APPENDIX A – DARBY CREEK SOILS DATA - HIGHLY ERODIBLE

Big Darby Creek Headwaters Soils – Map A-1

The erodibility of soils in this watershed are largely controlled by the Powell Moraine in Union County and slope in parts of Champaign and Logan Counties. The line of highly erodible soils (red areas) that sweep through Union County marks the edge of the Powell Moraine and steeper slopes approaching Big Darby Creek. The soils associated with the Powell Moraine are composed of clayey soils that are more susceptible to erosion. The soils in Champaign and Logan County have considerable amounts of highly erodible soils largely associated with steeper slopes than the other parts of this subwatershed. Approximately 14.2 percent of soils, the most of four subwatersheds, are highly erodible.

Middle Big Darby Creek Soils – Map A-2

Soils in this small watershed, approximately 50,000 acres, are in the heart of the Darby Plains soils which have less clay than those in Union County. Slope near Big Darby Creek is the major factor contributing to the few highly erodible soils in this subwatershed. Over 77 percent of the soils in this watershed are not highly erodible.

Little Darby Creek Watershed – Map A-3

This watershed begins in the sloping regions of Champaign County and then flows through the flat portion of Madison County into the Big Darby Creek in western Franklin County. The soils in the Little Darby Creek Watershed in Champaign County have a considerable amount of highly erodible soils because of steep slopes. The remainder of the highly erodible soils in the county remain within the sloping regions of the stream corridor.

Lower Big Darby Creek Soils – Map A-4

The Lower Big Darby Creek soils begin to slope more than those in the central portion of the watershed. Slope is the major limiting factor for the erodibility of soils in this watershed. About 45 percent of soils in this watershed are considered either highly erodible or potentially erodible.

APPENDIX B – DARBY CREEK SOILS DATA - SLOPE

Big Darby Creek Headwaters Soils – Map B-1

In Champaign and Logan counties a large number of the soils have slopes between 2 and 12 percent and steeper slopes between 12 and 25 percent possible next to streams. In Union County the Powell Moraine controls much of the topography. North of the moraine a majority of soils have slopes of 2 to 6 percent but south of Big Darby Creek the soils only have slopes between 0 and 2 percent.

Middle Big Darby Creek Soils – Map B-2

This watershed is dominated by flat to nearly flat soils. Only 22 percent of the watershed has slopes over 2 percent. The slopes generally increase closer to Big Darby Creek. Steep slopes are common along Big Darby Creek in the southern portion of this watershed.

Little Darby Creek Watershed – Map B-3

This watershed begins in Champaign County with most slopes between 2 and 12 percent. Portions of northwest Madison County and southwest Union County are nearly level. The remainder of the watershed along Little Darby Creek generally has slopes between 0 and 6 percent with steep slopes along the stream.

Lower Big Darby Creek Soils – Map B-4

The lower portion of Big Darby Creek has a wide range of slopes. The northern half of the Hellbranch watershed is nearly level whereas along the Big Darby Creek, slopes greater than 25 percent are possible. More than 3 percent of soils in this watershed have slopes greater than 25 percent, considerably more than any of the other subwatersheds.

APPENDIX C – DARBY CREEK SOILS DATA - PRIME FARMLAND

Big Darby Creek Headwaters Soils – Map C-1

In Champaign and Logan Counties a fairly high percent of soils are not prime because of steep slopes. Areas of this watershed near Big Darby Creek are rated prime for agricultural purposes. In the remaining portions, most soils are prime if properly drained. Union County also represents the only county in the watershed that defines soils of local importance. Soils included in this definition are those that would normally not be included as prime but are still recognized as productive soils in Union County.

Middle Big Darby Creek Soils – Map C-2

The majority of land in the Middle Darby Creek watershed is rated "prime if drained." Only a few soils near Big Darby Creek are rated as "all prime." The soils that are not prime are those with steep slopes along the creek.

Little Darby Creek Watershed – Map C-3

The farmland ratings in this watershed are dominated by land that is "prime if drained" in Madison County. In the hilly portions of Champaign County slope limits the productivity of farmland. Soils rated as "all prime" are centered along the Little Darby Creek and into Champaign County.

Lower Big Darby Creek Soils – Map C-4

Nearly half of the watershed has soils that are "prime if drained" and those are generally in the outer reaches of this watershed and in Franklin County. The steeply sloping soils along the Big Darby are rated "not prime."

APPENDIX D – COUNTY MAINTAINED DITCHES

Appendix D - County Maintained Ditches		
County	*Stream Name*	*Distance Maintained*
Champaign	Jumping Run Ditch	1.01
	McMullen Ditch (Howard Run)	3.13
	Fullington Ditch	2.49
	Crowder Ditch	.83
Pickaway	Greenbrier Run	4.26
	Georges Run	.51
	Springwater Run	.152 (803 ft)
Union	Bailey Ditch	0.24
	Bown Ditch	0.64
	Hay Run	2.70
	L.R. Sugar Run	5.14
	Post Road Ditch	0.01
	Priarie Run	2.23
	S.C.S Sugar Run	5.50
	Wildcat Pond Ditch	0.73
Madison	Bales Ditch	2.81
	Ballenger-Jones Ditch	4.43
	Barron Run	3.92
	Bidwell Ditch No. 2	2.39
	Bidwell-Bridenstine Ditch	0.99
	Bridgman Ditch	1.32
	Chenoweth Ditch	1.41
	Cleo Florence Ditch	1.34
	D.A. Fitzgerald Ditch	4.45
	Dun Ditch	2.20
	Ella Beach Ditch	1.15
	Hamilton Ditch	1.63
	Heafey Ditch	1.31
	John Gordon Ditch	0.90
	Lucas Ditch	0.50
	Milliken Ditch	0.70
	Monroe Ditch	0.18
	Powell Ditch	2.72
	Sanford Ditch	0.70

	Sweeney Run Joint	1.15
	Wamp Ditch	3.39
	Wilson, A.W. Ditch	1.99
	Worthington Ditch	3.11
	Yutzy Ditch	3.90
Totals	**39 County Ditches**	**78.18**

APPENDIX E – PUBLIC WATER SUPPLIES

Map D - 1. Public Well Supplies – Logan

Map D - 2. Public Well Supplies – Union

Map D - 3. Public Well Supplies – Champaign

Map D - 4. Public Well Supplies – Madison

Map D - 5. Public Well Supplies – Franklin

Map D - 6. Public Well Supplies - Pickaway

APPENDIX F – OHIO HISTORICAL LOCATIONS

Figure 55: Locations in Darby Watershed on National Historic Registry

County	*City*	*Name*	*Other Name*	*Significant Year*
Union	North Lewisburg	The Fort	Gabbard property	1877
Union	Marysville	Reed Covered Bridge		
Union	Irwin	Elmwood Place		1868
Champaign	Mechanicsburg	Barr House	Davis House	1860
Champaign	Mechanicsburg	Henry Burnham House	Dr. Ream's Office	1860
Champaign	Mechanicsburg	Church Of Our Savior		1893
Champaign	Mechanicsburg	Dr. Clark House		1875
Champaign	Mechanicsburg	William Culbertson House		1875
Champaign	Mechanicsburg	Demand-Gest House		1900
Champaign	Mechanicsburg	Hamer's General Store		
Champaign	Mechanicsburg	Norvall Hunter Farm	Model Stock Farm	1850
Champaign	Mechanicsburg	Kimball House	Doerman Residence	1897
Champaign	Mechanicsburg	Magruder Building	Saxbe Offices	1881
Champaign	Mechanicsburg	Masonic Temple		1909
Champaign	Mechanicsburg	Mechanicsburg Baptist Church	Methodist Protestant Church	1890
Champaign	Mechanicsburg	Dr. Ninchelser House	IOOF Lodge	1893
Champaign	Mechanicsburg	Second Baptist Church	Methodist Church	1858
Champaign	Mechanicsburg	St. Michael Catholic Church		1888
Champaign	Mechanicsburg	United Methodist Church	Methodist Episcopal Church	1893
Champaign	Mechanicsburg	Village Hobby Shop	Trader's Bank; Schetter's Jewelry	1880
Champaign	Mechanicsburg	Lowler's Tavern	D. Padamaden Offices	1830
Champaign	Mechanicsburg	Mechanicsburg Historic Dist.		
Champaign	Mechanicsburg	Maj. John C. Baker House		1880
Madison	Plain City	Farmers National Bank		1902
Madison	Plain City	Price Corners		1871

Source: *Ohio Historical Society, 2004*

Champaign County

Franklin County

Madison County

Pickaway/Logan County

Union County

Appendix F - Historical Locations

Darby Watershed - Champaign County Ohio Historical Inventory, 2003

Location	Present Name	Other Name (1)	Other Name (2)	Date
Mechanicsburg	2nd Baptist Church	Methodist Church		1858
Mechanicsburg	African Methodist Episcopal Church			1881
Mechanicsburg	Anderson's Clothing Store	Culbertson Grocery		1880
Mechanicsburg	Cain House	Sceva House	Davis and Byers Funeral Home	1878
Mechanicsburg	Church of Our Savior			1893
Goshen Township	Civil, Span.- Amer., & WWI Monument			1901
Mechanicsburg	Custom Printing Hills Gifts	The Telegram		1937
Mechanicsburg	D. Padamaden Offices	Lawler's Tavern		1830
Mechanicsburg	Davis House	Barr House		1860
Mechanicsburg	Doerman House	Kimball House		1897
Mechanicsburg	Dohron Wilson Elementary School	Mechanicsburg Union School		1894
Mechanicsburg	Don's Barber Shop	Orla Shaw's Drug Store		1877
Mechanicsburg	Dr. Ream House			1890
Mechanicsburg	Dr. Ream's Office	Henry Burnham House		1860
North Lewisburg	Friends Church & Cemetrery			1872
Mechanicsburg	Hatcher Hotel	Darby House	Anderson Inn	1874
Mechanicsburg	Holland's Hardware			1880
Mechanicsburg	Holland's Hardware N. Section	Hupp Funeral Home and Furn. Store		1880
Mechanicsburg	Home Savings Bank	Taylor Building	Central Bank	1885
Mechanicsburg	IOOF Lodge	Dr. Ninchelser House		1893
Mechanicsburg	James Hunt House	Levi Rathbun House		1850
Mechanicsburg	Joseph E. Wing Memorial Library			1940
Mechanicsburg	Laird's Tax Service	Michael's Pizza	Odd Fellows Building	1870
Mechanicsburg	Margo's Beauty Salon	Leidy Candy Store		1880
Mechanicsburg	Masonic Temple			1909
Mechanicsburg	Mechanicsburg Baptist Church	Methodist Protestant Church		1890
Mechanicsburg	Mechanicsburg Park			
Mechanicsburg	Mennonite Church	Burnham Family House		1880
Mechanicsburg	Norval Hunter Farm	Model Stock Farm		1850
Mechanicsburg	Ohio Grain Elevators			1900

