 2008. **A**. Looking upstream. **B**. Looking downstream. Photos by S.J. Taylor (INHS).



Figure 23. Site US51-24: Lost Creek - 14 April 2008. A. Looking upstream.B. Looking downstream. Photos by S.J. Taylor (INHS).



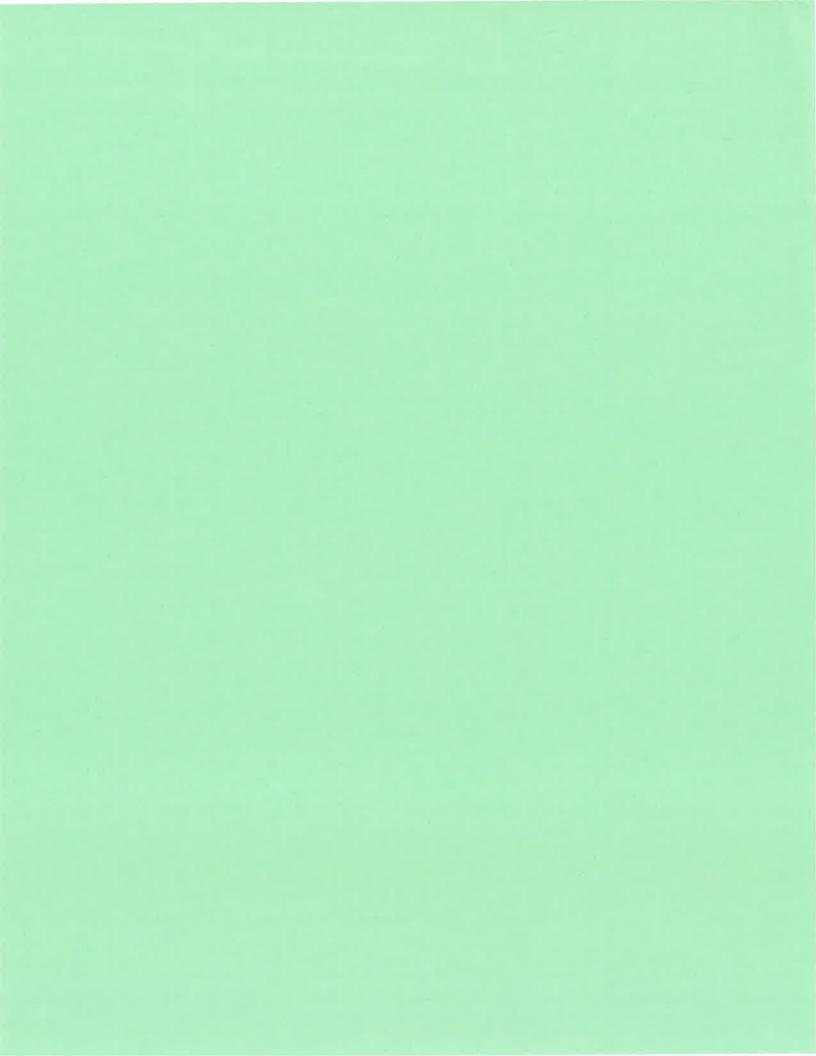
Figure 24. Site US51-25: Prairie Creek - 14 April 2008. A. Looking upstream. B. Looking downstream. Photos by S.J. Taylor (INHS).



**Figure 27.** Site US51-28: Crooked Creek - 14 April 2008. **A**. Looking upstream. **B**. Looking downstream. Photos by S.J. Taylor (INHS).



Figure 28. Site US51-29: Sewer Creek - 14 April 2008. A. Looking upstream.B. Looking downstream. Photos by S.J. Taylor (INHS).



# Appendix A. Stream Survey Locations



Figure 2. US51-42, Intermitient headwater tributary of Rabboon Creek, at county road 1700N culvert – 28 April 2009. A. Locking upstream. B. Locking downstream.



Figure 3. US51-43, unnamed tributary of Bear Creek, at farm lane crossing – 28 April 2009. A. Looking upstream. B. Looking downstream.

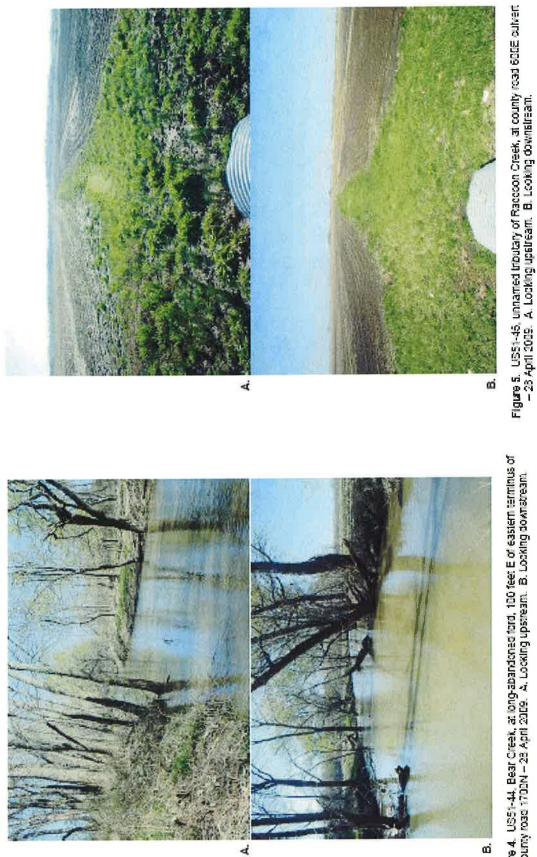


Figure 4. USSI-44. Bear Creek, at long-abandoned ford, 100 feet E of eastern terminus of county road 1700N – 28 April 2009. A. Locking upstream. B. Locking downatream.

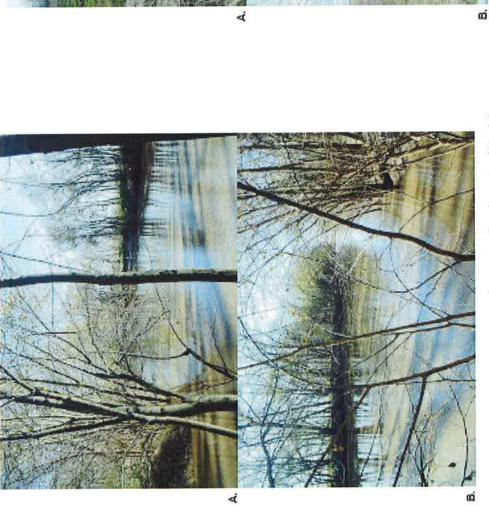






Figure 7. US51-47. Raccon Creek, at county road 1375N bridge – 28.April 2009. A. Looking upstream. B. Looking downstream.



Figure 8. US51-48. unnamed trbutary of Raccoon Creek, at county road 1375N bridge - 28 April 2009. A. Looking upstream. B. Looking downstream.



Figure 3. US51-49. Fish Lake Dran, at county road 750E – 30 June 2009. A. Looding upetream. B. Looking downstream.

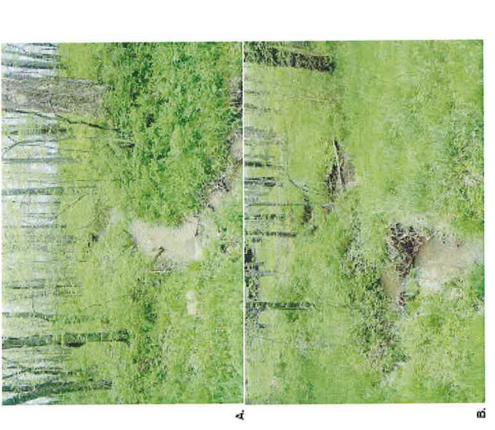
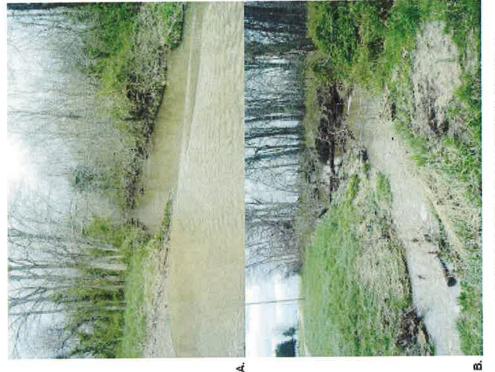


Figure 10. USS1-51, Sear Creek, at Willett Street pridge – 23 April 2019. A. Looking upersam. B. Looking downstream.



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Figure 11. USS1-51, Louse Run, at Farthing Road cement ford – 23 April 2019. A. Looding upstream (stream flowing across cement ford in foreground). B. Looding downstream.



Figure 12. USS1-53, Prarie Creek, at Barton Road bridge, 1.4 ml SW Sandoval - 28 April 2015. A. Looking upstream. B. Looking downstream.



Figure 13. USS1-53. Prairie Creek, at Barton Road bridge, 1.4 ml SW Bandoval – 29 June 2009. Looting downstream (Vr) of bridge, showing accumulation of Junk, garbage, and fish careaseses that had been dumped here.

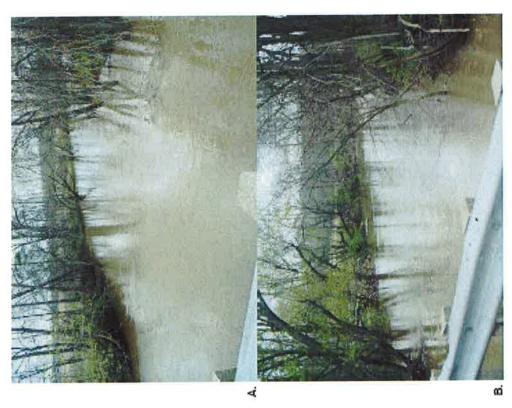


Figure 14. USS1-54, Crooked Creek, at Narton Road bridge – 28 April 2029. A. Looking upetream. B. Looking downstream.



Figure 15. Mussels collected by IHNS personnel from Sile US51-54 – Crooked Creek at Norton Road bridge, on 29 June 2009. A. Rock-pocketbook - Arciters confregosus (Say, 1829) (top left); B. Giant floaler - Pyganodon (~Anodonta) grandis (Say, 1829) (top left); B. Giant floaler - Pyganodon (~Anodonta) grandis (Say, 1829) (top left); C. White neetspitter - Lasmytona complanata (Barnes, 1823) (center); D. Rook-pocketbook - Arciters confregosus (Say, 1829) (toptom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel - Leptocea fragits (Ratinesque, 1820) (bottom left); E, Fraglie papersnel



Figure 16. USS1-55, Raccoon Creek at Green Street Road bridge – 28 April 2009. A. Looking upstream. B. Looking downstream. Foam (and odor) during our visit on this date indicative of untreated servage discinarge from sewage treatment facility, just upstream.



Figure 17. USS1-55, Raccoon Creek, actual sampling site located 300 fleet updream (SE) Green Street Road bridge – 29 June 2009. From upstream, locking downstream.



Figure 18. USS1-56. Raccoon Creet Reservor, at boat ramp in cove area on southern shoreline, northern terminus of Country Club Lane - 28 April 2009. Looking at boat ramp area (center) and open felch of late (to left).



Figure 19. USS1-57, unnamed tributary of Crooked Creek, at Joliff Erloge Road / courty road 2330E bridge – 28 Apri 2009. A. Loouing upstream. B. Looking downstream.

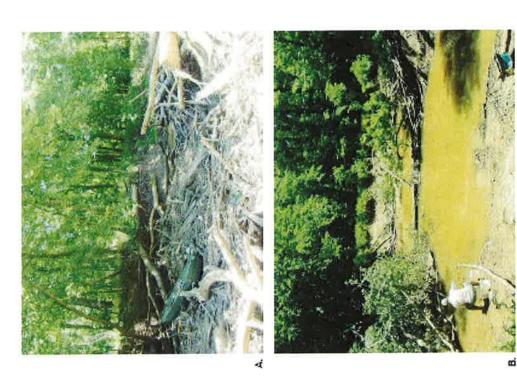


Figure 20. USS1-53, Crooked Creek, ~1,200 ft downstream (ESE) Illinois Roule 161 bridge - 29 June 2019. A. Looking upstream. B. Looking downstream.



Figure 21. US51-53, unnamed tributary of Raccoon Creek, at the Illinois Route 140 bridge - 30 June 2009. A. Locking upstream. B. Locking downstream.