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Appendix F - Historical Locations

Location	Present Name	Other Name (1)	Other Name (2)	Date
Mechanicsburg	Saxbe Offices	Magruder Building		1881
Mechanicsburg	St. Michael Catholic Church			1888
Mechanicsburg	United Methodist Church	Methodist Episcopal Church		1894
Mechanicsburg	Village Hobby Shop	Trader's Bank	Schetter's Jewelry Store	1880
Mechanicsburg		Brown House		1875
Mechanicsburg		Bunker Property		1880
Mechanicsburg		Colwell House		1885
Mechanicsburg		Creamer House		1880
Mechanicsburg		Demand-Gest House		1900
Mechanicsburg		Dr. Clark House		1875
Mechanicsburg		Dr. Hathaway House		1890
Mechanicsburg		Hamer's General Store		1890
Mechanicsburg		Hupp House		1870
Mechanicsburg		John Liedy House		1870
Mechanicsburg		John Robinson House	Ben Linville House	1880
Mechanicsburg		Legge House		1895
Mechanicsburg		Major John C. Baker House		1880
Mechanicsburg		Mathew's House	Legge House	1900
Mechanicsburg		McFarland House		1865
Mechanicsburg		Mitchell House		1880
Mechanicsburg		Molly S. Kennedy House	Episcopal Rectory	1900
Mechanicsburg		Moore House		1890
Mechanicsburg		Peter Colwell House		1880
Mechanicsburg		Samuel Cheney House		1880
Mechanicsburg		William Culbertson House		1875
Mechanicsburg	**Another 61 Sites with No Names between the years of 1835 and 1910**			

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Appendix F - Ohio Historical Sites

Darby Creek Watershed - Franklin County Ohio Historical Inventory, 2003

Location	Present Name	Other Name	Date
Alton	National Road Mile Marker 269	National Road Mile Marker 269	1860
Alton	National Road Mile Marker 267	National Road Mile Marker 267	1860
Brown (Township of)	Derrer Building	Hurd Building	1910
Brown (Township of)	Freshcorn House		1880
Brown (Township of)	Fry House	Hamilton House	1870
Brown (Township of)	Fry Barn	Hamilton Barn	1870
Brown (Township of)			1900
Brown (Township of)	Arnold House		1903
Brown (Township of)	Hatton House	Beach House	1865
Brown (Township of)	Balsiger House		1870
Brown (Township of)	Reid House	Carter House	1860
Brown (Township of)	Reid Barn	Carter Barn	1860
Brown (Township of)	Shoemaker House		1850
Columbus	Manning Farm #2		1890
Columbus	Manning Farm #1		1875
Darbydale	McKinley Log House		1840
Galloway	John West House	Adams House	1870
Galloway	Big Tony's Pizza Carryout	Fulton Brother's Store	1875
Galloway	Ernest Tyler House	Peter's Place	1885
Galloway	Gerald Grooms House	Carlson Farm	1875
Galloway	Frank L Wilcox Farm	Thompson Place	1870
Galloway	Everett Hensley House	Jess Byrum	1880
Galloway	Mrs Henley House	Clay House	1880
Galloway	Gutheil Residence		1930
Grove City	Lawrence Beavers Farm	Charles Cropp Farm	1870
Harrisburg	Andy Carne House	The Castle	1890
Hilliard	Derrer House		1860
Hilliard	Slyh House	Carter House	1820
Hilliard	Anderson House		1860
Hilliard	Bishop House		1860
Hilliard	Cunard House		1860
Hilliard			1880

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Appendix F - Ohio Historical Sites

Location	Present Name	Other Name	Date
Hilliard			1860
Hilliard	Trakavich Root Cellar	Hillburn Building	1870
Hilliard	Old Caldwell Methodist Church		1865
Hilliard		Old Clover House	1870
Hilliard	Jones House		1840
Hilliard	Francis House		1860
Hilliard	Deer House		1885
Hilliard	Raymond Roberts House		1870
Hilliard	Yost House	Jerman House	1850
Hilliard	Barrett House	Herbert House	1880
Hilliard	Emmelainz House	Jones House	1870
Hilliard	Cosgray Road School		1850
Hilliard	Jerman House		1920
Hilliard	Turnbell and Halley House		1920
Hilliard	Darby Creek Nursery and Landscape		1840
Hilliard	Fox House		1890
Hilliard	Akers House	VanSchoyck House	1860
Mudsock	Sturgill House	Jones House	1850
Pleasant (Township of)	Lawrence Gill Log House	Albert Lightfoot Log House	1840
Pleasant (Township of)			1850
Pleasant (Township of)	Foyd House	Haye House	1840
Pleasant (Township of)	Toland House		1860
Pleasant (Township of)	Gardner Log House		1805
Pleasant (Township of)	Frank H. Wilson Farm	Otto Schilling Farm	1890
Pleasant (Township of)	Walter Willing House	Kientz House	1885
Pleasant (Township of)			1875
Prairie (Township of)	Dr. J. M. Phillips		1910
Prairie (Township of)			1840
Prairie (Township of)	Walter S Cook House	Courtright House & Farm	1875
Prairie (Township of)	Wilcox House	Joseph O'Harra House	1860
Prairie (Township of)	Gravity Flow Water Tank	George Early Farm	1920
Prairie (Township of)	Erwin House	Ingalls Farm	1900

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Appendix F - Ohio Historical Sites

Darby Watershed - Madison County — Ohio Historical Inventory, 2003

Location	Present Name	Other Name (1)	Other Name (2)	Date
Amity	Erb House	Finch House	Worthington House	1830
Amity	Carter-Long Hse	Harris House		1870
Amity	Edgington House	Jacob Taylor House		1870
Amity	Roar House			1920
Amity	Sweeney House			1950
Canaan (Township of)	Giesecke-Shelley Hse	Henry Alder Hse		1850
Canaan (Township of)	Troyer House	Cutler House		1860
Canaan (Township of)		John Millikin House		1860
Canaan (Township of)	Pleasant Valley Stables	Millikin Barn		1860
Canaan (Township of)		Big Darby Baptist Church		1861
Canaan (Township of)	Millard Yoder Home	Price House		1880
Canaan (Township of)	Canaan Fellowship Cch & Cemetery			1900
Darby (Township of)	May Flag Farm			1818
Darby (Township of)	Starbuck-Crago House	Black Farm		1850
Darby (Township of)	Orr Residence			1864
Darby (Township of)	Garber Residence	Cary House		1865
Darby (Township of)	Alvin & Mary Troyer Hse			1870
Darby (Township of)	Joan E Miller House			1880
Darby (Township of)	Elton & Elizabeth Rausch Outbldgs			1880
Darby (Township of)	Fannie Plank Home			1910
Plain City	Gibson Residence			1832
Plain City	Florence Property	Old Post Road Inn		1840
Plain City	Stoker Residence			1840
Plain City	Horch Residence			1843
Plain City	Plain City Florist			1850
Plain City	The Plain City Implement Co			1860
Plain City	Norris MD Property			1860
Plain City	Woodard Shop Equipment Sales	Church Building		1860
Plain City	McCune Block			1868
Plain City	Smucker Residence			1870
Plain City	Wolfe's Ideal Lunch	Beany Millers		1870
Plain City	Madison St. Mission			1875
Plain City	Charles Stoker Property	Fiedler Bros. Grocery		1875
Plain City	Plain City Municipal Building	Chillicothe St. School		1876

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Appendix F - Ohio Historical Sites

Location	Present Name	Other Name (1)	Other Name (2)	Date
Plain City	Plain City Depot	Pleasant Valley Depot		1880
Plain City	John Geese Hardware	John P. Hall Hardware Yutzy Bro.	Tedricks Hardware	1880
Plain City	A.E. Drallen Residence/Office	Boby Manison		1880
Plain City	Victorian House Interiors			1880
Plain City	Residence			1880
Plain City	Yutzy Property			1880
Plain City	Bargin Mari/Houchard Oil	Bummel Ins.	Firestone Store	1880
Plain City	Plain City Restoration	Everitteits Hatchery Upholst.	Simon Hatchery	1880
Plain City	Radio Shack	Uhlman Building		1880
Plain City	Plain City Pharmacy	Hofbauer Meat Market	Stewart Building	1880
Plain City	Hager Residence			1880
Plain City	McCabe Property	Fee Bldg/Andrew's Garage	Princess Theatre	1880
Plain City	Wheeler Residence			1880
Plain City	Darby Creek Arms Limited			1880
Plain City	Super Duper/Lovejoy Apts.	Leonard Block		1880
Plain City	Spafford Residence	Toops Residence	Converseasa Residence	1880
Plain City	Residence			1880
Plain City	Log Homes	Black Building		1880
Plain City	Dr. Lee's Office	Dr. McCune's Office		1880
Plain City	Residence			1880
Plain City	Lemaster Residence			1880
Plain City	Wright Residence	Sheehananna Residence		1880
Plain City	Jan's Pizza House	Ferguson Funeral Home	Dr. E.C. Robinson	1880
Plain City	Residence			1885
Plain City	Residence			1885
Plain City	Al Slyh Residence	Hager		1885
Plain City	Church Of God	Universalist Church		1889
Plain City	Ralph Smucker Residence	Yoder		1890
Plain City	Residence			1890
Plain City	Residence			1890
Plain City	Lane Residence			1890
Plain City	Residence			1890
Plain City	Berry Ellis Residence			1890
Plain City	Henry Boats Inc.	Skiff Craft Boats	Stokely-Van Camp Cannery	1890
Plain City	Residence			1890

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Appendix F - Ohio Historical Sites