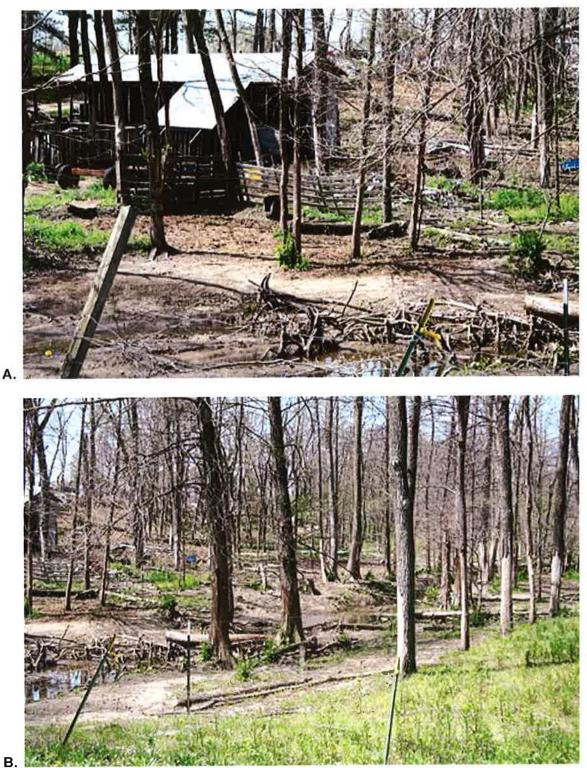
Source: Wetzel et al 2009



Site US51-63. Unnamed tributary (b) of Vandalia Lake, at county road 2100N bridge, 2.9 mi (4.6 km) WNW Vera (town). A. looking 'upstream' / north; B. looking 'downstream' / south. Photos by M.J. Wetzel, 14 April 2011.



Site US51-64. Unnamed tributary (b) of Vandalia Lake, at county road 500E culvert, 2.4 mi (3.9 km) W Vera (town). A. looking upstream / west-northwest; B. looking downstream / southeast (note patches of floating algae and scum on water surface). Photos by M.J. Wetzel, 14 April 2011. [Additional photos for this site follow...]



Site US51-64. Unnamed tributary (b) of Vandalia Lake, at county road 500E culvert, 2.4 mi (3.9 km) W Vera (town). A. looking across stream / west (in foreground) into cattle yard with a shed and corral area; B. looking upstream /west-northwest, through cattle yard (with shed and corral area at left edge of picture). Photos by M.J. Wetzel, 14 April 2011.



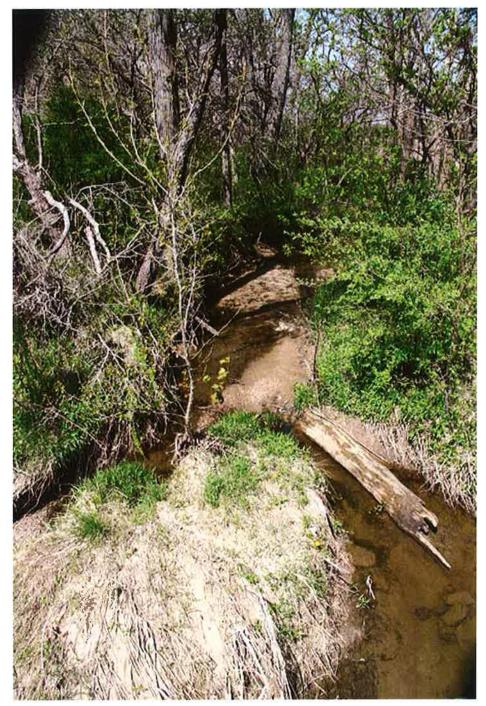
**Site US51-65.** Unnamed tributary (c) of Vandalia Lake, at county road 2000N bridge, 3.3 mi (5.3 km) W Vera (town). **A.** looking upstream / north; **B.** looking downstream / south. Photos by M.J. Wetzel, 14 April 2011.



Site US51-66. Unnamed tributary (d) of Vandalia Lake, at county road 350E culvert, 3.9 mi (6.3 km) W Vera (town).
 A. looking upstream / northwest;
 B. looking downstream / southeast. Photos by M.J. Wetzel, 14 April 2011.



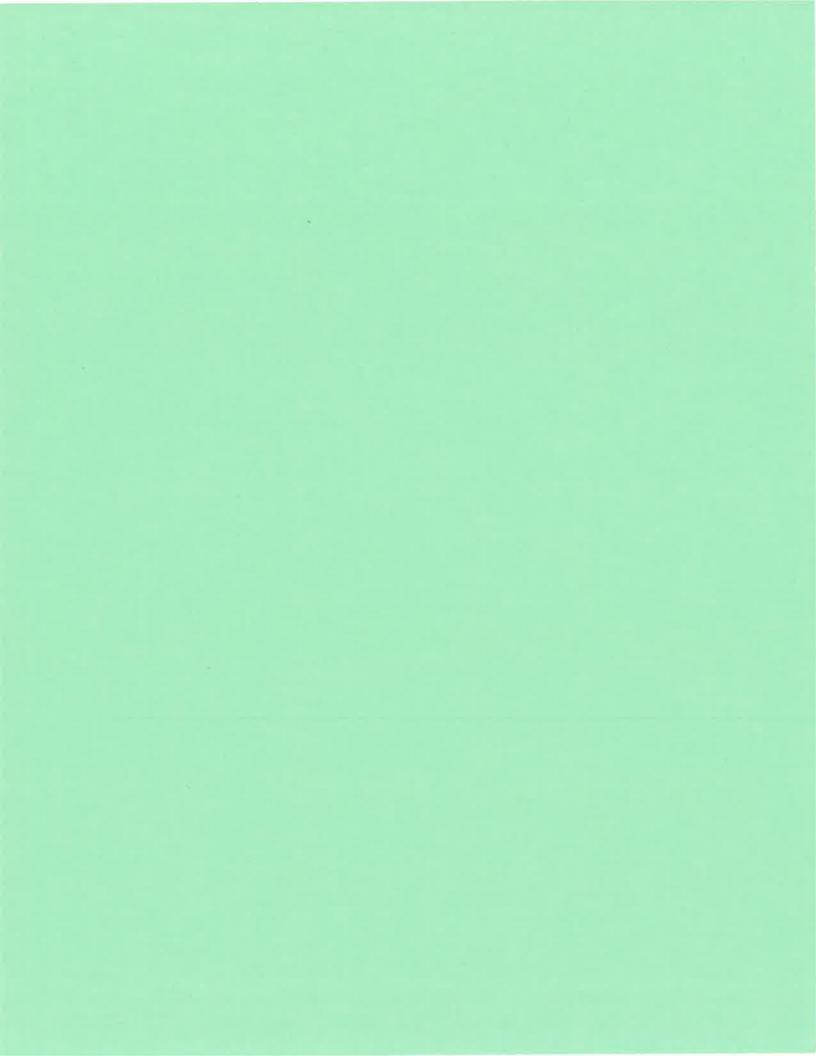
Site US51-67. Unnamed tributary (e) of Vandalia Lake, at county road 350E culvert, 4 mi (6.4 km) WSW Vera (town).
 A. looking upstream / west (septic field retention pond is located just to the foreground of the evergreen trees in left-center of this picture);
 B. looking downstream / east. Photos by M.J. Wetzel, 14 April 2011.



<u>Site US51-68.</u> Unnamed tributary (e) of Vandalia Lake, at the Illinois Route 185 box culvert, 3.7 mi (6.0 km) SW Vera (town). Looking upstream / north. Photo by M.J. Wetzel, 14 April 2011. [*a downstream photo follows...*]



<u>Site US51-68.</u> Unnamed tributary (e) of Vandalia Lake, at the Illinois Route 185 box culvert, 3.7 mi (6.0 km) SW Vera (town). Looking downstream / south. Photo by M.J. Wetzel, 14 April 2011. [*an upstream photo precedes this one*]



### Table xxxxx. Aquatic Site US51-28 (Crooked Creek)

Location: Marion County, 500 feet upstream (SE), of old U.S. Route 51 Bridge, at north edge of Centralia, II Sampling Dates: Fish (May and October 2008)

Mussels (June 17-19, 2008) Macroinvertebrates (Summer, 2008) Water Quality ( 04/21/08, 08/07/08, 09/21/08)

Mean Habitat Score: 55 (Poor)

Sample Site Photographs: Fig. 27, page A168, INHS Report, Wetzel & Phillips, (Editors), 2009

Riparian Vegetation: Trees

Stream Substrate: gravel, sand, cobble, silt

Stream Width: 55.8 feet

Stream Depth: 8.2 feet

Fish Species	Numbers	Percent of Catch	Tolerance Designation	Trophic Designation
Blackstripe Topminnow	3	1.0	M	NA
Bluegill	26	9.1	М	Gen
Bluntnose Minnow	41	14.3	Т	Gen
Brook Silversides	6	2.1	М	NA
Bullhead Minnow	42	14.6	М	Gen
Channel Catfish	1	0.4	М	NA
Common Carp	1	0.4	Т	Gen
Gizzard Shad	44	15.3	Μ	Gen
Green Sunfish	28	9.8	Т	Gen
Johnny Darter	5	1.7	Μ	SBI
Largemouth Bass	1	0.4	Μ	NA
Longear Sunfish	17	5.9	Μ	NA
Orangespotted Sunfish	8	2.8	Μ	NA
Warmouth	1	0.4	Μ	NA
Red Shiner	43	15	Т	Gen
Redfin Shiner	1	0.4	Μ	Gen
Shortnose Gar	1	0.4	Μ	NA
Slough Darter	3	1	М	SBI
Mud Darter	1	0.4	Μ	SBI
Spotted Sucker	2	0.7	Ι	Gen
Tadpole Madtom	1	0.4	Μ	SBI
Yellow Bass	6	2.1	М	NA
Yellow Bullhead	1	0.4	Т	Gen
White crappie	4	1.4	М	NA
Total Specimens	287	100.4		
Total Species	24			
Total Intolerant Species	1			
Total Illinois T&E Species	0			
to millione e transference				

#### Freshwater Mussels US51-28

Rock Pocketbook	Relic
White Heelsplitter	2
Giant floater	13
Mapleleaf	Relic
Pondhorn	7
Fragile Papershell	3
Pondmussel	3
Lilliput	1

Date sampled	06/26/08
Total number of live individuals	29
Total number of live species	6
Total number of species	8
Effort (person-hours)	2

## Aquatic Macroinvertebrates Site US51-28

Aquatic macromitertebrates site e ser 20	
Fresh Water Snails (Gastropoda)	3
Fingernail Clams (Sphaeriidae)	1
Aquatic Worms (Oligochaeta)	31
Riffle Beetles (Stenelmidae)	6
Aquatic True Bugs (Hemiptera)	1
Biting Midges (Ceratopgonidae)	2
Non-biting Midges (Chironomidae)	93
Mayflies (Caenis sp)	160
Mayflies (Heptageniidae)	7
Narrow-wing Damselflies (Coenagrionidae)	3
Dragonflies (Gomphidae et al.)	1
Asst. Minor Taxa: Mites, roundworms, cladocera	6
Total Number of Examined Specimens	314
Total Number of Taxa	19
Number of EPT Taxa	4
Number of EPT Specimens	167
Mean Taxa Richness	12.3
% of EPT Specimens	53.2
% of Oligochaete Specimens	9.9
% of Chironomid Specimens	29.6

#### Table xxxxx. Aquatic Site US51-28 (Crooked Creek)

Location: Marion County, 500 feet upstream (SE), of old U.S. Route 51 Bridge, at north edge of Centralia / Watershed: Kaskaskia River Sampling Dates: Fish (May and October 2008) Mussels (June 17-19, 2008) Macroinvertebrates (Summer, 2008) Water Quality ( 04/21/08, 07/07/08, 09/21/08) Mean Habitat Score: 55 (Poor) Sample Site Photographs: Fig. 27, page A168, INHS Report, Wetzel & Phillips, (Editors), 2009 Riparian Vegetation: Trees Stream Substrate: gravel, sand, cobble, silt