Location	Present Name	Other Name (1)	Other Name (2)	Date
Plain City	Vew Benial Property	Perry Residence		1892
Plain City	Plain City United Presbyterian	Church		1893
Plain City	Anderson/Saxbe Apartments	Smith Family Rest and Hotel	The Old Hotel, Sherwood House	1893
Plain City	Unknown	Ohio Municipal Light and Water		1895
Plain City	Sykes Residence			1899
Plain City	St. Joesph Catholic Church			1900
Plain City	Wolfe's Hotel	Friesner Hotel		1900
Plain City	Monroe Residence	Kilgore Residence		1900
Plain City	Donna's Town and Country Beauty	Salon	Dr. Homles Office	1900
Plain City	Howland Co Hardware/Town Clock	Howland Brothers Hardware	Barto and Keiser Hardware	1902
Plain City	The Farmer National Bank			1902
Plain City	Plain City Auction House	Pleasant Valley Senior Center	Gift Shop	1910
Plain City	Plain City Public Library	Chip and Clip Beauty Salon	Rialto Theater	1915
Plain City	Bishop Residence	Lamb Residence		1920
Plain City	Plain City Elem./Junior High School			1937
West Jefferson	National Road Mile Marker 272	National Road Mile Marker 272		1860
West Jefferson	David Angle House	Rocky Creek Ranch		1865
West Jefferson	C & C Auto Service	Sunset Oil Co	Texaco Station	1925
West Jefferson	B & B	Former US 40 Cottage Court		1940
West Jefferson	US 40 Concrete Box Culvert			1947
West Jefferson	US 40 Concrete Culvert	MAD-40-1073/MAD-40-1074		1960
West Jefferson	Blatter's Truck Patch/Carol's Gift Loft			1850
West Jefferson	National Road Mile Marker 278	National Road Mile Marker 278		1860
West Jefferson	Golden Brush	Star Hotel	Mantle House(?)	1860
West Jefferson		Alice L. Finley Memorial Center	OSU Experimental Farm	1875
West Jefferson				1876
West Jefferson	Used-2-Be's	Sidelines Pizza Bar & Grille	Rider's Towne	1880
West Jefferson	Mausoleum-Pleasant Hill Cemetery			1900
West Jefferson				1908
West Jefferson	Primo Paint Body	Rock Service Station	Robert H Ford Property	1925
West Jefferson	Dan's Auto Service	Standard Oil of Ohio Station		1935
West Jefferson				1940
West Jefferson	Henry's Restuarant			1948
West Jefferson	US 40 Concrete Culvert	MAD-40-1232		1960
West Jefferson	US 40 Concrete Culvert	MAD-40-1182		1960

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Appendix F - Historical Locations

Darby Watershed - Pickaway County Ohio Historical Inventory, 2003

Location	Present Name	Other Name (1)	Other Name (2)	Date
Circleville (Township of)	Old Circleville Waterworks			1885
Darbyville	Muhlenberg Township School			1930
Darbyville	Sarah & L. White House and Store	Dr. F.E. Ginder House & Office		1855
Darbyville	Darbyville Village Hall			1880
Darbyville	Commercial Building (vacant)	Stone Building		1890
Darbyville	Muhlenberg Township Hall			1900
Darbyville	Darbyville Methodist Episopal			1885
Darbyville	Miller Property			1880
Darbyville	Graybill Property			1850
Jackson (Township of)	Swearigen House	George C. Gerhatdt House	Bedinger Survey	1840
Orient (Morgan)	Harrisburg Farmers Exchange			1880

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Darby Watershed - Logan County Ohio Historical Inventory, 2003

Location	Present Name	Other Name	Date
Zane (Township of)	Union Chapel		1874
Zane (Township of)	Residence	H. Haines House	1850
Perry (Township of)	Cook Property		1890
Perry (Township of)	Green Property	M. Green Farmstead	1850

Appendix F - Ohio Historical Sites

Darby Watershed - Union County Ohio Inventory, 2003

Location	Present Name	Other Name	Date
Allen (Township of)	The Fort	Shepherd Clark House	1877
Arnold	Route 42 Residence		1868
Irwin	Elmwood Place	James Fullington House	1864
Jerome (Township of)	Unkeefer Property	Halfway House	1830
Liberty (Township of)	John & Rebecca Petee House		1900
Marysville	Elrich House		1870
Marysville		Hog House	1945
Milford Center	Robert's Apartments		1874
Milford Center	Union Township Fire Department		1916
Milford Center	Fairbanks Local Middle School	Union Township Public School	1915
Milford Center	Smith House		1890
Milford Center	Gabnel's Print Shop		1905
Milford Center	Bob's Garage		1907
Milford Center	Milford Center Grange Hall	Knights of Pythias	1915
Milford Center	Milford Center Mill		1870
Milford Center	Pack House		1891
Milford Center	PNW Stereo & TV Serv City Grill	Lyons-Alden Bldg	1893
Milford Center	Brill's Bootery		1900
Milford Center	Hayes Hall		1890
Milford Center	Stilltner House		1883
Milford Center	Richter Bldg		1893
Milford Center	Bidlack House		1910
Milford Center	Simpson House	Osborne House	1912
Milford Center	Phelps House		1875
Milford Center	Cox House		1896
Milford Center	Rutan House		1896
Milford Center	Brake Hardware, Kaufman Plumb & Htg		1894
Milford Center	47 Reed St		1876
Milford Center	Thompson House	George Reed House	1810
Milford Center	Daum House		1887
Milford Center	99 West State St		1847
Milford Center	Sacred Heart Catholic Church		1893
Milford Center	Township House		1892

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Appendix F - Ohio Historical Sites

Location	Present Name	Other Name	Date
Milford Center	Milford Center Union MethChur		1906
New California	Jerome Township Soldiers Monument		1913
Plain City	Plain City Methodist Church		1901
Plain City	Joseph Hafbauer House		1880
Plain City	Birkhold House	McCune House	1880
Plain City	Auker House	Dr Ingmire House	1877
Plain City	Dr. Adams Office		1877
Plain City	Joe Glick House	Anderson House	1921
Plain City	Decker House	Pleasant Valley Stock Farm	1850
Plain City	Berry House		1905
Plain City	Shepper Ave Town Building	Jerome Twp House	1900
Plain City	Elias House		1880
Plain City	Elderly Housing Units	Ballinger-Woodruff Mill Site	1873
Plain City	130 E 1st Ave		1870
Plain City	145 E 1st Ave		1885
Plain City	286 Shepper Ave	Porschet House	1880
Plain City	Plain City Methodist Church Parsonage		1914
Plain City	Horch House	Robinson House	1900
Plain City	Lower Liberty Cemetery	Ewing Cemetery	1820
Union (Township of)		Hopkins House	1840
Unionville Center	Unionville Center United Methodist Church		1895
Unionville Center	Wampler House		1893
Unionville Center	Darby Township Hall	Darby Township School	1914

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APPENDIX G – COUNTY ZONING RULES AND PLANNING

Logan County

Union County

Champaign County

Madison County

Pickaway County

Franklin County

- **Zoning Codes and Regulations**
- **Plans and Recommendations (Comprehensive Plans)**

Local Codes and Regulations	Logan County Comprehensive Plan - 1996
Are Stream Buffers Required? If so, distance and stream type	No
Floodplains - Subdivision regulations? - Zoning resolutions?	No structure built in the floodway unless an analysis proves flood level will not rise or FEMA approves a structure. Permit required to build in floodway fringe (or the 100 year floodplain)
Methods to reduce impervious Surfaces?	**Subdivision Review Process
Erosion and Sediment Controls? If so, what and who manages?	** Subdivision Review Process
Stormwater Controls? Briefly Describe	** Subdivision Review Process
Greenspace in Developments Briefly describe	**Subdivision Review Process
Farmland Preservation Plan	

Draft

Logan County Zoning Districts	With On-Site Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
U-1 – Rural District						
Perry Township - 2003	40,000	150	25	10,800 (single)	80	25
Zane Township – 1973, 87	40,000	80	25	10,800	80	25
R-1 – Low Density Residential				10,800 (single)	80	25
Perry Township	40,000	150	25	2,700 (multi)	90	25
Zane Township	40,000	80	25	10,800	80	25
R-2 – Medium Density Residential				5,400 (single)	60	25
Perry Township	40,000	150	25	2,700 (multi)	90	25
Zane Township	40,000	60	25	5,400	60	25

Draft

Local Codes and Regulations	Union County
Are Stream Buffers Required? If so, distance and stream type	No
Floodplains - Subdivision regulations? - Zoning resolutions?	In the 100 year floodplain variances are allowed. In the floodway only open space is permitted unless FEMA approves otherwise.
Methods to reduce impervious Surfaces?	** Subdivision Review
Erosion and Sediment Controls? If so, what and who manages?	** Subdivision Review
Stormwater Controls? Briefly Describe	** Subdivision Review
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	** Subdivision Review
Lot size including front, back, and sides	** Subdivision Review
Greenspace in Developments Briefly describe	
Farmland Preservation	
Open Space/Parks and Rec.?	