Stream Width: 55.8 feet Stream Depth: 8.2 feet

Fish Species		Numbers	Percent of Catch	Tolerance Designation	Trophic Designation
Blackstripe Topminnow	42	3	1.0	M	NA
Bluegill		26	9.1	М	Gen
Bluntnose Minnow		41	14.3	Т	Gen
Brook Silversides		6	2.1	Μ	NA
Bullhead Minnow		42	14.6	Μ	Gen
Channel Catfish		1	0.4	М	NA
Common Carp		1	0.4	Т	Gen
Gizzard Shad		44	15.3	Μ	Gen
Green Sunfish		28	9.8	Т	Gen
Johnny Darter		5	1.7	Μ	SBI
Largemouth Bass		1	0.4	Μ	NA
Longear Sunfish		17	5.9	Μ	NA
Orangespotted Sunfish		8	2.8	Μ	NA
Warmouth		1	0.4	Μ	NA
Red Shiner		43	15	Т	Gen
Redfin Shiner		1	0.4	Μ	Gen
Shortnose Gar		1	0.4	М	NA
Slough Darter		3	1	Μ	SBI
Mud Darter		1	0.4	Μ	SBI
Spotted Sucker		2	0.7	Ι	Gen
Tadpole Madtom		1	0.4	Μ	SBI
Yellow Bass		6	2.1	М	NA
Yellow Bullhead		1	0.4	Т	Gen
White crappie		4	1.4	М	NA
Total Specimens		287	100.4		
Total Species		24			
Total Intolerant Species		1			
Total Illinois T&E Species		0			

#### **Freshwater Mussels US51-28**

Rock Pocketbook	Relic
White Heelsplitter	2
Giant floater	13
Mapleleaf	Relic
Pondhorn	7
Fragile Papershell	3
Pondmussel	3
Lilliput	1
•	

Date sampled	06/26/08
Total number of live individuals	29
Total number of live species	6
Total number of species	8
Effort (person-hours)	2

## Aquatic Macroinvertebrates Site US51-28

1	
Fresh Water Snails (Gastropoda)	3
Fingernail Clams (Sphaeriidae)	1
Aquatic Worms (Oligochaeta)	31
Riffle Beetles (Stenelmidae)	6
Aquatic True Bugs (Hemiptera)	1
Biting Midges (Ceratopgonidae)	2
Non-biting Midges (Chironomidae)	93
Mayflies (Caenis sp)	160
Mayflies (Heptageniidae)	7
Narrow-wing Damselflies (Coenagrionidae)	3
Dragonflies (Gomphidae et al.)	1
Asst. Minor Taxa: Mites, roundworms, cladocera	6
Total Number of Examined Specimens	314
Total Number of Taxa	19
Number of EPT Taxa	4
Number of EPT Specimens	167
Mean Taxa Richness	12.3
% of EPT Specimens	53.2
% of Oligochaete Specimens	9.9
% of Chironomid Specimens	29.6

Central City

## Table xx. Aquatic Site US51-06 (Ramsey Creek)

Location: Fayette County, 30-100 feet downstream (E), U.S. Rt. 51 Bridge Watershed: Kaskaskia River Sampling Dates: Fish (May and October 2008) Mussels (June 17-19, 2008) Macroinvertebrates (Summer, 2008) Water Quality ( 04/22/08, 07/08/08, 09/22/08) Mean Habitat Score: 99 (Good) Sample Site Photographs: Fig. 6, page A147, INHS Report, Wetzel & Phillips, (Editors), 2009 Riparian Vegetation: Trees, Herbaceous Vegetation Stream Substrate: Sand, Gravel, Boulder, Bedrock Stream Width: 36 feet Stream Depth: 5 feet

Fish Species	Numbers	Percent	Tolerance	Trophic
	Collected	of Catch	-	Designation
Central Stoneroller	7	0.4		NA
Red Shiner	103	6.5	Т	Gen
Redfin Shiner	406	25.7	Μ	Gen
Bigmouth Shiner	22	1.4	Μ	Gen
Sand Shiner	1	0.1	Μ	Gen
Suckermouth Minnow	1	0.1	Μ	I
Bluntnose Minnow	999	63.2	Т	Gen
Bullhead Minnow	14	0.9	Μ	Gen
Freckled Madtom	2	0.1	Μ	SBI
Blackstripe Topminnow	2	0.1	Μ	NA
Green Sunfish	1	0.1	Т	Gen
Orangespotted Sunfish	2	0.1	Μ	NA
Johnny Darter	4	0.3	Μ	SBI
Orangethroat darter	7	0.4	Μ	SBI
Blackside darter	8	0.5	Μ	SBI
Logperch	1	0.1	Μ	SBI
		100		
Total Specimens	1580			
Total Species	16			
Total Intolerant Species	0			
Total Illinois T&E Species	0			
Native Mussels US51-06	1			
White Heelsplitter	1 D.1'.			
Giant Floater	Relic			
Mapleleaf	5 D - 11 -			
Plain Pocketbook	Relic			
Fat Mucket	Relic			
Yellow Sandshell	1			

Fragile Papershell	Relic
Pink Papershell	2
Date compled	06/26/08

Date sampled	06/26/08
Total number of live individuals	9
Total number of live species	4
Total number of species	8
Effort, (person-hours)	2

## Aquatic Macroinvertebrates Site US51-06

Selected Taxa	Numbers
Aquatic Worms (Clitellata)	17
Leeches (Branchiobdellidae)	32
Crayfish (Decopoda)	1
Riffle Beetles (Dubiraphia & Stenelmis)	13
Non-biting Midges (Chironomidae)	110
Blackflies (Simuliidae)	110
Craneflies (Tipulidae)	1
Mayflies (Baetidae)	98
Mayflies (Caenidae)	96
Mayflies (Heptageniidae)	17
Mayflies (Siphlonuridae)	2
Caddisflies (Hydropsychidae)	142
Caddisflies (Hydroptilidae)	1
Stoneflies (Plecoptera)	12
Alderflies (Megaloptera)	3
Asst. Minor Taxa: mites, roundworms, copepod	8
Total Number of Examined Specimens	663
Total Number of Taxa	19
Number of EPT Taxa	11
Number of EPT Specimens	368
Mean Taxa Richness	9
% of EPT Specimens	55.6
% of Oligochaete Specimens	7.4
% of Chironomid Specimens	36.2

## Table x. Aquatic Site US51-05 (Ramsey Creek Tributary)

Watershed: Kaskaskia River Location: Fayette Co., Road 2600N Bridge (0.25 mile E of U.S. Rt. 51), 2.4 mi SSE Ramsey (town); Sampling Dates: Fish (May and October 2008) Mussels (June 17-19, 2008) Macroinvertebrates (Summer, 2008) Water Quality (04/22/08, 07/08/08, 09/22/08) Mean Habitat Score: 76 (Poor) Sample Site Photographs: Fig. 5, page A146, INHS Report, Wetzel & Phillips, (Editors), 2009

Riparian Vegetation: Trees, Grasse, Herbaceous Vegetation

Stream Substrate: Sand, Gravel

Stream Width: 10.7 feet

Stream Depth: 3.9 feet

Fish Species	Numbers	Percent	Tolerance	Trophic
	Collected	of Catch	Designation	Designation
Central Stoneroller	78	25.7	М	NA
Red Shiner	60	19.7	Т	Gen
Redfin Shiner	18	5.9	Μ	Gen
Golden Shiner	6	2.0	Т	Gen
Silverjaw Minnow	8	2.6	Μ	Gen
Bluntnose Minnow	76	25.0	Т	Gen
Creek chub	19	6.3	Μ	Gen
White Sucker	16	5.3	Т	Gen
Creek Chubsucker	1	0.3	Μ	Gen
Spotted Sucker	2	0.7	Ι	Gen
Golden Redhorse	1	0.3	М	SBI
Blackstripe Topminnow	12	3.9	Μ	NA
Green Sunfish	1	0.3	Т	Gen
Orangespotted Sunfish	2	0.7	Μ	NA
Johnny Darter	2	0.7	М	SBI
Orangethroat darter	1	0.3	Μ	SBI
Blackside darter	1	0.3	Μ	SBI
		100.0		
Total Number Sampled	304			
Total Species	17			
Total Intolerant Species	1			
Total Illinois T&E Species	0			
Native Mussels Site US51-05				
Date sampled	06/26/08			
Total number of live individuals	0			
Total number of live species	0			
Total number of species	0			
Effort, (person-hours)	2			

## Aquatic Macroinvertebrates Site US51-05

Selected Taxa

Numbers

Fresh Water Snails (Gastropoda)	17
Fingernail Clams (Sphaeriidae)	26
Aquatic Worms (Clitellata)	38
Leeches (Branchiobdellidae)	5
Crayfish ( Decopoda)	9
Scuds (Amphipoda)	30
Riffle Beetles (Dubiraphia sp)	1
Swimming/Diving Beetles (Coleoptera)	20
Water Bugs (Hemiptera)	26
Non-biting Midges (Chironomidae)	154
Biting Midges (Ceratopgonidae)	15
Mosquito (Culicidae)	44
Blackflies (Simuliidae)	119
Deer-House Flies (Tabanidae)	5
Craneflies (Tipulidae)	3
Mayflies (Baetidae)	8
Mayflies (Caenidae)	37
Mayflies (Siphlonuridae)	131
Narrow-wing Damselflies (Coenagrionidae et al.)	15
Dragonflies (Gomphidae et al.)	6
Caddisflies (Limnephilidae)	1
Caddisflies (Rhycophilidae)	10
Stoneflies (Plecoptera)	178
Asst. Minor Taxa: mites, roundworms, copepods	29
Total Number of Examined Specimens	927
Total Number of Taxa	21
Number of EPT Taxa	8
Number of EPT Specimens	365
Mean Taxa Richness	15.7
% of EPT Specimens	39%
% of Oligochaete Specimens	5%
% of Chironomid Specimens	18%
*	

## Table xx. Aquatic Summary US51-22 (E. Fork Kaskaskia River)

Location: Marion County, 0-600 feet upstream (SE), U.S. Rt. 51 Bridge; 4.5 mi S. Patoka, IL Watershed: Kaskaskia River Sampling Dates: Fish (May and October 2008) Mussels (08/07/06) Macroinvertebrates (Summer, 2008) Water Quality ( 04/21/08, 08/08/08, 09/22/08) Mean Habitat Score: 79 (Poor) Sample Site Photographs: Fig. 22, page A163, INHS Report, Wetzel & Phillips, (Editors), 2009 Riparian Vegetation: Trees, Herbaceous Vegetation Stream Substrate: Sand, Silt, Gravel

Stream Width: 14.7 feet

Stream Depth: 4.9 feet

Fish Species	Numbers	Percent	Tolerance	Trophic
	Collected	of Catch	Designation T	Designation Gen
Red Shiner	15	4.5	I M	Gen
Spotfin Shiner	1	0.3		Gen
Redfin Shiner	100	30.3	M	Gen
Sand Shiner	16	4.8	M	Gen
Bluntnose Minnow	77	23.3	Т	
Creek chub	7	2.1	Т	Gen
White Sucker	1	0.3	Т	Gen
Bigmouth Buffalo	1	0.3	М	Gen
Spotted Sucker	1	0.3	Ι	Gen
Yellow Bullhead	1	0.3	Т	Gen
Tadpole Madtom	1	0.3	Μ	SBI
Blackstripe Topminnow	19	5.8	Μ	NA
Pirate Perch	4	1.2	Μ	NA
Mosquitofish	2	0.6	Μ	NA
Brook Silversides	8	2.4	Μ	NA
Bluegill	4	1.2	Μ	Gen
Largemouth Bass	1	0.3	Μ	NA
Johnny Darter	31	9.4	Μ	SBI
Logperch	2	0.6	М	SBI
Blackside Darter	7	2.1	Μ	SBI
Slough Darter	31	9.4	Μ	SBI
6		99.8		
Total Species	330			
Total Intolerant Species	1			
Total Illinois T&E Species	0			
Native Mussels US51-22				
White Heelsplitter	1			
Giant Floater	1			
Threeridge	3			
Fat Mucket	44			
1 44 1:14 412 4 5				

Pondmussel	1
Fragile Papershell	1
Lilliput	D
-	
Date sampled	08/07/06

Date sampled	08/07/00
Total number of live individuals	51
Total number of live species	6
Total number of species	7
Effort, (person-hours)	4

## Aquatic Macroinvertebrates Site US51-22

37
2
2
98
2
6
63
1
29
2
2
49
32
5
2
1
144
5
1
1
46
530
25
14
239
12.3
45.1
0.4
12.1

## Table xxx. Aquatic Site US51-09 (Kaskaskia River)

Location: Fayette Co., at Co. Rd. 2000N, ~1 mile E U.S. Rt. 51 Sampling Dates: Fish (May and October 2008) Mussels (June 17-19, 2008) Macroinvertebrates (Summer, 2008) Water Quality ( 04/22/08, 07/08/08, 09/22/08) Mean Habitat Score: 55 (Poor) Sample Site Photographs: Fig. 9, page A150, INHS Report, Wetzel & Phillips, (Editors), 2009

Riparian Vegetation: Trees, herbaceous vegetation

Stream Substrate: Silt, Sand

Stream Width: 82.1 feet

Stream Depth: 13.1 feet

Fish Species	Numbers	Percent of Catch	Tolerance Designation	Trophic Designation
Longnose Gar	2	0.9	M	NA
Shortnose Gar	3	1.3	М	NA
Bowfin	1	0.4	М	NA
Gizzard Shad	3	1.3	Μ	Gen
Red Shiner	140	59.3	Т	Gen
Common Carp	4	1.7	Т	Gen
Silverjaw Minnow	1	0.4	Μ	Gen
Bluntnose Minnow	8	3.4	Т	Gen
Creek Chub	19	8.0	Т	Gen
River Carpsucker	30	12.7	Μ	Gen
Smallmouth Buffalo	4	1.7	Μ	Ι
Brook Silversides	3	1.3	Μ	NA
Channel Catfish	1	0.4	Μ	NA
Golden Redhorse	1	0.4	Μ	SBI
White Bass	1	0.4	Μ	NA
Bluegill	2	0.9	Μ	NA
Longear Sunfish	4	1.7	М	NA
Freshwater Drum	9	3.8	Μ	NA
		100%		
Total Specimens	236			
Total Species	18			
Total Intolerant Species	0			
Total Illinois T&E Species	0			

## **Native Mussels**

Fragile Papershell	Historical Record
Pink Papershell	Historical Record
	07/15/00
Date sampled	07/15/08

Date sampled	01112100
Total number of live individuals	0
Total number of live species	0
Total number of species	0

Effort, (person-hours)

## 0.5 hours, using brail

## Macroinvertebrates

No macroinvertebrate collection made for US51-09

# **APPENDIX B**

### Project Name: US 51 Date: September 24, 2012

Inputs	Units	Sewer Creek (US51 Build Alt)	Crooked Creek (US51 Build Alt)	Prairie Creek (CS Alt 2)	Lost Creek (CS Alt 1)	Lost Creek (CS Alt2)	East Fork Kaskaskia River (US51 Build Alt)	North Fork Kaskaskia River (US51 Build Alt)	Hickory Creek (US51 Build Alt)	Kaskaskia River (US51 Build Alt)	Ramsey Creek (RCO A)	Ramsey Creek (RCO B)
Total right of way	acres	57.41	116.10	86.70	173.50	112.20	61.20	71.70	82.98	97.00	64.90	46.60
Paved Surface	acres	13.93	34.83	22.90	41.51	21.60	13.50	21.50	24.90	29.10	24.40	24.40
Watershed Drainage Area	square miles	3.57	173.01	10.7	6.45	6.45	128	77.6	142	1,944	96.04	96.04
ADT	vehicles/day	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Hardness	mg/l	242	170.1	209	211	211	138	111	211	194	301	301
Lead												
Once in 3 year stream pollutant concentration	mg/l	0.024	0.007	0.021	0.027	0.024	0.005	0.009	0.007	0.001	0.008	0.008
IEPA Acute Criterion	mg/l	0.20	0.13	0.17	0.17	0.17	0.11	0.08	0.17	0.15	0.25	0.25
IEPA Chronic Criterion	mg/l	0.041	0.028	0.035	0.035	0.035	0.023	0.018	0.035	0.032	0.051	0.051
IEPA Acute Criterion Test	mg/l	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Zinc												
Once in 3 year stream pollutant concentration	mg/l	0.096	0.030	0.085	0.108	0.095	0.019	0.035	0.027	0.004	0.033	0.031
IEPA Acute Criterion	mg/l	0.25	0.19	0.22	0.22	0.22	0.16	0.13	0.22	0.21	0.30	0.30
IEPA Chronic Criterion	mg/l	0.046	0.034	0.040	0.041	0.041	0.028	0.024	0.041	0.038	0.055	0.055
IEPA Acute Criterion Test	mg/l	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Copper												
Once in 3 year stream pollutant concentration	mg/l	0.026	0.008	0.023	0.030	0.026	0.005	0.010	0.008	0.001	0.009	0.009
IEPA Acute Criterion	mg/l	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.05	0.05
IEPA Chronic Criterion	mg/l	0.024	0.018	0.021	0.021	0.021	0.015	0.012	0.021	0.020	0.029	0.029
IEPA Acute Criterion Test	mg/l	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
TSS												
Once in 3 year stream pollutant concentration	mg/l	123.262	38.370	108.445	138.938	122.000	24.665	45.379	35.004	4.696	41.832	40.210

# **APPENDIX C**

Alignment	Stream Name	Drainage Area, sq. mi.	Lane Miles	Slope, ft/mi	Annual Precip., in	Annual Salt Applied, Precip., in tons/mi	Salt Applied, tons	Ann. Avg. Flow, cfs	Annual Salt Applied, Salt Applied, Ann. Avg. Ann. Daily Max. trecip., in tons/mi tons Flow, cfs Cl, mg/l Cl, mg/l	Ann. Daily Max. Cl, mg/l	Chloride Load' <sup>a</sup> , tons
Existing	Sewer Creek	ï		I	ſ			1		ī	
Existing	Crooked Creek	173.0	7.2	21.4	38.9	10	68	244.1	0.7	26.7	18
Existing	Turkey	I	I	ſ	I	I	I	Ï	I	I	I
Existing	Prairie Creek	10.7	7.0	8.5	38.9	10	67	16.8	4.4	34.4	17
Existing	Lost Creek	6.5	9.4	11.0	38.9	10	89	10.3	10.3	44.2	35
Existing	E Fork Kaskaskia River	112.9	3.7	24.1	38.9	10	36	162.0	0.8	26.6	6-
Existing	North Fork Kaskaskia River	1.0	4.5	11.2	38.9	10	43	1.8	29.3	77.1	ςĴ
Existing	Hickory Creek Levee Ditch	142.0	3.5	1	38.9	10	33	201.9	I	26.4	11-1
Existing	Kaskaskia River	1944.2	8.5	1.5	38.9	10	81	2496.2	-0.8	26.2	28
Existing	Ramsey Creek	95.9	17.2	6.7	38.9	10	164	138.5	0.9	28.6	96
Existing	Ash Creek	6.6	17.2	15.6	38.9	10	164	10.6	18.8	58.4	96
	$^{h}$ If due to the recreasion analysis the chloride load has been calculated as a neostive value – the actual load will be taken as 0 tons	sis the chloride los	id has been calo	ulated as a neoative	value the actual	<sup>1</sup> load will he to	aken as () tons				
	IT THE IN THE INDEADING WITH A			annoa a a again							
	Input Sources:	Lane Miles. mi	Lane Miles. mi => From Huff & Huff data	& Huff data							

Input Sources:

salt Applied, tons/mi => IDOT Data for D7 for 4 years Salt Applied, tons/mi => IDOT Data for D7 for 4 years Salt Applied, tons = Salt Applied, tons/mi x Lane Miles Annual Average Flow, cfs = 0.045 x Drainage Area ~0.961 x Precip ~0.996 Annual Daily Average Increase C1, mg/l = -0.94 + (1.22 x (Salt Applied, tons / Ann. Avg. Flow, cfs)) + (0.06 x Slope) Annual Daily Maximum Increase C1, mg/l = 26.1 + (2.1 x (Salt Applied, tons / Ann. Avg. Flow, cfs)) - (3.2 x Storage) Chloride Load = -37.8 + (50 x Storage) + (0.816 x Salt Applied, tons) Lane Nutes, nu - / riout rout of rout of the maximum slope was used for combined stream crossings) Slope, ft/mi => From CDI/HDR data (note: The maximum slope was used for combined stream crossings) Annual Precipitation, in. => Vandalia, Illinois data

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# CHLORIDE CONCENTRATIONS ASSOCIATED WITH US 51 EXISTING

Alignment	Number	Stream Name	Drainage Area, sq. mi.	Lane Miles	Slope, R/mi	Annual Precip., in	Salt Applied, tons/mi	Salt Applied, Salt Applied, tons/mi tons	Ann, Avg Flow, cfs	Ann. Daily Avg Cl, mg/l	Ann. Daily Avg. Ann. Daily Max. Cl, mg/l Cl, mg/l	Chloride Load <sup>4</sup> , tons	Existing Annual Daily Max Cl, mg/l
US51 Build Alternative	S-T	Sewer Creek	3,6	5.7	14.1	38.9	10	55	5,9	11.3	45.7	7	-
US51 Build Alternative	43-44-R	Crooked Creek	173.0	9.1	21.4	38.9	10	86	244.1	0.8	26.8	33	26.7
CS Alt 1	0	Prairie Creek	10.7	8.9	8.5	38.9	10	85	16.8	5.7	36.7	31	34,4
CS Alt 2	40-41	Prairie Creek	8,2	14.8	8.5	38.9	10	141	13.0	12.8	48.8	77	34.4
CS Alt 1	37-38-39	Lost Creek	6.5	18.7	11.0	38.9	10	178	10,3	20.7	62.2	107	44.2
CS Alt 2	37	Lost Creek	6,5	10.7	11.0	38,9	10	102	10.3	11.7	46.8	45	44.2
US51 Build Alternative	P-32-33	E Fork Kaskashia River	112,9	7.9	24.1	38.9	10	75	162,0	1.1	27.1	23	26.6
US51 Build Alternative	25-28	North Fork Kaskaskia River	1.0	8.0	11.2	38.9	10	76	1.8	52.3	116.5	25	1.77
US51 Build Alternative	16	Hickory Creek Levee Ditch	142,0	7.0	I	38.9	10	67	201,9	I	26.8	16	26.4
US51 Build Alternative	13	Kaskaskia River	1,944.2	5.0	1.5	38.9	10	48	2496,2	-0.8	26.1	Ι	26.2
RCO A	6	Ramsey Creek	95.9	9.9	32.1	38.9	10	94	138.5	1.8	27.5	39	28.6
RCO B	6	Ramsey Creek	95.9	6.6	32.1	38.9	10	94	138.5	1.8	27.5	39	28.6
US51 Build Alternative	9	Ash Creek	6.6	8.8	15.6	38.9	10	84	10.6	9.6	42.6	30	58.4
		<sup>h</sup> If due to the regression analysis the chloride load		tas been calculat	has been calculated as a negative value, the actual load will be taken as 0 tons,	the actual load	will be taken a	s 0 tons.					
		Input Sources:		=> From Huff & Huff data	Huff data								
			Slone A/mi => F	mm CDI/HDR	Frrm CD1/HDR date (note: The maximum clone was used for combined stream crossings)	num elone was ne	ed for combine	d etream crossin	oe)				

CHLORIDE CONCENTRATIONS ASSOCIATED WITH US 51 PROPOSED 09 17 12

Slope, fr/mi => From CDUHDR data (note: The maximum slope was used for combined stream crossings) Annual Precipitoito, iu. => Vandalia, Ilnois data Salt Applied, tons => 2014 Data for D7 for four years Salt Applied, tons = Salt Applied, tons/mi x Lame Miles Ammal Datiy Average Flow, cfs = 0.045 x Drange Area: 0.996 Ammal Datiy Average Flow, cfs = 0.045 x Drange Area: 0.994 (not x Applied, tons / Ann. Avg. Flow, cfs)) + (0.06 x Slope) Ammal Datiy Average Increase C1, mg/l = 26.1 + (2.1 x (Salt Applied, tons / Ann. Avg. Flow, cfs)) - (3.2 x Storage) Chorde Load = -37.8 + (50 x Storage) + (0.816 x Salt Applied, tons)