Zoning codes for Allen, Liberty, Union, Paris, Darby, and Jerome Townships will be discussed below. None of the townships had any additional regulations to add above

Draft

Drafts or Recommendations	Union County - 1999	Darby Township - 2003	Jerome Township Comp. Plan Policies
Stream Buffers Required?	- Maintain and enhance buffers - Recommended Min. Buffer 120ft – scenic river 50ft - other major creeks 25ft - tributaries	- Minimum Buffer Suggested of 125 for new development	Minimize disturbance of existing vegetation along streams and in buffers Recommended – 150 buffer And 50 foot on intermittent streams and ditches
Floodplains	Strengthen Floodplain Regulations to prohibit all development in 100 year floodplain	Same as Union County Regulations	Same as County Regulations - Floodplain used as open space area
Methods to reduce impervious Surfaces?		Recommended adoption of Darby 22 Development Principles	Recommended adoption of Darby 22 Development Principles
Erosion and Sediment Controls?	Strengthen plans through SWCD to minimize construction impacts	Recommended adoption of Darby 22 Development Principles	Recommended adoption of Darby 22 Development Principles
Stormwater Controls?	Promote stream buffers, wetlands and ponds	Recommended adoption of Darby 22 Development Principles	Recommended adoption of Darby 22 Development Principles
Residential Unit Density	Strengthen subdivision regulations Cluster development and open space Guide development to serviceable areas and existing communities	-Establish a minimum lot size of 2 acres -Create conservation zoning district -Avoid scattered and isolated development	- Contiguous Open Space required - Discourage Lot splits along County and Township roads - Encourage small subdivisions - Conservation design

Draft

Farmland Preservation	- Consider support for Farmland protection tools - Adoption of agricultural zoning	-Discourage development within existing agricultural lands. -Encourage participation in agricultural preservation programs -Recommended min. lot size of 20 acres	Protect agricultural lands
Open Space/Parks and Rec.?	Protect wetlands prairie remnants and forests in all situations - Support new parks and bike paths	-Recommended to set aside open space for parks -Create incentives for open space and trails	- Continuous Greenways system with bike paths - Tree conservation and replacement - Protect and buffer land around Glacier Ridge Metropark

*** Allen Township and Jerome Township are currently working on comprehensive plans**

Draft

Union County Zoning Districts	With On-Site Sewage Treatment (ft^2), (acres)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
U-1 – Rural District						
Allen Township - 1981, 04	87,120	150	25			
Darby Township - 2003	65,400	150	25	10,800	80	25
Jerome Township - 1998 in progress	65,400	150	25	20,000	150	25
Liberty Township -1999	130,680	250	25			
Paris Township - 1998	65,340	150	25			
Union Township - 2003	65,400	200	25			

R-1 – Low Density Residential						
Allen Township	87,120	150	25			
Darby Township	65,400	150	25	10,800	80	25
				5,400 (multi)	60	25
Jerome Township	65,400	150	25	20,000	150	25
Liberty Township	87,120	150	25	10,800	80	25
Paris Township	65,340	150	25	14,520	100	25
				4,356 (multi)	80	30
Union Township	65,400	150	25	10,800	80	25
				2,700 (multi)	90	25
R-2 – Medium Density Residential						
Allen Township	87,120	150	25	21,780	150	25
Darby Township	Not defined					
Jerome Township	65,400	150	25	20,000	150	25
				5,400 (multi)	150	25
Liberty Township -Defined as R-3 (High Density Residential)	87,200	150	30	5,400	60	30
				2,700 (multi)	70	30
Paris Township	Not defined					
Union Township	65,400	150	25	10,800	80	25
				2,700 (multi)	90	25

Draft

Union County Zoning Districts	With On-Site Sewage Treatment (ft^2), (acres)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
City of Marysville – Union County						
A-R Agricultural Residential	40,000	150	25			
R-1 Low Density Single Family Residential	20,000	120	30			
R-2 Medium Density Residential	7,000	60	25			
R-3 High Density Single Family Residential	5,500	50	35			
R-4 Low Density Multi-Family Residential	4,500	70	35			
R-5 High Density Multi-Family Residential	2,700	90	25			
Milford Center – Union County	40,000	150	25	5,400 (single)	60	
R-2 – Medium Density Residential				2,700 (multi)	70	
OS – Open Space						

Draft

Local Codes and Regulations	Champaign County	Goshen Township Oct, 1996 Ag District – Draft Nov. 2003
Are Stream Buffers Required? If so, distance and stream type	No	No
Floodplains - Subdivision regulations? - Zoning resolutions?	In the 100 year floodplain variances are allowed. In the floodway only open space is permitted unless FEMA approves otherwise.	
Methods to reduce impervious Surfaces?	Subdivision Review	
Erosion and Sediment Controls? If so, what and who manages?	Subdivision Review and SWCD	
Stormwater Controls? Briefly Describe	Subdivision Review	
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	Technical Review	
Lot size including front, back, and sides	No - Township	
Greenspace in Developments Briefly describe	Subdivision Review	
Farmland Preservation?	Plan reviewed with each new subdivision	1 acre lot at a density of 1:20 acres for farm and non-farm dwelling units – cover 25% Farm Res. – min lot size 1 acre for single family dwellings.
Open Space/Parks and Rec.?	Subdivision Review	

Draft

Rush, Wayne and Union Townships Zoning Codes are Summarized Below. They did not have anything to note above.

Drafts and Recommendations	Champaign County – 2004	North Lewisburg - 2002
Stream Buffers	Maintain buffer areas along Little Darby Creek to preclude development and encourage natural vegetative growth	
Floodplains	Encourage protection	
Methods to reduce impervious Surfaces?	New development to have no increase in runoff rate.	
Erosion and Sediment Controls?	Adopt effective county wide controls with SWCD	
Stormwater Controls?	New development to have no increase in runoff rate. Develop a permitting process for grading or sewer layout plan	Expand Stormwater facilities south and north of town – conduit, retention/detention ponds
Residential Unit Density	Focus development to serviceable areas and infill existing areas	Update current zoning codes
Greenspace in Developments		
Farmland Preservation?	Will not support conversion of prime agricultural land. Minimize negative impacts of large scale agriculture and rural development	Ensure farmland preservation ordinances are implemented
Groundwater	Identify and protect local groundwater recharge areas	
Open Space/Parks and Rec.?	Support and encourage	Possible bike path along Spain Creek from N. Lewisburg to covered bridge

Draft

Champaign County Zoning Districts	With On-Site Sewage Treatment (ft^2), (acres)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
U-1 – Rural District						
Goshen Township - 1996	43,560	150	25			
Rush Township – 1971, 88, 93	65,000	150	10	21,600	150	25
Union Township - 1998	40,000	150	25			
Wayne Township – 1980, 03	54,250	150	25	10,800	80	25
R-1 – Low Density Residential						
Goshen Township	43,560	150	25	10,800	80	25
				2,700 (multi)	80	25
Rush Township	Not defined					
Union Township	40,000	150	25	10,800	80	25
Wayne Township	54,250	150	25	10,800	80	25
				2,700 (multi)	90	25
R-2 – Medium Density Residential						
Goshen Township	Not defined					
Rush Township	65,000	150	10	5,400	70	30
Union Township	Not defined					
Wayne Township	54,250	150	25	5,400	60	25
				2,700 (multi)	90	25

Draft

Champaign County Zoning Districts	With On-Site Sewage Treatment (ft^2), (acres)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
Village of Woodstock – Champaign County - 1993	31,250	125	25	5,400 (single)	60	25
R-2 Medium Density Residential				2,700 (multi)	70	
Mechanicsburg – Champaign County - 1983	30,000	100				
A-1						
R-1	20,000	80		15,000	80	
R-2				10,000 (single)	80	
				6,250 (two fam)	100	
				5,500 (multi)	125	
R-3				10,800 (single)	80	
				6,000 (two fam)	90	
				4,000 (multi)	100	
North Lewisburg – Champaign County - 2003				10,800	80	
R-1 Low Density Residential						
R-2 Medium Density Residential				5,400	60	
R-3 High/Multi Family Residential				2,700	70	

Draft

Regulations and Codes	Madison County – 2000 – Update 2005
Are Stream Buffers Required? If so, distance and stream type	On Little and Big Darby 120ft buffer from the top of the Bank. Other tributaries (Spring Fork and Treacle Creek only floodplain is protected) 25 % harvesting of trees allowed in 120ft Buffer but roots must be left in the bank
Floodplains - Subdivision regulations? - Zoning resolutions?	In Zoning Code no fill or build in FEMA determined floodplain. No variances unless proven that area is out of floodplain
Methods to reduce impervious Surfaces?	Soil & Water member of development review board and lock up in Subdivision req's Max of 25% lot coverage (need 2 leach fields)
Erosion and Sediment Controls? If so, what and who manages?	Sub. Development review board reviews this, mainly thought SWCD
Stormwater Controls?	Same as above development team.
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	Minimum lot size for a single family residential is 1.5 acres. Lot Placement must be approved by Subdivision Review Board
Lot size including front, back, and sides	1.5 – 5 acres – Minimum 200ft wide in a 3:1 depth ratio 5.01-10 – Minimum 270 ft width in a 4:1 depth ratio 10.01 – 20 – Minimum 330ft width In a 4:1 depth ratio Over 20 acres – 60 feet
Greenspace in Developments	Single Family Res. Units – Max of 25% lot coverage In Commerical – 50%
Farmland Preservation	Most of the county is zoned as agricultural or A-1. In order to split the lot the parcel must be 20 acres or greater. Only two lot splits are allowed on mother parcels 20 acres or larger.

Draft

Plans/Recommendations	Plain City – Comprehensive Plan 2003
Are Stream Buffers Required? If so, distance and stream type	Prohibit development within the floodplain or within 300 feet of the stream bank – whichever is greater
Floodplains - Subdivision regulations? - Zoning resolutions?	Create Floodplain standards that will prohibit any filling of the 100yr floodplain.
Methods to reduce impervious Surfaces?	- Require environmental impact assessments for developments over 20 acres or where critical resources have been identified
Erosion and Sediment Controls? If so, what and who manages?	- Require environmental impact assessments for developments over 20 acres or where critical resources have been identified
Stormwater Controls?	- Require environmental impact assessments for developments over 20 acres or where critical resources have been identified
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	- Focus growth in areas with existing service areas - Adopt conservation design standards
Lot size including front, back, and sides	
Greenspace in Developments	- Create urban tree program - Create a tree preservation board and committee
Farmland Preservation	- Supports transfer of development rights aimed at preserving farmland - Develop conservation easement program
Open Space/Parks and Rec.	Residential Open space minimum 15-20% of the net site for single family development, 20-25% for multi family - Develop a conservation easement program to protect critical resource areas and open space. - Develop a continuous greenway system - Create another park where community recreational activities can take place - Create a dedicated park (impact) fee assessed to all types of dev.