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|       |  |   
   
   
  |  | US 51  | Build  
   
   
   
  |  |   |  |  | RA  | lt1   
  |  |  |  |                                 | RA  
   
  | Alt2   |   |   
   |   |  | VA  | lt1  
  |  |  |
|-------|--
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---|--|---|--|--|---
--|--|--|--|---------------------------------
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--|--
---|---|---|--|---
---|--|--|
|       | Mainline<br>Freeway or<br>Side<br>Street/Ramp<br>Crossing  | Total<br>Number   
   
   
  | Number<br>of<br>Culverts   | Size of  | Type of  
   
   
   
  | Number<br>of<br>Bridges  | Length of<br>Bridge ft  | Total<br>Number  |  | Size of   | Type of   
  | Number<br>of<br>Bridges  | Length of<br>Bridge, ft  |  | Number<br>of<br>r Culverts      | Size of   
   
  | Type of  | Number<br>of<br>Bridges   | Length of<br>Bridge, ft   
   | Total<br>Number   | Number<br>of<br>Culverts   | Size of   | Type of  
  | Number<br>of<br>Bridges  | Length o<br>Bridge, fi   |
| 5.74  | Mainline<br>Side   | 2<br>6  
   
   
  | 0  |  |  
   
   
   
  | 2<br>6   | 100<br>100  | Number   |  |   |   
  |  | Bridge, it   | Numbe  | Cuiverts                        |   
   
  |  |   | Bridge, it  
   | Number  |  |   |  
  | Diluges  | Bridge, I  |
| 3.88  | Total<br>Mainline  | 8   
   
   
  | 0  |  |  
   
   
   
  | 8  | 100<br>60   |  |  |   |   
  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
|       | Side<br>Total  | 0<br>1  
   
   
  | 0<br>0   |  |  
   
   
   
  | 0<br>1   | 0<br>60   |  | S  | Stream is r   | not crossed   
  | l  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | ot crossed   
  |  |  |
| 3.57  | Mainline<br>Side<br>Total  | 1<br>0<br>1   
   
   
  | 0<br>0<br>0  |  |  
   
   
   
  | 1<br>0<br>1  | 70<br>0<br>70   |  | S  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Mainline<br>Side   |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Mainline<br>Side   |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 1.01  | Mainline<br>Side   | 2<br>0  
   
   
  | 2<br>0   | 10x8<br>   | box<br>  
   
   
   
  | 0  | 0   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 173   | Total<br>Mainline<br>Side  | 2<br>1<br>0   
   
   
  | 2<br>0<br>0  |  |  
   
   
   
  | 0<br>1<br>0  | 0<br>130<br>0   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Total  | 1   
   
   
  | 0  |  |  
   
   
   
  | 1  | 130   |  |  |   |   
  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
| 10.7  | Mainline   |   
   
   
  |  | <u> </u>   |  
   
   
   
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  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
| 6.45  | Total<br>Mainline  |   
   
   
  |  |  |  
   
   
   
  |  |   |  |  |   |   
  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
|       | Side<br>Total<br>Mainline  |   
   
   
  | 1  | Stream is r  | not crossed  
   
   
   
  |  |   |  | S  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | ot crossed   
  |  |  |
|       | Side<br>Total  |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  | l  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | ot crossed   
  |  |  |
|       | Side<br>Total  |   
   
   
  |  |  |  
   
   
   
  |  |   |  | S  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 112.2 | Mainline<br>Side<br>Total  | 2<br>0<br>2   
   
   
  | 0<br>0<br>0  |  |  
   
   
   
  | 2<br>0<br>2  | 120<br>0<br>120   |  | S  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Mainline<br>Side   |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Mainline<br>Side   |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Mainline<br>Side   |   
   
   
  |  |  |  
   
   
   
  |  |   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 3.02  | Total<br>Mainline<br>Side  | 1<br>0  
   
   
  | 0  |  |  
   
   
   
  | 1<br>0   | 90<br>0   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 5.37  | Total<br>Mainline<br>Side  | 1<br>1<br>0   
   
   
  | 0  |  |  
   
   
   
  | 1<br>1<br>0  | 90<br>60<br>0   |  | s  | Stream is r   | not crossed   
  | 1  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 0.35  | Total<br>Mainline  | 1   
   
   
  | 0  | <br>12x5   | <br>box  
   
   
   
  | 1<br>0   | 60<br>0   |  |  |   |   
  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
| 4.88  | Total<br>Mainline  | 2   
   
   
  | 2  | <br>10x10  | <br>box  
   
   
   
  | 0  | 0   |  |  |   |   
  |  |  |  |                                 |   
   
  |  |   | |
   |   |  |   |  
  |  |  |
| 39.6  | Side<br>Total<br>Mainline  | 0<br>3  
   
   
  | 0<br>3<br>0  |  |  
   
   
   
  | 0<br>0<br>1  | 0   |  | S  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | ot crossed   
  |  |  |
|       | Side<br>Total  | 0 1 2   
   
   
  | 0<br>0   | <br><br>10' x 10'  | <br>   
   
   
   
  | 0 1  | 0<br><b>400</b>   |  | S  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | Side<br>Total  | 2<br>0<br>2   
   
   
  | 0<br>2   |  |  
   
   
   
  | 0<br>0   | 0<br>0  |  | s  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | ot crossed   
  |  |  |
| 19.9  | Mainline<br>Side<br><b>Total</b>   | 1<br>0<br>1   
   
   
  | 0<br>0<br>0  |  |  
   
   
   
  | 1<br>0<br>1  | 140<br>0<br><b>140</b>  |  | s  | Stream is r   | not crossed   
  | l  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 0.15  | Mainline<br>Side<br>Total  | 1<br>0<br>1   
   
   
  | 1<br>0<br>1  | 7 x 5<br>  | box<br>  
   
   
   
  | 0<br>0<br>0  | 0<br>0<br>0   |  | s  | Stream is r   | not crossed   
  |  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
| 0.64  | Mainline<br>Side<br>Total  | 2<br>0<br>2   
   
   
  | 2<br>0<br>2  | 14' x 6'<br>   | box<br>  
   
   
   
  | 0 0 0  | 0<br>0<br>0   |  | s  | Stream is r   | not crossed   
  | I  |  |  |                                 | Stream is r   
   
  | not crossed  |   |   
   |   |  | Stream is r   | not crossed  
  |  |  |
|       | US 51<br>Crossing<br>Area (square<br>miles)<br>5.74<br>3.88<br>3.57<br>1.01<br>1.01<br>1.01<br>1.01<br>6.45<br>1.07<br>6.45<br>1.07<br>6.45<br>1.12.2<br>112.2<br>3.02<br>5.37<br>0.35<br>4.88<br>39.6<br>1.03<br>19.9<br>0.15 | US 51<br>Crossing<br>Area (square<br>miles)     Freeway or<br>Side<br>Street/Ramp<br>Crossing<br>Side<br>Total       5.74     Mainline<br>Side<br>Total       3.88     Mainline<br>Side<br>Total       3.87     Mainline<br>Side<br>Total       3.57     Mainline<br>Side<br>Total       3.57     Mainline<br>Side<br>Total       10.1     Mainline<br>Side<br>Total       10.1     Mainline<br>Side<br>Total       10.7     Mainline<br>Side<br>Total       10.7     Mainline<br>Side<br>Total       10.7     Mainline<br>Side<br>Total       10.7     Mainline<br>Side<br>Total       10.7     Mainline<br>Side<br>Total       112.2     Mainline<br>Side<br>Total       112.2     Mainline<br>Side<br>Total       3.02     Mainline<br>Side<br>Total       3.02     Mainline<br>Side<br>Total       3.02     Mainline<br>Side<br>Total       3.03     Mainline<br>Side<br>Total       3.04     Mainline<br>Side<br>Total       3.05     Mainline<br>Side<br>Total       3.02     Mainline<br>Side<br>Total       3.03     Mainline<br>Side<br>Total       3.04     Mainline<br>Side<br>Total       3.05     Mainline<br>Side<br>Total       3.04     Mainline<br>Side<br>Total       3.05     Mainline<br>Side<br>Total       3.06     Mainline<br>Side<br>Total       3.07     Mainline<br>Side<br>Total       3.08     Mainline<br>Side<br>Total <td>US 51<br/>CrossingFreeway or<br/>SideTotal<br/>Number5.74Mainline25.74Mainline13.88Mainline13.88Mainline13.87Mainline13.57Mainline13.57Mainline13.57Mainline13.57Mainline1Side01Total1Mainline1Side0Total1Mainline2Side0Total11.01MainlineSide0Total11.01MainlineSide0Total110.7MainlineSide0Total110.7MainlineSide0Total210.7MainlineSide0Total2112.2MainlineSide0Total2Side0Total2Mainline1Side0Total2Mainline1Side0Total1112.2MainlineSide0Total13.02MainlineSide0Total13.39.6MainlineSide0Total111.03Si</td> <td>US 51<br/>Crossing<br/>Area (square<br/>inlies)Freeway or<br/>Side<br/>intervention<br/>trotal<br/>NumberNumber<br/>of<br/>Culverts<br/>Number5.74Mainline<br/>Side<br/>intervention<br/>Side003.88Mainline<br/>Side<br/>intervention<br/>Side103.88Mainline<br/>Side<br/>intervention<br/>Side103.57Mainline<br/>Side<br/>intervention<br/>Side103.57Mainline<br/>Side<br/>intervention<br/>Side103.57Mainline<br/>Side<br/>intervention<br/>Side221.01Mainline<br/>Side<br/>intervention<br/>Side<br/>intervention<br/>intervention<br/>Side<br/>intervention<br/>intervention<br/>Side<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>intervention<br/>in</td> <td>Upstream of<br/>US 51<br/>Crossing<br/>Area (square<br/>5.74         Mainline<br/>Side<br/>Side         Total<br/>Number<br/>of<br/>Crossing<br/>Side         Number<br/>of<br/>Size of<br/>Cuivert         Size of<br/>Size of<br/>Cuivert           5.74         Mainline<br/>Side         2         0        <br/>or<br/>Size of<br/>Cuivert        <br/>Size of<br/>Cuivert           3.88         Mainline<br/>Side         1         0        <br/>or<br/>Side         0           3.57         Mainline<br/>Side         1         0        <br/>Or<br/>Side         0           Total         1         0        <br/>Or<br/>Side         0        <br/>Or<br/>Side        <br/>Or<br/>Side         0           1.01         Mainline<br/>Side         0         0        <br/>Or<br/>Side         0        <br/>Or<br/>Side        <br/>Or<br/>Side        <br/>Or<br/>Side         0        <br/>Or<br/>Side         <td< td=""><td>Upsteam of<br/>US 51<br/>Side<br/>Street/Ramp<br/>Area (square<br/>Side         Total<br/>Total<br/>Number<br/>Culverts         Number<br/>Size of<br/>Culvert         Size of<br/>Culvert         Type of<br/>Culvert           5.74         Mainline<br/>Side         2         0        </td><td>Upstram of<br/>Nrae (quare)         Mainline<br/>Side<br/>Total         Total<br/>Number         Number<br/>Culverts         Size of<br/>Culvert         Type of<br/>Side<br/>Side         Number<br/>Bridges           5.74         Mariline<br/>Side         2         0           2           5.74         Mariline<br/>Side         1         0           8           3.88         Mainline<br/>Side         1         0           1           3.57         Mainline<br/>Side         0         0           1           3.57         Mainline<br/>Side         0         0           1           3.57         Mainline<br/>Side         1         0           1           Mainline<br/>Side         2         2         10x8         box         0           1.01         Mainline<br/>Side         1         0           0           173         Mainline<br/>Side         1         0           0           10.7         Mainline<br/>Side         1         0           0           112.2         Mainline<br/>Side         1         0&lt;</td><td>Uptram of<br/>Nrae (quare )<br/>Freeway of<br/>Side         Number<br/>Total         Number<br/>Number<br/>Clossing         Number<br/>Size of<br/>Clovert         Number<br/>Clovert         Number<br/>Clovert         Number<br/>Clovert         Length of<br/>Clovert           5.74         Mainline         1         0           6         100           3.88         Mainline         1         0           1         60           3.88         Mainline         1         0           1         00           3.88         Mainline         1         0           1         00           3.87         Mainline         1         0         0           1         70           Mainline         1         0         0           1         10           Mainline         2         2         10.8         box         0         0           Total         2         2         10.8         box         0         0           Total         1         0           1         130           10.7         Mainline         </td><td>Upstand<br/>Crossing<br/>Area (square SteedRamp<br/>Number<br/>Crossing<br/>Side         Total<br/>Total<br/>Number<br/>Crossing<br/>Side         Number<br/>Culvert         Side<br/>Culvert         Number<br/>Culvert         Number<br/>Culvert         Number<br/>Culvert         Number<br/>Bridge<br/>Bridge<br/>Discussion         Total<br/>Bridge<br/>Discussion         Number<br/>Discussion         Total<br/>Bridge<br/>Discussion         Number<br/>Discussion         Total<br/>Discussion         Number<br/>Discussion         Number<br/>Discussion         Total<br/>Discussion         Number<br/>Discussion         Numbe</td><td>Upstram         Mainline<br/>Side<br/>Area (square<br/>Side<br/>Area (square<br/>Side<br/>Side<br/>Side<br/>Total         Number<br/>Aumber<br/>Covert         Size of<br/>Curvert         Number<br/>Curvert         Number<br/>Curvert</td><td>Upstream         Maintine<br/>Side<br/>Ara (squar)         Maintine<br/>Side<br/>Side         Total<br/>Coversity         Number<br/>Coversity         Number<br/>Coversi</td><td>Upstram         Mainline         Number<br/>Side         Size         Page         Number<br/>(result)         Size of<br/>(result)         Size</td><td>Upper solution<br/>Consisting<br/>Consisting<br/>Consisting<br/>Sectors<br/>mathesise         Instruction<br/>Consisting<br/>Sectors<br/>Number<br/>Sectors<br/>Number<br/>Number<br/>Sectors<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Number<br/>Num</td><td>Upber 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of the strength of the strengt</td><td><ul> <li>Harder Ander And</li></ul></td><td><ul> <li>Marcia Sante San</li></ul></td><td>Name     Name     Name</td><td>Weise of the state of the</td><td>Weak<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<b< td=""><td>Name     Name     Name</td><td>Image: Processing of the sector of the s</td></b<></td></td></td<></td> | US 51<br>CrossingFreeway or<br>SideTotal<br>Number5.74Mainline25.74Mainline13.88Mainline13.88Mainline13.87Mainline13.57Mainline13.57Mainline13.57Mainline13.57Mainline1Side01Total1Mainline1Side0Total1Mainline2Side0Total11.01MainlineSide0Total11.01MainlineSide0Total110.7MainlineSide0Total110.7MainlineSide0Total210.7MainlineSide0Total2112.2MainlineSide0Total2Side0Total2Mainline1Side0Total2Mainline1Side0Total1112.2MainlineSide0Total13.02MainlineSide0Total13.39.6MainlineSide0Total111.03Si | US 51<br>Crossing<br>Area (square<br>inlies)Freeway 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| Upstream of<br>US 51<br>Crossing<br>Area (square<br>5.74         Mainline<br>Side<br>Side         Total<br>Number<br>of<br>Crossing<br>Side         Number<br>of<br>Size of<br>Cuivert         Size of<br>Size of<br>Cuivert           5.74         Mainline<br>Side         2         0<br>or<br>Size of<br>Cuivert<br>Size of<br>Cuivert           3.88         Mainline<br>Side         1         0<br>or<br>Side         0           3.57         Mainline<br>Side         1         0<br>Or<br>Side         0           Total         1         0<br>Or<br>Side         0<br>Or<br>Side<br>Or<br>Side         0           1.01         Mainline<br>Side         0         0<br>Or<br>Side         0<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side         0<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side<br>Or<br>Side <td< td=""><td>Upsteam of<br/>US 51<br/>Side<br/>Street/Ramp<br/>Area (square<br/>Side         Total<br/>Total<br/>Number<br/>Culverts         Number<br/>Size of<br/>Culvert         Size of<br/>Culvert         Type of<br/>Culvert           5.74         Mainline<br/>Side         2         0        </td><td>Upstram of<br/>Nrae (quare)         Mainline<br/>Side<br/>Total         Total<br/>Number         Number<br/>Culverts         Size of<br/>Culvert         Type of<br/>Side<br/>Side         Number<br/>Bridges           5.74         Mariline<br/>Side         2         0           2           5.74         Mariline<br/>Side         1         0           8           3.88         Mainline<br/>Side         1         0           1           3.57         Mainline<br/>Side         0         0           1           3.57         Mainline<br/>Side         0         0           1           3.57         Mainline<br/>Side         1         0           1           Mainline<br/>Side         2         2         10x8         box         0           1.01         Mainline<br/>Side         1         0           0           173         Mainline<br/>Side         1         0           0           10.7         Mainline<br/>Side         1         0           0           112.2         Mainline<br/>Side         1         0&lt;</td><td>Uptram of<br/>Nrae (quare )<br/>Freeway of<br/>Side         Number<br/>Total         Number<br/>Number<br/>Clossing         Number<br/>Size of<br/>Clovert         Number<br/>Clovert         Number<br/>Clovert         Number<br/>Clovert         Length of<br/>Clovert           5.74         Mainline         1         0           6         100           3.88         Mainline         1         0           1         60           3.88         Mainline         1         0           1         00           3.88         Mainline         1         0           1         00           3.87         Mainline         1         0         0           1         70           Mainline         1         0         0           1         10           Mainline         2         2         10.8         box         0         0           Total         2         2         10.8         box         0         0           Total         1         0           1         130           10.7         Mainline         </td><td>Upstand<br/>Crossing<br/>Area (square SteedRamp<br/>Number<br/>Crossing<br/>Side         Total<br/>Total<br/>Number<br/>Crossing<br/>Side         Number<br/>Culvert         Side<br/>Culvert         Number<br/>Culvert         Number<br/>Culvert         Number<br/>Culvert         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td=""><td>Name     Name     Name</td><td>Image: Processing of the sector of the s</td></b<></td></td></td<> | Upsteam of<br>US 51<br>Side<br>Street/Ramp<br>Area (square<br>Side         Total<br>Total<br>Number<br>Culverts         Number<br>Size of<br>Culvert         Size of<br>Culvert         Type of<br>Culvert           5.74         Mainline<br>Side         2         0 | Upstram of<br>Nrae (quare)         Mainline<br>Side<br>Total         Total<br>Number         Number<br>Culverts         Size of<br>Culvert         Type of<br>Side<br>Side         Number<br>Bridges           5.74         Mariline<br>Side         2         0           2           5.74         Mariline<br>Side         1         0           8           3.88         Mainline<br>Side         1         0           1           3.57         Mainline<br>Side         0         0           1           3.57         Mainline<br>Side         0         0           1           3.57         Mainline<br>Side         1         0          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<td>Weak<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<br/>And<b< 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Weak<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And<br>And 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			1		US 5	1 Build			1		R/	Alt1			1		R	Alt2					VA	lt1		
Stream	Upstream of US 51 Crossing Area (square miles)	Mainline Freeway or Side Street/Ramp Crossing	Total Number	Number of Culverts	Size of	Type of Culvert	Number of Bridges	Length of Bridge, ft	Total Number	Number of Culverts	Size of Culvert	Type of Culvert	Number of Bridges	Length of Bridge, ft			Size of Culvert	Type of Culvert	Number of Bridges	Length of Bridge, ft	Total Number	Number of Culverts	Size of Culvert	Type of Culvert	Number of Bridges	Length o Bridge, f
Stream	miles)	Side	0	0			0	0	Number			not crossed	-	Bridge, it	Numb	er Cuiverts		not crossed	Bridges	Bridge, it	Number	Guivents	Stream is r		Blidges	Bridge, I
Unnamed Tributary to Richland Creek	0.46	Total Mainline Side Total	3 1 0	3 1 0 1	8 x 6 	 box 	0 0 0	0 0 0 0			Stream is	not crossed					Stream is	not crossed					Stream is r	not crossed		
Richland Creek	12.6	Mainline Side Total	1 0 1	0			1 0 1	100 0 100			Stream is	not crossed	I				Stream is	not crossed					Stream is r	not crossed		
Hickory Creek	85.3	Mainline Side Total	1 0 1	0 0 0			1 0 1	510 0 <b>510</b>			Stream is	not crossed	l				Stream is	not crossed					Stream is r	not crossed		
Kaskaskia River	1944	Mainline Side Total	11 0 <b>11</b>	10 0 <b>10</b>	10 @ 72"  	72"RCP 	1 0 1	700 0 <b>700</b>			Stream is	not crossed	I				Stream is	not crossed					Stream is r	ot crossed		
Fish Lake Ditch	0.07	Mainline Side Total	1 0 1	1 0 1	10 x 6  	box 	0 0 0	0 0 0			Stream is	not crossed	1				Stream is	not crossed					Stream is r	not crossed		
Unnamed Tributary of Raccoon Creek #1	0.94	Mainline Side <b>Total</b>			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>1</b>	1 0 1	1 @ 10 x 0 	box 	0 0 0	0 0 0
Unnamed Tributary of Raccoon Creek #2	0.71	Mainline Side <b>Total</b>			Stream is	not crossed					Stream is	not crossed	l				Stream is	not crossed			3 0 <b>3</b>	3 0 <b>3</b>	3@8x7 0 	box 	0 0 0	0 0 0
Unnamed Tributary of Raccoon Creek #3	0.45	Mainline Side <b>Total</b>		-	This Site no	longer exist	ts.			Т	'his Site no	longer exis	ts.				This Site no	longer exist	S.			I	his Site no	onger exists	s.	
Unnamed Tributary of Bear Creek #1	0.75	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	1				Stream is	not crossed					Stream is r	not crossed		
Bear Creek	28.5	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed					Stream is r	ot crossed		
Unnamed Tributary to Hoffman Creek	1.05	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>2</b>	2 0 2	2 @ 10 x 0 	box 	0 0 0	0 0 0
Unnamed Tributary of Vandalia Lake #1	0.97	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>2</b>	2 0 2	2 @ 10 x 0 	box 	0 0 0	0 0 0
Unnamed Tributary of Vandalia Lake #2	0.93	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>2</b>	2 0 2	2 @ 10 x 0 	box 	0 0 0	0 0 0
Unnamed Tributary of Vandalia Lake #3	5.38	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>1</b>	0 0 0	0 0 		1 0 1	80 0 <b>80</b>
Unnamed Tributary of Kaskaskia River	0.89	Mainline Side <b>Total</b>			Stream is	not crossed					Stream is	not crossed	l				Stream is	not crossed					Stream is r	not crossed		
Unnamed Tributary of Vandalia Lake #4	1.3	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			2 0 <b>2</b>	2 0 2	2 @ 11 x 0 	box 	0 0 0	0 0 0
Bear Creek	3.75	Mainline Side <b>Total</b>			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>1</b>	0 0 0	0		1 0 1	80 0 <b>80</b>
Unnamed Tributary of Vandalia Lake #5	0.98	Mainline Side Total			Stream is	not crossed					Stream is	not crossed					Stream is	not crossed			1 0 <b>2</b>	2 0 2	2 @ 10 x 0 	box 	0 0 0	0 0 0
Unnamed Tributary to Hurricane Creek	1.67	Mainline Side Total			Stream is	not crossed					Stream is	not crossed					Stream is	not crossed			2 0 <b>2</b>	2 0 2	2 @ 11 x 0 	box 	0 0 0	0 0 0
Hoffman Creek	7.16	Mainline Side Total			Stream is	not crossed					Stream is	not crossed	I				Stream is	not crossed			1 0 <b>1</b>	0 0 0	0 0 		1 0 1	95 0 <b>95</b>
Ramsey Creek	95.9	Mainline Side Total			Stream is	not crossed					-	not crossed						not crossed					Stream is r	not crossed		
Unnamed Tributary of Ramsey Creek #2	0.73	Mainline Side Total		1 -		not crossed			3 0 <b>3</b>	3 0 <b>3</b>	3@5x5  	box 	0 0 0	0 0 0	3 0 <b>3</b>	3 0 <b>3</b>	3@5x5  	box 	0 0 <b>0</b>	0 0 <b>0</b>			Stream is r	not crossed		
Ash Creek	6.63	Mainline Side Total	1 0 1	0 0 0			1 0 1	130 0 <b>130</b>			Stream is	not crossed	I				Stream is	not crossed					Stream is r	not crossed		
Unnamed Tributary S. of Little Creek	2.13	Mainline Side Total	2 0 2	2 0 2	2 @ 8 x 5  	box  	0 0 0	0 0 0			Stream is	not crossed	l				Stream is	not crossed					Stream is r	not crossed		
Unnamed Tributary N. of Little Creek	0.5	Mainline Side	2 0	2 0	2 @ 8 x 4 	box 	0	0			Stream is	not crossed	I		1		Stream is	not crossed					Stream is r	ot crossed		

					US 51	Build					RA	lt1					RA	lt2					VA	lt1		
	Upstream of US 51 Crossing	Mainline Freeway or Side		Number			Number			Number			Number			Number		_	Number			Number			Number	
	Area (square			TO I	Size of	Type of	of	Length of	Total	of	Size of	Type of	of	Length of	Total	TO I	Size of	Type of	10	Length of	Total	10	Size of	Type of		Length of
Stream	miles)	Crossing	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft
		Total	2	2			0	0																		
Matney Branch	2.05	Mainline	2	2	2@8x6	box	0	0																		
		Side	0	0			0	0			Stream is r	not crossed					Stream is r	not crossed					Stream is n	not crossed		
		Total	2	2			0	0																		
Opossum Creek	10.9	Mainline	1	0			1	130																		
		Side	0	0			0	0			Stream is r	not crossed					Stream is r	not crossed					Stream is n	not crossed		
		Total	1	0			1	130																		
			55	33			22	2740	3	3			0	0	3	3			0	0	19	16			3	255

Note: Culvert sizes will be finalized upon completion of drainage analysis by CDI in early Spring 2014.