Draft

Madison County Village Zoning	With On-Site Sewage Treatment (ft^2), (acres)	Frontage (ft)	Max. Cover (%)	With Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)
Plain City – Union/Madison County						
RU – Rural District	40,000	150	20			
RS1 - Single Family Residential				20,000	150	30
RS2 – Single Family Residential				12,000	80	20
RS3 – Single Family Residential				8,700	70	30
RS4 – Two Family Residential				4,350	80	30
RS5 – Multi-Family Residential				4,000	125	40
West Jefferson – Madison County	30,000	150	20			
A-1 Agricultural						
R-1 Residential				20,000	100	20
R-2 Residential				9,500	80	20
R-3 Residential				7,200	65	20
				5,000	85	20
R-5 Multi-Family Residential				2,500	85	25
Condos				3 units per acre		
PRD -Planned Residential District	43,560	100	20			
Madison County Zoning Codes						
A-1 Agriculture	20 ac or	60	25			

Draft

	more					
R-1 Suburban Residential	65,340	<5ac. -200 5 to 10ac. 270 >10ac. – 330	25			
R-2 Low Density Residential				20,000	<1ac – 100	25
R-3 Multi Family Residential				20,000	<2ac. – 200 2-3ac – 250 3-10ac – 300 >10ac – 330	Structure – 25 Structure and paving - 50
PRD – Planned Residential District	3 units per acre					
OS – Open Space						

Draft

Local Codes and Regulations	Pickaway County
Are Stream Buffers Required? If so, distance and stream type	No
Floodplains - Subdivision regulations? - Zoning resolutions?	No structure built in the floodway unless an analysis proves flood level will not rise or FEMA approves a structure. Permit required to build in floodway fringe (or the 100 year floodplain)
Methods to reduce impervious Surfaces?	**Subdivision Review Process
Erosion and Sediment Controls? If so, what and who manages?	**Subdivision Review Process
Stormwater Controls? Briefly Describe	**Subdivision Review Process
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	**Subdivision Review Process
Greenspace in Developments Briefly describe	No
Farmland Preservation?	
Open Space/Parks and Rec.?	

Draft

Darby Creek Conservation District - Darby, Scioto, and Jackson Townships

- 200ft from high water mark
- No development, structures or fill in district
- No more than 25% of crown removed from trees
- Agriculture of 5 acres or more allowed

Pickaway County Zoning Districts	Minimum lot size with On-Site Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover (%)	Minimum lot size with Central Sewage Treatment (ft^2)	Frontage (ft)	Max. Cover	Open Space
Darby Township - 1997							
RR - Rural Residential	43,560	3:1 ratio 150ft					
SR – Suburban Residential				20,000	3:1 max 100ft 60ft – on curve		
VR - Village Residential				5,000	60ft		
CR – Multiple Use Combined Residential District				20,000 -single 10,000 -2 fam. 7,500 - multi	100ft		
MHR – Mobile Home Residential				MHP -10 ac. 6 units/acre max density Unit – 2,500	MHP 1:5 ratio - 300ft Unit –30ft	40%	20%
Scioto Township – 1997							
Ag - Agriculture Estate District	5 acres	300					
R-1 – Rural Residential	43,650	3.5:1 ratio <5 ac. 150ft					
R-2 – Suburban Residential				20,000	3:1 max 100ft 60ft – on curve		
R-3 Urban Density				15,000 –single 10,000 -2 fam. 6,000 –multi	100ft		
MHR – Mobile Home Residential				MHP – 10 ac. 6 units/acre max density Unit – 4,000	MHP - 300ft Unit – 30ft	45%	20%
PURD – Planned Unit Residential District				10 ac. gross area max 4 units/acre	approved by zoning		.015ac /unit

Draft

					commission		
Muhlenberg Township - 1996		3.5:1 ratio					
FR-1 Farm Residential	43,560	<2 ac – 150 2-3ac – 175 3-4ac – 200 4-5ac – 250 >5ac - 300					
R-2	43,560	100		20,000			
R-3	43,560	150		21,780	100		
R-4 Residential Manufactured Home Park District				Minimum 10 acres for MHP			
Jackson Township - 1998		3.5:1 ratio					
FR – Farm Residential	87,120	2-3ac – 200 3-5ac – 250 >5ac - 300					
LRR – Limited Rural Residential				MHP – 10 ac. 6 unit/acre max density	MHP - 300ft		20%
				Unit – 4,000	Unit – 30ft		
				20,000	3:1 ratio - 100ft 60ft – on curve		
FS – Farm Sanctuary 2-24ac – 1 unit 25-59ac – 2 60-99ac – 3 100-149ac – 4 150-199ac – 5 >200ac - 6	Farm – 5 acres Non-farm – 2 acres	200ft					

Draft

Codes and Regulations	Prairie Township Prairie Township Zoning Resolution – Updated 2002	City of Hilliard Codified Ordinances of the City of Hilliard – March, 2003	Pleasant Township	Brown Township
Are Stream Buffers Required?	Article 21 - "Big Darby Creek Critical Resource Protection District" promotes protection and preservation of the water resource within 120'. This district strictly regulates all uses within the watershed. Prairie Township Comprehensive Plan designates protection of stream corridor areas (120') in conjunction with efforts to protect water quality.		Follows Franklin County Subdivision Regulations	Follows Franklin County Subdivision Regulations
Floodplains - Subdivision regulations? - Zoning resolutions?	Within the floodway, no building or structure, including mobile homes for residential, commercial, industrial, agricultural, or other use shall be permitted. No waste disposal, landfills, or wastewater treatment facilities. Within the floodplain, buildings, etc. must be elevated to or above the flood protection elevation or otherwise flood-proofed.	Section 1323.05 – Provisions for Flood Hazard Reduction *Within Delineated Floodways* – no fill, new construction, substantial improvements, and all other development, unless proven to not increase flood levels through the city and FEMA. *Within Special Flood Hazard Areas* – base flood elevations must be calculated if not already established. All new residential and non-residential construction much have lowest floor elevated to base flood elevations		
Methods to reduce impervious surfaces?				
Erosion and Sediment Controls?				
Stormwater Controls?		City of Hilliard Storm Water Management Requirements – 1999 -For detention or retention basin, a 100-year post development storm is released at a rate no greater than the 2-year pre-development storm flow rate. - On a site Stormwater release can not exceed the 2-year storm release rate from the site under pre-developed conditions or the downstream receiving storm sewers, whichever is less. - All site runoff from storms exceeding the 100-year storm must be conveyed adequately and safely to a downstream water body, stream, or conveyance system. - A regulated MS4 (municipal separate storm sewer system) must have an implemented and enforced program to reduce Stormwater discharge and discharge of pollutants to the "maximum extent practicable." Hilliard Codified Ordinance section 1133.01.2.A states, "All off-street parking areas for multiple-family and nonresidential uses shall be paved with all-weather paving, adequately drained, and lighted."		
Residential Unit Density	Rural districts are permitted to locate dwellings on the land at a maximum density of one dwelling unit per five acres. Suburban Estate Residential District (SER) allows the opportunity to satisfy individual housing preferences and shall permit not more than one dwelling unit per gross acre. Low Density Residential District (R-2) allows not more than two dwelling units per gross acre. Centralized water and sewer facilities are, however, encouraged			
Greenspace and Open Space	For Planned Unit Developments, a minimum of twenty percent of the land developed shall be reserved for common open space and recreational facilities for the residents or users of the area.	1179.07 Hilliard Open Space and Recreational Code: Upon the submission of a preliminary plat or development plan of a proposed residential subdivision/development, there shall be areas dedicated for recreational uses or open space. (Exclusive of any street, road, highway or sidewalk.) Land can include passive recreational areas such as stormwater retention (only 25% of area), bike paths, public golf courses, tree stands or dedicated green space.		

Draft

Codes and Regulations	Franklin County Subdivision Regulations – January, 2001 Zoning Resolution – June, 2000	City of Columbus Stormwater Drainage Manual Columbus Metropolitan Facilities Plan Update - November, 2000 Hellbranch Overlay -	Norwich Township
Are Stream Buffers Required? If so, distance and stream type	Subdivision Regulations – It is recommended forest buffer areas be maintained or established within these corridors. Easements and plat or deed wording may be required to protect these sensitive needs. The streambank buffer shall be 120ft as measured from the ordinary high-water mark, and the transitional area shall be 25 feet. Significant impervious surfaces, such as parking lots, are not encouraged in the transition area. Other impervious surfaces should be kept to a minimum of 10 percent in the transition area.	Stormwater Drainage Manual - Unenclosed streams must have a minimum buffer width of 50ft on each side of the open watercourse from the top of the bank. This generally applies to all blue solid or dashed stream lines on current USGS topo quads or any drainage course exhibiting erosion or a discernable high water mark. Other drainage "swales" not including the above may be considered for protection by a "drainage and erosion easement" with a minimum 25ft buffer on each side. Ordinance 856-02 (Hellbranch Overlay) – Stream corridor protection zone shall be kept in as natural state as possible. This area is determined based on the drainage area of the stream.	Follows Franklin County Subdivision Regulations
Floodplains - Subdivision regulations? - Zoning resolutions?	Subdivision Regulations - New subdivision building areas are not encouraged in the floodway fringe. Wells and wastewater treatment systems and facilities shall avoid floodplain areas. Zoning Resolutions – Within the floodway, buildings or structures, including mobile homes for residential, commercial, industrial, agricultural, or other use are prohibited. Waste disposal, landfills, or wastewater treatment facilities are prohibited. Within the flood fringe, flood protection shall be achieved by elevating buildings at least one foot above the base flood elevation. Non-residential structures may be otherwise flood-proofed.	Ordinance 1270-83 - Within the floodway, no building, structure or premises shall be used, and no building or structure shall be erected which is designed to be used for overnight accommodations by human habitants. Any alteration of the terrain through the shifting, addition, or removal of material is prohibited. Within the floodplain, buildings, etc. must be elevated to or above the flood protection elevation or otherwise flood-proofed. Ordinance 856-02 (Hellbranch Run Overlay) - Neither the total one hundred (100) year flood storage capacity nor the total area of the one hundred (100) year floodplain shall be reduced. Floodplain fill permits may be granted for fill outside the limits of the stream corridor protection zone upon demonstration by the applicant that any net loss of both the area and the flood storage volume of the one hundred (100) year floodplain will be fully mitigated within the watershed at a site as close as practicable to the area of fill through either the creation of new floodplain or the management and treatment of additional flood volumes equal to those which would have been managed and treated within the lost floodplain.	
Reduction of Impervious Surfaces	Development standards limit impervious surface coverage between 20% and 90% depending on zoning district.	Adoption of Traditional Neighborhood Development Article (3320) creating new zoning districts, which require narrower street widths and a seven-foot tree lawn.	
Erosion and Sediment Controls?	An Erosion and Sediment Control Plan shall be required for major subdivisions, may be required for other development, and shall conform to the "Rainwater and Land Development" manual prepared by ODNR and available through the Franklin Soil and Water Conservation District.	An erosion and sediment control plan is to be submitted and approved prior to any land-disturbing activities on development areas involving earth disturbance of one (1) or more acres, including those development areas being a part of a larger common plan of development or sale. Temporary stormwater runoff controls are to be designed in accordance with the standards and specifications outlined in the latest edition of the U.S. Department of Agriculture Soil Conservation Service's Manual entitled, "Water Management and Sediment Control for Urbanizing Areas."	
Stormwater Controls? Briefly Describe	Subdivision Regulations – The TR-55 model shall be used in preparing stormwater management plans. Where a storm drainage pipe is to connect with an existing Columbus storm drain, Columbus' standards are to be followed. No subdivision or development having inadequate storm drainage, or other wetness, drainage, erosion or flooding impairment shall be approved. Major storm routing path shall convey the 100-year storm without undue threat to property or safety. Depth of flow in streets shall not exceed six inches at street crowns.	The city of Columbus has adopted the Hellbranch Run Watershed Protection Overlay (3372.705), which established the "stream corridor protection zone", mandates no-net loss of flood storage capacity, standards for minimizing storm water generation, and prohibits disturbance of natural vegetation in stream corridors. Also adopted Ordinance 856-02 (Hellbranch Overlay) – This provides specific guidelines for development in this area regarding detention and treatment as well as conveyance. (See full text for complete guidelines)	
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	Subdivision Regulations - Policy of Planning Commission minimum lot size is 2 acres. Zoning Regulations - Although density controls vary with the district, most of the county is in a Rural District that has a minimum lot size of 2.5 acres per dwelling.		
Greenspace and Open Space			