						VAIt2	2			<u> </u>			VAlt	3					1	/Alt4					CS-	Alt 1		
	Upstream of US 51 Crossing Area (square	Mainline Freeway or Side Street/Ramp	Total	Number of			Type of	Number of	Length c					Type of	Number of	Length of			Size of		Number of	Length of	Total	Number of	Size of	Type of	Number of	Length o
Stream Webster Creek	miles) 5.74	Crossing Mainline Side	Number	Culverts		eam is not	Culvert	Bridges	Bridge, f	Number	C			Culvert ot crossed	Bridges	Bridge, ft	Numb	ber Culver		Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert Stream is	Culvert	Bridges	Bridge, f
	0.00	Total																										
Fulton Branch	3.88	Mainline Side Total			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	I				Stream is	not crossed		
Sewer Creek	3.57	Mainline Side			Stre	eam is not	t crossed	l				Str	eam is no	t crossed	l				Stream is	s not crossed	I				Stream is	not crossed		
Unnamed Tributary to Sewer Creek		Total Mainline Side			Stre	eam is not	t crossed	1				Str	eam is no	t crossed	1				Stream is	s not crossed	I				Stream is	not crossed		
Unnamed Tributary to Crooked Creek #2		Total Mainline Side			Stre	eam is not	crossed					Str	am is no	t crossed					Stream in	s not crossed					Stream is	not crossed		
Unnamed Tributary	1.01	Total Mainline																										
to Crooked Creek #1 Crooked Creek	173	Side Total Mainline			Stre	eam is not	t crossed	1				Str	eam is no	t crossed	1				Stream is	s not crossed	1				Stream is	not crossed		
	110	Side Total			Stre	eam is not	t crossed	l				Str	eam is no	t crossed	l				Stream is	s not crossed	I				Stream is	not crossed		
Crileys Branch																												
Prairie Creek	10.7	Mainline Side		1	Stre	eam is not	t crossed					Str	eam is no	t crossed		1			Stream is	s not crossed	1				Stream is	not crossed		
Lost Creek	6.45	Total Mainline Side			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1		1	0	0	0	1 0	40
Unnamed Tributary to Lost		Total Mainline															-						1	0	-	-	1	40
Creek North Unnamed Tributary to East		Side Total Mainline			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1							
Fork Kaskaskia River 3		Side Total			Stre	eam is not	t crossed	l				Str	eam is no	t crossed	l				Stream is	s not crossed	1				Stream is	not crossed		
East Fork Kaskaskia River	112.2	Mainline Side Total			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	I				Stream is	not crossed		
Unnamed Tributrary to East Fork Kaskaskia River 1		Mainline Side Total			Stre	eam is not	t crossed	l				Str	eam is no	t crossed	l				Stream is	s not crossed	I				Stream is	not crossed		
Unnamed Tributary to East Fork Kaskaskia River 1		Mainline Side			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1				Stream is	not crossed		
Louse Run Trib South 2		Total Mainline Side			Stre	eam is not	t crossed	1				Str	eam is no	t crossed					Stream is	s not crossed	1				Stream is	not crossed		
Louse Run Trib South 1	3.02	Total Mainline			01							01					-		Otra ana i						Otra and in			
Louse Run	5.37	Side Total Mainline			Stre	eam is not	crossed					Str	eam is no	t crossed					Stream	s not crossed					Stream is	not crossed		
Louse Run Tributary	0.35	Side Total Mainline			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1				Stream is	not crossed		
-		Side Total			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1			<u> </u>	Stream is	not crossed		<u> </u>
Deer Creek	4.88	Mainline Side Total			Stre	eam is not	t crossed		_		_	Str	eam is no	t crossed					Stream is	s not crossed					Stream is	not crossed	_	
North Fork Kaskaskia River	39.6	Mainline Side			Stre	eam is not	t crossed	l				Str	eam is no	t crossed	I				Stream is	s not crossed	I				Stream is	not crossed		
Unnamed Tributary of North Fork Kaskaskia	1.03	Total Mainline Side			Stre	eam is not	t crossed	I				Str	eam is no	t crossed	I				Stream is	s not crossed	I				Stream is	not crossed		
River Flat Creek	19.9	Total Mainline Side			Stre	eam is not	t crossed					Str	eam is no	t crossed					Stream is	s not crossed	1				Stream is	not crossed		
Unnamed Tributary to Flat Creek	0.15	Total Mainline																										
to Flat Creek	0.64	Side Total Mainline			Stre	eam is not	t crossed	1				Str	eam is no	t crossed	1				Stream is	s not crossed	1				Stream is	not crossed		
		Side Total			Stre	eam is not	t crossed					Str	eam is no	t crossed	l				Stream is	s not crossed	I				Stream is	not crossed		

					1	/Alt2			1		1	/Alt3					v	Alt4			1		CS-	-Alt 1		
Stream	Upstream of US 51 Crossing Area (square miles)	Mainline Freeway or Side Street/Ramp Crossing	Total Number	Number of Culverts	Size of Culvert		Number of Bridges	Length of Bridge, ft	Total Number	Numb of Culve	Size of		Number of Bridges	Length of Bridge, ft	Total Number	Number of r Culverts	Size of	Type of Culvert	Number of Bridges	Length of Bridge, ft	Total Number	Number of Culverts	Size of Culvert	Type Culve		Length of
Sueam	miles	Side	Number	Curvents		not crosse	-	Bridge, it	Number	Cuive		not crossed	-	Bridge, it	Number	Cuiverta		not crossed	-	Bridge, it	Number	Cuiverts	Stream is r			jes blidge, it
Unnamed Tributary to Richland Creek	0.46	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	i				Stream is	not crossed	1				Stream is r	not cros	sed	
Richland Creek	12.6	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	l				Stream is r	not cros	sed	
Hickory Creek	85.3	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	i				Stream is	not crossed	I				Stream is r	not cros	sed	
Kaskaskia River	1944	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Fish Lake Ditch	0.07	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	1				Stream is r	not cros	sed	
Unnamed Tributary of Raccoon Creek #1	0.94	Mainline Side Total	1 0 1	1 0 1	1 @ 10: 0 	6 box 	0 0 0	0 0 0	1 0 1	1 0 1	1 @ 10: 0 	6 box 	0 0 0	0 0 0	1 0 1	1 0 1	1 @ 10 x 0 		0 0 0	0 0 0			Stream is r	not cros	sed	
Unnamed Tributary of Raccoon Creek #2	0.71	Mainline Side Total	3 0 3	3 0 3	3@8x 0 	7 box 	0 0 0	0 0 0	3 0 3	3 0 3	3@8x 0 	7 box 	0 0 0	0 0 0	3 0 3	3 0 3	3@8x7 0 		0 0 0	0 0 0			Stream is r	not cros	sed	
Unnamed Tributary of Raccoon Creek #3	0.45	Mainline Side Total		1	This Site n	o longer exi	sts.			•	This Site n	o longer exis	its.				This Site no	longer exist	ts.	•		Т	his Site no	longer e	xists.	
Unnamed Tributary of Bear Creek #1	0.75	Mainline Side Total	3 0 <b>3</b>	3 0 <b>3</b>	3@5x 0 	5 box  	0 0 <b>0</b>	0 0 0	3 0 <b>3</b>	3 0 3	3@5x 0 	5 box 	0 0 <b>0</b>	0 0 <b>0</b>			Stream is	not crossed	l				Stream is r	not cros	sed	
Bear Creek	28.5	Mainline Side Total	1 0 <b>1</b>	0 0 0	0		1 0 <b>1</b>	170 0 <b>170</b>	1 0 <b>1</b>	0 0 0	0		1 0 1	170 0 <b>170</b>	1 0 <b>1</b>	0 0 0	0		1 0 1	170 0 <b>170</b>			Stream is r	not cros	sed	
Unnamed Tributary to Hoffman Creek	1.05	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	4				Stream is	not crossed					Stream is r	not cros	sed	
Unnamed Tributary of Vandalia Lake #1	0.97	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Unnamed Tributary of Vandalia Lake #2	0.93	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Unnamed Tributary of Vandalia Lake #3	5.38	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Unnamed Tributary of Kaskaskia River	0.89	Mainline Side Total	1 0 <b>1</b>	0 0 0	0		1 0 1	100 0 <b>100</b>	1 0 <b>1</b>	0 0 0	0		1 0 1	100 0 <b>100</b>	1 0 <b>1</b>	0 0 <b>0</b>	0		1 0 <b>1</b>	100 0 <b>100</b>			Stream is r	not cros	sed	
Unnamed Tributary of Vandalia Lake #4	1.3	Mainline Side Total		•	Stream is	not crosse	d				Stream is	not crossed	ł	•		•	Stream is	not crossed					Stream is r	not cros	sed	
Bear Creek	3.75	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	l				Stream is r	not cros	sed	
Unnamed Tributary of Vandalia Lake #5	0.98	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros:	sed	
Unnamed Tributary to Hurricane Creek	1.67	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Hoffman Creek	7.16	Mainline Side Total	1 0 <b>1</b>	0 0 0	0		1 0 1	95 0 <b>95</b>	1 0 <b>1</b>	0 0 0	0		1 0 1	95 0 <b>95</b>	1 0 <b>1</b>	0 0 0	0		1 0 1	95 0 <b>95</b>			Stream is r	not cros	sed	
Ramsey Creek	95.9	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	3				Stream is	not crossed					Stream is r	not cros	sed	
Unnamed Tributary of Ramsey Creek #2	0.73	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed					Stream is r	not cros	sed	
Ash Creek	6.63	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed					Stream is r	not cros	sed	
Unnamed Tributary S. of Little Creek	2.13	Mainline Side Total			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	I				Stream is r	not cros	sed	
Unnamed Tributary N. of Little Creek	0.5	Mainline Side			Stream is	not crosse	d				Stream is	not crossed	ł				Stream is	not crossed	l				Stream is r	not cros	sed	

					V	Alt2					VA	Alt3					VA	lt4					CS-	Alt 1		
	Upstream of	Mainline																								
	US 51	Freeway or																								
	Crossing	Side		Number			Number			Number			Number			Number			Number			Number			Number	
	Area (square		Total	of	Size of	Type of		Length of		of	Size of	Type of	of	Length of	Total	of	Size of	Type of		Length of		of	Size of	Type of		Length of
Stream	miles)	Crossing	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Culvert	Culvert	Bridges	Bridge, ft
		Total																								
Matney Branch	2.05	Mainline																								
		Side			Stream is	not crossed					Stream is r	not crossed					Stream is r	not crossed					Stream is r	not crossed		
		Total																								
Opossum Creek	10.9	Mainline																								
		Side			Stream is	not crossed					Stream is r	not crossed					Stream is r	not crossed					Stream is r	not crossed		
	1	Total																								
			10	7			3	365	10	7			3	365	7	4			3	365	1	0			1	40

Note: Culvert sizes will be finalized upon completion of drainage ar

| US 51 Freew<br>(sosing<br>a (square<br>5.74 Main<br>3.88 Main<br>3.88 Main<br>3.87 Main<br>50<br>3.57 Main<br>50<br>1.01 Main<br>51<br>1.01 Main<br>51<br>10.7 Main<br>10.7 Main<br>10             | inline infiline state  | Number<br>of<br>Culverts  | Stream is i<br>Stream is i<br>Stream is i   | Type of<br>Culvert<br>not crossed<br>not crossed<br>not crossed<br>not crossed<br>not crossed   |   | Length of<br>Bridge, ft   | Total<br>Number  
   
  | Number<br>of<br>Culverts  | Size of<br>Culvert<br>Stream is r<br>Stream is r  | ot crossed   
   | Number<br>of<br>Bridges  | Length of<br>Bridge, ft   | Total<br>Number   |  
   | Stream is r  | Type of<br>Culvert   | Number<br>of<br>Bridges  | Length of<br>Bridge, ft  |   
   |
|--|---|---|---|---|---|---
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--|--|---|---|--|--
--|--|--|---|
| a (square Street<br>miles) Cros<br>5.74 Mair<br>5.73 Mair<br>3.88 Main<br>3.87 To<br>3.87 Mair<br>3.57 Mair<br>3.57 Mair<br>3.57 Mair<br>3.57 Mair<br>1.01 Mair<br>50<br>To<br>1.01 Mair<br>1.01 Mair<br>51<br>To<br>1.01 Mair<br>51<br>To<br>1.01 Mair<br>51<br>To<br>1.01 Mair<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51<br>51   | tr/Ramp Total<br>sssing Number<br>dial  | of  | Culvert<br>Stream is i<br>Stream is i<br>Stream is i<br>Stream is i<br>Stream is i  | Culvert<br>not crossed<br>not crossed<br>not crossed<br>not crossed   | of<br>Bridges   |   |   
   
   | of  | Culvert<br>Stream is r<br>Stream is r   | Culvert<br>ot crossed<br>ot crossed   
  | of   
   |   |   | of<br>Culverts   | Culvert<br>Stream is r<br>Stream is r  | Culvert<br>not crossed  
  | of   |  | of Pier<br>0  |
| 5.74 Mair<br>Si<br>To<br>3.88 Mair<br>Si<br>To<br>3.57 Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>1.01 Mair<br>1.01 Mair<br>Si<br>1.01 Mair<br>1.01 Mair<br>1. | iniline<br>Side<br>dotal<br>iiniline<br>Side<br>dotal<br>iiniline<br>Side<br>dotal<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>side<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal<br>dotal | r Culverts  | Stream is i<br>Stream is i<br>Stream is i<br>Stream is i<br>Stream is i   | not crossed<br>not crossed<br>not crossed<br>not crossed  |   | ן אומפפ, ft   | Number   
   
  | Cuiverts  | Stream is r<br>Stream is r  | ot crossed<br>ot crossed   
   | Bridges  | Bridge, ft  | Number   
  |  | Stream is r<br>Stream is r   | not crossed  | Bridges   
                  | Lisuage, ft  | 0   |
| Si<br>To<br>3.88 Mair<br>Si<br>To<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>Mair<br>Si<br>Si<br>To<br>Mair<br>Si<br>Si<br>To<br>Mair<br>Si<br>Si<br>To<br>Mair<br>Si<br>Si<br>To<br>Mair<br>Si<br>Si<br>To<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>To<br>Si<br>Si<br>Si<br>Si<br>Si<br>Si<br>Si<br>Si<br>Si<br>Si  | Side otal inline iside otal inline inline iside otal inline inline inline iside otal inline i  |   | Stream is i<br>Stream is i<br>Stream is i<br>Stream is i<br>Stream is i   | not crossed<br>not crossed<br>not crossed<br>not crossed  |   |   |  
   
  |   | Stream is r   | ot crossed   
   |  |   | | | | | |
  |  | Stream is r  | not crossed  |   
  |  | -   |
| 3.88 Mair<br>Si<br>Si<br>3.57 Mair<br>Si<br>To<br>Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>0<br>10.7 Mair  | iniline di liniline di linilin  |   | Stream is i<br>Stream is i<br>Stream is i<br>Stream is i  | not crossed   |   |   |   
   
   |   |   | | | | | |
  |  |   |   
   |  |  |  |  
   |  | 0   |
| To           3.57         Mair           Si         To           Mair         Si           To         Mair           Si         To           1.01         Mair           1.01         Mair           173         Mair           173         Mair           Si         To           10.7         Mair           Si         To           6.45         Mair   | inline inline iside otal inline inline inline inline inline 1   |   | Stream is i<br>Stream is i<br>Stream is i<br>Stream is i  | not crossed   |   |   |   
   
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   |   |   |  |  | | | |
  |  |  | 1   |
| Si<br>To<br>Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>10.7 Mair<br>Si<br>Si<br>To<br>10.7 Mair<br>Si<br>Si<br>To<br>6.45 Mair   | Side otal inline  |   | Stream is n<br>Stream is n<br>Stream is n   | not crossed   |   |   |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  |  | | | |
  |  |  | 1   |
| To           Main           Si           To           Main           Si           To           1.01           Main           Si           To           173           Main           Si           To           10.7           Main           Si           To           50           6.45  | inline<br>iinline<br>iinline<br>iinline<br>iinline<br>iinline<br>iinline<br>iinline<br>1  |   | Stream is n<br>Stream is n<br>Stream is n   | not crossed   |   |   |   
   
   |   | Stream is i   | ol ciosseu  
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   |   |   |  | Stream is r  | | | |
  |  |  |   |
| Si<br>To<br>Mair<br>Si<br>To<br>1.01 Mair<br>Si<br>To<br>173 Mair<br>Si<br>To<br>10.7 Mair<br>Si<br>Si<br>Co<br>5 To<br>5 To<br>5 To<br>5 To<br>5 To<br>5 To<br>5 To<br>5 T  | inline 1<br>inline inline 1  |   | Stream is r   | not crossed   |   |   |  
   
  |   |   |  
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  |   |   |  | Stream is i  | ioi ciusseu  
   |  |  | <b> </b>  |
| Si 170<br>1.01 Mair<br>Si 170<br>173 Mair<br>173 Mair<br>173 173<br>10.7 Mair<br>Si 10<br>10.7 Mair<br>Si 10<br>10.7 Mair  | Side<br>total<br>infilme<br>Side<br>total<br>infilme<br>Side<br>total<br>infilme<br>1   |   | Stream is i   |   |   |   |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  | Stream is r  | not crossed   
  |  |  |   |
| 173 Mair<br>Si<br>173 To<br>10.7 Mair<br>6.45 Mair   | Side<br>iotal<br>iinline<br>Side<br>iotal<br>iinline 1  |   |   | not crossed   |   |   |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  | Stream is r  | not crossed   
  |  |  |   |
| To           173         Mair           Si         To           10.7         Mair           10.7         Mair           5         To           6.45         Mair   | iotal<br>iinline<br>Side<br>iotal<br>iinline 1  |   |   |   |   |   |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  | Stream is r  | not crossed   
  |  |  | 0   |
| 10.7 Main<br>Si<br>To<br>6.45 Main   | Side<br>otal inline 1   |   | Stream is r   |   |   |   |   
   
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  |  |  |   |
| 10.7 Mair<br>Si<br>6.45 Mair   | inline 1  |   | Stream is i   | not oronood   |   |   |   
   
   |   | Ctroom in r   | ot orogood  
  |  
   |   |   |  | Ctroom in .  | ot orogood  
  |  |  | 2   |
| 5i<br>To<br>6.45 Mair  |   | 1   |   | not crossed   |   |   |   
   
   |   | Stream is r   | or crossed  
  |  
   |   |   |  | Sileann IS I   | not crossed   
  |  |  |   |
| 5i<br>To<br>6.45 Mair  |   | 1   |   |   |   |   |   
   
   |   |   |   
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  |  |  |   |
| 5i<br>To<br>6.45 Mair  |   |   |   |   |   | 100   |   
   
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  |  |  |   |
| 6.45 Mair  | Side 0  | 0   | 0   | 0   | 1   | 100   |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  | Stream is r  | not crossed   
  |  |  | 2   |
|  | inline 1  | 0   | 0   | 0   | 1   | 100   |   
   
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  |  |  | 0   |
|  | Side 0  | 0   | 0<br>0  | 0   | 0   | 40  |   
   
   |   | Stream is r   | ot crossed  
  |  
   |   |   |  | Stream is r  | not crossed   
  |  |  | U   |
|  |   | 0   |   |   | 1   | 40  |   
   
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  |  |  |   |
| Si   | Side  |   |   |   |   |   |   
   
   |   | Stream is r   | ot crossed  
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   |   |   |  | Stream is r  | not crossed   
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| Si   | Side  |   | Stream is r   | not crossed   |   |   |   
   
   |   | Stream is r   | ot crossed  
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   |   |   |  | Stream is r  | not crossed   
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|  | Side     Stream is not crossed     Stream is not crossed  |   |   |   |   |   |   
   
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  |  |  |   |
|  | Total     Image: Constraint is not crossed     Stream is not crossed       Side     Stream is not crossed     Stream is not crossed       Mainline     Stream is not crossed     Stream is not crossed       Side     Stream is not crossed     Stream is not crossed   |   |   |   |   |   |   
   
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|  |   |   | Stream is i   | not crossed   |   |   |   
   
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| 3.02<br>5.37<br>0.38<br>4.88<br>39.6<br>1.03<br>19.5   | \$           Max           T           Max           T           Max           T           Max           T           Max           T           T           T           T           T           T           T           T           T           T           T           T           T           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T           S           T      S <tr td=""></tr>   | .2     Mainline<br>Side<br>Total       Mainline<br>Side     Side       Total     Mainline<br>Side       Total     Mainline<br>Side       2     Mainline<br>Side       7     Mainline<br>Side       5     Mainline<br>Side       5     Mainline<br>Side       6     Mainline<br>Side       7     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Mainline<br>Side<br>Total     Stream is not crossed     Stream is not crossed       .4     Mainline<br>Side<br>Total     Stream is not crossed     Stream is not crossed | Side<br>Total     Mainline<br>Side     Stream is not crossed     Stream is not crossed       2     Mainline<br>Side<br>Total     Stream is not crossed     Stream is not crossed       Mainline<br>Side<br>Total     Stream is not crossed     Stream is not crossed       Mainline<br>Side<br>Total     Stream is not crossed     Stream is not crossed       Mainline<br>Side     Stream is not crossed     Stream is not crossed       Mainline<br>Side     Stream is not crossed     Stream is not crossed       Mainline<br>Side     Stream is not crossed     Stream is not crossed       Mainline<br>Side     Stream is not crossed     Stream is not crossed       7     Mainline<br>Side     Stream is not crossed     Stream is not crossed       7     Mainline<br>Side     Stream is not crossed     Stream is not crossed       7     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	1				CS	Alt 2					RC	O-A					RC	со-в			
Stream	Upstream of US 51 Crossing Area (square miles)	Mainline Freeway or Side Street/Ramp Crossing	Total Number	Number of Culverts	Size of Culvert	Type of Culvert	Number of Bridges	Length of Bridge, ft	Total Number	Number of Culverts	Size of Culvert	Type of Culvert	Number of Bridges	Length of Bridge, ft	Total Number	Number of Culverts	Size of Culvert	Type of Culvert	Number of Bridges	Length of Bridge, ft	Numbe of Piers
		Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary to Richland Creek	0.46	Total Mainline Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Richland Creek	12.6	Total Mainline Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Hickory Creek	85.3	Total Mainline Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			4
Kaskaskia River	1944	Total Mainline Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			7
Fish Lake Ditch	0.07	Total Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Unnamed Tributary of Raccoon Creek #1	0.94	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Unnamed Tributary of Raccoon Creek #2	0.71	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Unnamed Tributary of Raccoon Creek #3	0.45	Mainline Side Total		Т	This Site no	longer exist	s.			I	his Site no	longer exist	s.			-	This Site no	longer exist	IS.		
Unnamed Tributary of Bear Creek #1	0.75	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Bear Creek	28.5	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			1
Unnamed Tributary to Hoffman Creek	1.05	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary of Vandalia Lake #1	0.97	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary of Vandalia Lake #2	0.93	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary of Vandalia Lake #3	5.38	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary of Kaskaskia River	0.89	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			2
Unnamed Tributary of Vandalia Lake #4	1.3	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Bear Creek	3.75	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Unnamed Tributary of Vandalia Lake #5	0.98	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			
Unnamed Tributary to Hurricane Creek	1.67	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Hoffman Creek	7.16	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed						not crossed			2
Ramsey Creek	95.9	Mainline Side Total			Stream is	not crossed			1 0 1	0 0 0	0 0 		1 0 <b>1</b>	235 0 235	1 0 <b>1</b>	0 0 0	0 0 		1 0 1	235 0 235	4
Unnamed Tributary of Ramsey Creek #2	0.73	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Ash Creek	6.63	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			1
Unnamed Tributary S. of Little Creek	2.13	Mainline Side Total			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0
Unnamed Tributary N. of Little Creek	0.5	Mainline Side			Stream is	not crossed					Stream is r	not crossed					Stream is	not crossed			0

			CS-Alt 2						RCO-A						RCO-B						
	Upstream of US 51 Crossing Area (square	Mainline Freeway or Side Street/Ramp	Total	Number of	Size of	Type of Culvert	Number of	Length of		Number of Culverts	Size of	Type of		Length of		Number of	Size of Culvert	Type of Culvert	Number of	Length of	
Stream	miles)	Crossing Total	Number	Culverts	Culvert	Cuivert	Bridges	Bridge, ft	Number	Cuiverts	Culvert	Culvert	Bridges	Bridge, ft	Number	Culverts	Cuivert	Cuivert	Bridges	Bridge, ft	of Piers
Matney Branch	2.05	Mainline	Stream is not crossed																	0	
		Side						Stream is not crossed					Stream is not crossed								
Opossum Creek	10.9	Total Mainline																			2
		Side			Stream is r	not crossed					Stream is r	not crossed					Stream is r	not crossed			1
		Total																			
	2	0			2	140	1	0			1	235	1	0			1	235	37		

Note: Culvert sizes will be finalized upon completion of drainage ar

# **APPENDIX D**