Draft

Adopted Plans *Recommendations And Drafts* **(In Italics)**	Prairie Township Comprehensive Plan – June, 2003	Brown Township Comprehensive Plan 1992, 1998, update in progress	Pleasant Township Comprehensive Plan-2002	Norwich Township Land Use Plan - 2001	CORF- Darby Creek Stormwater Strategies - 2001
Are Stream Buffers Required? If so, distance and stream type	"Stream Corridor Policies requires preserving natural drainage patterns, promotes open space and protects water quality.	140-foot buffer from creek centerline.		120-foot riparian corridor shall be adopted around all waterways, recommended by Franklin County Greenways Plan.	*- Create a variable width, naturally vegetated buffer system along all perennial streams that also encompass critical environmental features such as the 100 year floodplain, steep slopes and freshwater wetlands* *- Enclosing, straightening, and relocating streams should be discouraged during all new development.*
Floodplains - Subdivision regulations? - Zoning resolutions?		Areas within the 100-year floodplain should be designated as open space. The goal of the open space area is conservation of existing land, agriculture, and protection as an undeveloped area. The floodplain is also part of the Environmental Conservation District in the Comprehensive Plan. Development is discouraged in this district.	*Review Darby Stormwater Strategies and Hellbranch Run Greenways Plan and revise Comprehensive Plan*	Filling of the floodway fringe in discouraged. Channel relocation is discouraged.	*Variable width, naturally vegetated buffer system along all perennial streams that also encompass critical environmental features such as the 100-year floodplain, steep slopes, and freshwater wetlands.*
Methods to reduce impervious Surfaces?	Minimize impervious surfaces at the site level as well as through efficient, compact development that minimizes roads and parking lots. Amend the zoning resolution to include development standards aimed at minimizing impervious surfaces.		*Impervious surfaces should be minimized to prevent excessive runoff and allow for natural groundwater recharge.*		*- Design residential streets for the minimum required pavement width to support travel, parking, and emergency vehicles.* *- Reduce parking size by providing compact car spaces, using pervious surfaces for spillover parking areas, and shared parking areas* *- Incorporate landscaping into cul-de-sacs.* *- Promote alternate driveway surfaces and shared driveways.*
Erosion and Sediment Controls? If so, what and who manages?	Revise the zoning resolution to require that new development that disturbs an area of one acre or more complete a storm water plan based on best management practices (BMPs) as recommended in Franklin County's NPDES Phase II process. Work with the Franklin SWCD to draft and enforce this amendment				*Incentives and flexibility in the form of density compensation, buffer averaging, property tax reduction, stormwater credits, and by-right open space development should be encouraged to promote conservation of stream buffers, forests, meadows, and other areas of environmental value. Off-site mitigation for open space, stormwater management and forest resources (excluding riparian buffers) within the same watershed should also be encouraged.*
Stormwater Controls? Briefly Describe	Protect soils from development-related runoff by coordinating zoning review with county, state, and federal stormwater and sediment and erosion control measures Development of other land disturbing activity should not occur on slopes with grades in excess of 15%	-Filter strips are recommended as important conservation practices along all tributaries within the Township - Stormwater shall not be discharged directly into a receiving stream. Rather, a method should be implemented to "buffer" stormwater surges that might degrade the integrity and	*– Platted subdivisions, without central water and sanitary sewer service, should be separated from one another to prevent increased groundwater degradation and soil saturation from on-site wastewater treatment systems. Physical*		*- Wherever possible provide Stormwater treatment for parking lot runoff using bioretention areas, filter strips, or landscaping islands.* *- Where conditions permit, vegetated open channels should be used in the street right of way to convey and treat Stormwater* *- New development should not discharge unmanaged Stormwater* *- Direct rooftop runoff to pervious surfaces*

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		performance of a receiving stream, ditch or watercourse.	*separation will help protect water quality.*		
Residential Unit Density - Subdivision Regulations? - Zoning Resolutions?	1. Limited Growth Option – One unit per acre east of Hamilton Ditch Floodplain. West of the floodplain one use per 5 acres 2. Higher Density Option- (Central sewer and water available) – overall density of 2-4 units per acre east of Clover Groff Floodplain and north U.S 40. Areas West of Clover Groff and along U.S. 40 will have a density of one unit per acre. 3. Transition Areas - In the middle of the township will develop at highest densities allowed w/o central sewer and 2 units per acre with sewer. - The township will formulate zoning that provides density credits in exchange for meeting environmental objectives.	Low-density development is desired with a maximum net density of .40 homes per acre. It s recommended that the minimum lot size for a single-family residence should be 2.5 acres.	*Low-density residential from the township line to Hellbranch Run. To provide a transition between the urban community and rural community, lower density is recommended for northwest area of Pleasant Township up to Hellbranch Run.*		*Relax side yard setbacks and allow narrower frontages to reduce total road length in the community and overall site imperviousness. Relax front setback requirements to minimize driveway lengths and reduce overall lot imperviousness. Reduce the total length of residential streets by examining alternative street layouts to determine the best option for increasing the number of homes per unit length.*
Greenspace in Developments Briefly describe	- Incorporate a prohibition on development of steep slopes into the Zoning Resolution. As such, these areas should be considered as primary conservation areas for the purpose of designing conservation developments. - Consider steep slope areas when determining open space ratio compliance as part of a conservation-style development. - Include incentives for conservation-style development in the Zoning Resolution that give minor allowances in exchange for preserving significant open space.	Woodlands are recommended to be protected from adverse impacts and managed as a vital natural resource. Open space in the form of woodlands and the 100-year floodplain are recommended for preservation	*Cluster Neighborhood, Farm Village and Conservation Village are considered.*	Developers are to preserve open space onsite. – Trees shall be preserved before and after construction. Natural corridors along roads and waterways shall be preserved. Should have landscaping plans that provide for natural features and plantings	Advocate open space development that incorporates smaller lot sizes to minimize total impervious area, reduce total construction costs, conserve natural areas, provide community recreational space, and promote watershed protection. Clearing and grading of forests and native vegetation at a site should be limited to the minimum amount needed to build lots, allow access, and provide fire protection. A fixed portion of any community open space should be managed as protected green space in a consolidated manner. Clearly specify how community open space will be managed and designate a sustainable legal entity responsible for managing natural, recreational, and stormwater management open space. Conserve trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native plants. Wherever practical, manage community open space, parking lot islands, and other landscaped areas to promote natural vegetation

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Adopted Plans *Drafts/Recommedations* (In Italics)	Franklin County	City of Columbus WP -- The Westland Plan – February, 1994 WCIDC -- West Columbus Interim Development Concept – February, 1991 CCP – Columbus Comprehensive Plan - November, 2000	City of Hilliard City of Hilliard Master Plan - 1987
Are Stream Buffers Required?		WCIDC– Provide a forested buffer adjacent to tributary streams to act as a filter for run-off, sediments and chemicals. WP – Adopt ODNR recommended natural buffer of 120 feet, or the 100-year floodplain, whichever is greater, along Hellbranch Run and Big Run. Reserve the land as a no-build zone and encourage passive parkland where possible. CCP – Establish a greenways zoning overlay.	
Floodplains		WCIDC and WP - Reserve the land in the 100 year floodplain for recreational and parkland uses.	
Methods to reduce impervious Surfaces?			
Erosion and Sediment Controls?		WP and CCP – Encourage development and enforcement of policies that promote environmental protection during the site development process.	
Stormwater Controls?		WCIDC, WP – Control density of future single-family development to minimize negative impacts of stormwater drainage. WCIDC – Integrate park and rec. facilities into areas that are being used for Stormwater retention. - Conduct a thorough study to determine current limitations of existing system. - Require new development to respect existing natural and man-made drainage systems. Natural drainage systems should be allowed to continue in a natural state or as a man-made alternative where a natural state is not feasible. - Update older, existing Stormwater drainage infrastructure in order to tie in with new development WP – Search for regional not case by case solutions CCP – Implement city policy that storm sewers that carry urban run-off should not flow directly into bodies of water. They should be released into a rip-rap filled channel or artificial wetland.	
Residential Unit Density		WCIDC - Designate the far western portion of the West Columbus Interim Development Concept Clover Groff Ditch to Alton Darby Creek Road) as a very low-density residential area (2 1/2 to 3 acres per unit). WP - Develop the far northwest portion of the Westland planning area as low-density residential (2 units/acre) – higher density should be considered if water and sanitary sewer services become available. Cluster design for developments is encouraged. The Westland Plan reaffirms the existence of the Environmental Conservation District in the northwest corner of the planning area and makes recommendations for land uses ranging from very low residential (1 unit/acre) to a maximum of five units per acre. CCP- The city of Columbus should discourage urban density territorial expansion in areas that should be protected due to significant environmental attributes of the area and discourage development in these areas. The Columbus Comprehensive plan establishes the Environmental Conservation District and recommends against development until further analysis of the environmental issues.	Agricultural or low-density (min. of 2 acres) residential uses (estates on large lots in sub-area 3) recommended for parts of Hellbranch watershed. Uses should be encouraged by zoning policies.
Greenspace in Developments		WCIDC – The remaining woodlots and major wooded tracts in the area should be identified and reserved for open space and aesthetic value wherever possible. The updated Westland Plan includes recommendations for additional parkland and connectivity of the greenspace through multiuse paths and otherwise.	
Open Space/Parks and Rec.?		WCIDC – Ensure that development in the Hellbranch Run Watershed is sensitive to water quality concerns since the Hellbranch empties into Big Darby Creek, a designated scenic river CCP – Protect the Environmental Conservation District: Do not extend water and sewer services, discourage development in the district and support efforts to protect opens space and establish a Metro Park	

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APPENDIX H – ENVIRONMENTAL AND NATURAL RESOURCES

HISTORIC VEGETATION

The following sections will discuss historic vegetation as well as current rare or endangered plants in the watershed.

During the earliest land surveys, over 90 percent of the streams in the Darby Creek Watershed were covered by mixed oak and oak-sugar maple forests (ODNR, 1992; 63).

Mixed Oak Forests

The most common forest type in this category were white oak-black oak-hickory and white oak. The first surveyors used the term "black oak" which referred to red oak and perhaps scarlet oak. The term "hickory" included the shagbark, bitternut, pignut, and mokernut hickories. In addition a white oak-black oak-chestnut type occurred in the low-lime glaciated plateau, mainly on hilltops, and down south-facing slopes. During the early 1900s the chestnut disappeared from Ohio woodlots (ODNR, 1992; 63).

Oak-Sugar Maple Forests

These forests largely consisted of white oak, red oak, black walnut, and black maple. Also included were sugar maple, white ash, red elm, basswood, bitternut and shagbark hickories. These forests usually lacked beech, chestnut, red maple, and tuliptree (ODNR, 1992; 63-64)

Beech Forests

The forests in this category consisted of beech, sugar maple, red oak, white ash and white oak, with scattered individuals of basswood, shagbark hickory, black cherry, and a few cucumbertree. On poorly drained flatlands the most familiar types were beech-sugar maple and "wet beech" (ODNR, 1992; 64).

Elm-Ash Swamp Forests

Dominant trees in these forest were white elm, black and/or white ash, silver and/or red maple. The extremely wet areas contained cottonwood and/or sycamore. Better drained areas contained bur oak-big shellbark hickory and red oak-basswood (ODNR, 1992; 64)

Prairies

The flat plains of the Darby Watershed greeted pioneers with large expanses of grasses dominated by big bluestem, little bluestem, switch grass or Indian grass. The large expanse of grasses contained scattered groves of oaks and hickories (ODNR, 1992; 64).

Figure H1: Natural Heritage Database: Vegetation (2004)				
Common Name	*Scientific Name*	*Last Observed*	*Number of Observances*	*State Status*
Leafy Blue Flag	*Iris brevicaulis*	1998-06-02	1	E
Smooth Rose	*Rosa blanda*	1997-06-09	2	E
Three-flowered Melic	*Melica nitens*	1999-06-23	1	E
Two-leaved Water-milfoil	*Myriophyllum heterophyllum*	1973-10	1	E
Wild Pea	*Lathyrus venosus*	1996-07-08	1	E
Angle-pod	*Matelea obliqua*	1979-07	1	T
Bicknell's Sedge	*Carex bicknellii*	1993-06	1	T
Drummond's Aster	*Aster drummondii*	1993-09	1	T
Glomerate Dodder	*Cuscuta glomerata*	1991-07	1	T
Lake Cress	*Armoracia lacustris*	1997-06-12	1	T
Prairie Dropseed	*Sporobolus heterolepis*	1982-10	2	T
Reflexed Sedge	*Carex retroflexa var. retroflexa*	1986-05	1	T
Satin Brome	*Bromus nottowayanus*	2003-07-25	2	T
Showy Lady's-slipper	*Cypripedium reginae*	1976-08	1	T
Southern Hairy Rock Cress	*Arabis hirsuta var. adpressipilis*	1959-06	1	T
Yellowish Gentian	*Gentiana alba*	1993-09	1	T
Arbor Vitae	*Thuja occidentalis*	1968-04	1	P
Flat-stemmed Pondweed	*Potamogeton zosteriformis*	1970-10	1	P
Green Milkweed	*Asclepias viridiflora*	1979-07	1	P
Pigeon Grape	*Vitis cinerea*	1998-06-02	1	P
Prairie False Indigo	*Baptisia lactea*	1992-07	2	P
Round-leaved Dogwood	*Cornus rugosa*	1991-05	2	P
Royal Catchfly	*Silene regia*	2000-07-13	4	P
Scaly Blazing-star	*Liatris squarrosa*	1992-08	2	P
Spider Milkweed	*Asclepias viridis*	1970-06	1	P
Spotted Coral-root	*Corallorhiza maculata*	1959-08	1	P
Tall Larkspur	*Delphinium exaltatum*	1992-08	3	P
Weak Spear Grass	*Poa languida*	1991-05	2	P
Bur oak savanna	Plant Communities (Non-Sci)	1980-09-30	1	
Big bluestem prairie	Plant Communities (Non-Sci)	1981-08	2	
Total 30 Species			**43 Observations**	E:5, T:11, P:12 **Total:28**
Source: ODNR, 2004. *Heritage Database.*				

Figure H2 : Ohio Protection Status Criteria for Vegetation

Protection Status	*Abbreviation*	*Designation Criteria*
Endangered	E	1. Species is federally endangered and exists in Ohio 2. Natural Populations in Ohio are limited to three or fewer occurrences 3. Population Distribution is limited to a geographic area of three U.S.G.S. 7.5 quadrangle maps or smaller. 4. The number of plants in all natural populations is limited to one hundred or fewer individual, physically unconnected plants.
Threatened	T	1. Species is federally threatened, exists in Ohio, but not on the State endangered list. 2. Natural populations are limited to less than four or no more than ten occurrences. 3. Population distribution is limited to a geographic area delineated by no less than four or more than seven U.S.G.S 7.5 minute quadrangle maps.
Potentially Threatened	P	1. Species exists in Ohio and is not listed in the above but is a proposed federal endangered or threatened species or is listed in the *Federal Register* as under review. 2. Natural populations are imperiled to the extent that they could conceivably become a threatened species in the foreseeable future. 3. Natural Populations are believed to be declining in abundance or vitality at a significant rate throughout large portions or all of the state.

Figure H3: Mammals Recorded within the Darby Creek Corridor at Battelle-Darby Metropark (1992)

	Common Name	*Scientific Name*		*Common Name*	*Scientific Name*
1	Virginia opossum	*Didelphis virginiana*	18	Striped skunk	*Mephitis mephitis*
2	Northern short-tailed shrew	*Blarina brevicauda*	19	White-tailed deer	*Odocoileus virginianus*
3	Masked shrew	*Sorex cinereus*	20	Southern flying squirrel	*Glaucomys volans*
4	Star-nosed mole	*Condylura cristata*	21	Woodchuck	*Marmota monax*
5	Hairy-tailed mole	*Parascalops breweri*	22	Gray squirrel	*Sciurus carolinensis*
6	Eastern mole	*Scalopus aquaticus*	23	Fox squirrel	*Sciurus niger*
7	Big brown bat	*Eptesicus fuscus*	24	Thirteen-lined ground squirrel	*Spermophilus tridecemlineatus*
8	Red bat	*Lasiurus borealis*	25	Eastern Chipmunk	*Tamias striatus*
9	Little brown bat	*Myotis lucifugus*	26	Red squirrel	*Tamiasciurus hudsonicus*
10	Eastern pipistrelle	*Pipistrellus subflavus*	27	Beaver	*Castor canadensis*
11	Coyote	*Canis latrans*	28	White-footed mouse	*Peromyscus leucopus*
12	Gray fox	*Urocyon cinereoargenteus*	29	Meadow vole	*Microtus pennsylvanicus*
13	Red fox	*Vulpes vulpes*	30	Muskrat	*Ondatra Zibethicus*
14	Raccoon	*Procyon lotor*	31	House mouse	*Mus musculus*
15	Long-tailed weasel	*Mustela frenata*	32	Norway rat	*Rattus norvegicus*
16	Least weasel	*Mustela nivalis*	33	Meadow jumping mouse	*Zapus hudsonius*
17	Mink	*Mustela vison*	34	Eastern cottontail	*Sylvilagus floridanus*

Source: ODNR, 1992; 50

Figure H4: Reptiles and Amphibians Recorded within the Darby Creek Corridor (1992)

	Common Name	*Scientific Name*		*Common Name*	*Scientific Name*
1	Common Musk Turtle	*sternotherus odoratus*	17	Mudpuppy	*Necturus maculosus*
2	Snapping turtle	*Chelydra serpentina*	18	Spotted salamander	*Ambystoma maculatum*
3	Painted turtle	*Chrysemys picta*	19	Small-mouthed salamander	*Ambystoma texanum*
4	Common map turtle	*Graptemys geographica*	20	Tiger salamander	*Ambystoma tigrinum*
5	Common slider	*Trachemys scripta*	21	Two-lined salamander	*Eurycea bislineata*
6	Common box turtle	*Terrapene carolina*	22	Eastern red-backed salamander	*Plethodon cinereus*
7	Spiny softshell turtle	*Trionyx spiniferus*	23	American toad	*Bufo americanus*
8	Black racer	*Coluber constrictor*	24	Woodhouse's toad	*Bufo woodhousii*
9	Black rat snake	*Elaphe obsoleta*	25	Northern cricket frog	*Acris crepitans*
10	Eastern hog-nosed snake	*Heterodon platyrhinos*	26	Spring peeper	*Hyla crucifer*
11	Milk snake	*Lampropeltis triangulum*	27	Gray treefrog	*Hyla versicolor*
12	Northern water snake	*Nerodia sipedon*	28	Striped chorus frog	*Pseudacris triseriata*
13	Smooth green snake	*Opheodrys vernalis*	29	Bullfrog	*Rana catesbeiana*
14	Queen snake	*Regina septemvittata*	30	Green frog	*Rana clamitans*
15	DeKay's brown snake	*Storeria dekayi*	31	Pickerel frog	*Rana palustris*
16	Common garter snake	*Thamnophis sirtalis*	32	Northern leopard frog	*Rana pipiens*

Source: ODNR, 1992; 56

Figure H5: Fish Species Collected by Ohio EPA from 1979 to 2000

Common Name	*Scientific Name*	*Common Name*	*Scientific Name*
Bass, Largemouth	*Micropterus salmoides*	Herring, Skipjack	*Alosa chrysochloris*
Bass, Rock	*Ambloplites rupestris*	Killifish, Eastern Banded	*Fundulus diaphanus diaphanus*
Bass, Smallmouth	*Micropterus dolomieui*	Lamprey, Amer. Brook	*Lampetra appendix*
Bass, Spotted	*Micropterus punctulatus*	Lamprey, Least Brook	*Lampetra aepyptera*
Bass, White	*Morone chrysops*	Lamprey, North Brook	*Ichthyomyzon fossor*
Buffalo, Bigmouth	*Ictiobus cyprinellus*	Lamprey, Silver	*Ichthyomyzon unicupis*
Buffalo, Black	*Ictiobus niger*	Logperch	*Percina caprodes*
Buffalo, Smallmouth	*Ictiobus bubalus*	Madtom, Brindled	*Noturus miurus*
Bullhead, Black	*Ictalurus melas*	Madtom, Northern	*Noturus stigmosus*
Bullhead, Brown	*Ictalurus nebulosus*	Madtom, Stonecat	*Noturus flavus*
Bullhead, Yellow	*Ictalurus natalis*	Madtom, Tadpole	*Noturus gyrinus*
Carp, Common	*Cyprinus carpio*	Minnow, Bluntnose	*Pimephales notatus*
Carp, Grass	*Ctenopharyngodon idella*	Minnow, Bullhead	*Pimephales vigilax*
Carpsucker, Highfin	*Carpiodes velifer*	Minnow, Fathead	*Pimephales promelas*

Carpsucker, Quillback	*Carpiodes cyprinus*	Minnow, Silverjaw	*Ericymba buccata*
Carpsucker, River	*Carpiodes carpio*	Minnow, Suckermouth	*Phenacobius mirabilis*
Catfish, Channel	*Ictalurus punctatus*	Mooneye	*Hiodon tergisus*
Catfish, Flathead	*Pulodictis olivaris*	Perch, Yellow	*Perca flavescens*
Central Mudminnow	*Umbra limi*	Redhorse, Black	*Moxostoma duquesnei*
Chub, Bigeye	*Hybopsis amblops*	Redhorse, Golden	*Moxostoma erythrurum*
Chub, Creek	*Semotilus atromaculatus*	Redhorse, River	*Moxostoma carinatum*
Chub, Gravel	*Erimystax x-punctatus*	Redhorse, Shorthead	*Moxostoma macrolepidotum*
Chub, Hornyhead	*Nocomis biguttata*	Redhorse, Silver	*Moxostoma anisurum*
Chub, Silver	*Hybopsis storeriana*	Sauger	*Stizostedion canadense*
Chub, Streamline	*Hybopsis dissimilis*	Sculpin, Mottled	*Cottus bairdi*
Chubsucker, Creek	*Erimyzon oblongus*	Shiner, Emerald	*Notropis atherinoides*
Crappie, Black	*Pomoxis nigromaculatus*	Shiner, Golden	*Notemigonus crysoleucas*
Crappie, White	*Pomoxis annularis*	Shiner, Mimic	*Notropis volucellus*
Dace, Blacknose	*Rhinichthys atratulus*	Shiner, Redfin	*Notropis umbratilis*
Dace, South. Redbelly	*Phoxinus erythrogaster*	Shiner, Rosefin	*Notropis ardens*
Darter,	*Etheostoma spectabile*	Shiner, Rosyface	*Notropis rubellus*
Darter, Banded	*Etheostoma zonale*	Shiner, Sand	*Notropis stramineus*
Darter, Blackside	*Percina maculata*	Shiner, Silver	*Notropis photogenis*
Darter, Bluebreast	*Etheostoma camurum*	Shiner, Spotfin	*Notropis spilopterus*
Darter, Dusky	*Percina sciera*	Shiner, Steelcolor	*Notropis whipplei*
Darter, Fantail	*Etheostoma flabellare*	Shiner, Striped	*Notropis chrysocephalus*
Darter, Greenside	*Etheostoma blennioides*	Silverside, Brook	*Labidesthese sicculus*
Darter, Johnny	*Etheostoma nigrum*	Stoneroller, Central	*Campostoma anomalum*
Darter, Least	*Etheostoma microperca*	Sucker, Northern Hog	*Hypenelium nigricans*
Darter, Rainbow	*Etheostoma caeruleum*	Sucker, Spotted	*Minytrema melanops*
Darter, Slenderhead	*Percina phoxocephala*	Sucker, White	*Catostomus commersoni*
Darter, Spotted	*Etheostoma maculatum*	Sunfish, Bluegill	*Lepomis macrochirus*
Darter, Tippecanoe	*Etheostoma tippecanoe*	Sunfish, Green	*Lepomis cyanellus*
Darter, Variegate	*Etheostoma variatum*	Sunfish, Longear	*Lepomis megalotis*
Drum, Freshwater	*Aplodinotus grunniens*	Sunfish, Orangespotted	*Lepomis humilis*
Gar, Longnose	*Lepisosteus osseus*	Sunfish, Pumpkinseed	*Lepomis gibbosus*
Gizzard Shad	*Dorosoma cepedianum*	Topminnow, Blackstripe	*Fundulus notatus*
Goldfish	*Carassius auratus*	Trout-perch	*Percopsis omiscomaycus*
Grass Pickerel	*Esox americanus*	Walleye	*Stizostedion vitreum*

Figure H6: Birds Documented at Battelle-Darby Metropark (1987-2003)

	Common Name	*Scientific Name*		*Common Name*	*Scientific Name*
	Bittern, American	*Botaurus lentiginosus*		Sandpiper, Spotted	*Actitis macularia*
*	Blackbird, Red-winged	*Agelaius phoeniceus*		Sandpiper, Upland	*Bartramia longicauda*
	Blackbird, Rusty	*Euphagus carolinus*		Sapsucker, Yellow-bellied	*Sphyrapicus varius*
*	Bluebird, Eastern	*Sialia sialis*		Siskin, Pine	*Carduelis pinus*
	Bobolink	*Dolichonyx oryzivorus*		Snipe, Common	*Gallinago gallinago*
	Bobwhite, Northern	*Colinus virginianus*		Sora	*Porzana carolina*
*	Bunting, Indigo	*Passerina cyanea*		Sparrow, American Tree	*Spizella arborea*
	Bunting, Snow	*Plectrophenax nivalis*		Sparrow, Chipping	*Spizella passerina*
*	Cardinal, Northern	*Cardinalis cardinalis*		Sparrow, Clay-colored	*Spizella pallida*
	Catbird, Gray	*Dumetella carolinensis*	*	Sparrow, Field	*Spizella pusilla*
	Chat, Yellow-breasted	*Icteria virens*		Sparrow, Fox	*Passerella iliaca*
	Chickadee, Black-capped	*Parus atricapillus*	*	Sparrow, Grasshopper	*Ammodramus savannarum*
*	Chickadee,Carolina	*Parus carolinensis*		Sparrow, Henslow's	*Ammodramus henslowii*
*	Cowbird, Brown-headed	*Molothrus ater*		Sparrow, House	*Passer domesticus*
	Crane, Sandhill	*Grus canandensis*		Sparrow, Lincoln's	*Melospiza lincolnii*
*	Crow, American	*Corvus brachyrhynchos*	*	Sparrow, Savannah	*Passerculus sandwichensis*
	Cuckoo, Black-billed	*Coccyzus erythropthalmus*	*	Sparrow, Song	*Melospiza melodia*
*	Cuckoo, Yellow-billed	*Coccyzus americanus*		Sparrow, Swamp	*Melospiza georgiana*
*	Dickcissel	*Spiza americana*	*	Sparrow, Vesper	*Pooecetes gramineus*
*	Dove, Mourning	*Zenaida macroura*		Sparrow, White-crowned	*Zonotrichia leucophrys*
	Dove, Rock	*Columba livia*		Sparrow, White-throated	*Zonotrichia albicollis*
	Duck, American Black	*Anas rubripes*	*	Starling, European	*Sturnus vulgaris*
	Duck, Wood	*Aix sponsa*		Swallow, Bank	*Riparia riparia*
	Eagle, Bald	*Haliaeetus leucocephalus*	*	Swallow, Barn	*Hirundo rustica*
	Egret, Great	*Casmerodius albus*		Swallow, Cliff	*Hirundo pyrrhonota*
	Falcon, Peregrine	*Falco peregrinus*	*	Swallow, Northern Rough-winged	*Stelgidopteryx serripennis*
	Finch, House	*Carpodacus mexicanus*	*	Swallow, Tree	*Tachycineta bicolor*
	Finch, Purple	*Carpodacus purpureus*		Swan, Mute	*Cygnus olor*
*	Flicker, Northern	*Colaptes auratus*		Swift, Chimney	*Chaetura pelagica*
*	Flycatcher, Acadian	*Empidonax virescens*	*	Tanager, Scarlet	*Piranga olivacea*
*	Flycatcher, Great Crested	*Myiarchus crinitus*		Tanager, Summer	*Piranga rubra*
	Flycatcher, Least	*Empidonax minimus*		Teal, Blue-winged	*Anas discors*
	Flycatcher, Olive-sided	*Contopus borealis*		Thrasher, Brown	*Toxostoma longirostre*
*	Flycatcher, Willow	*Empidonax traillii*		Thrush, Gray-cheeked	*Catharus minimus*
	Flycatcher, Yellow-bellied	*Empidonax flaviventris*		Thrush, Hermit	*Catharus guttatus*
*	Gnatcatcher, Blue-gray	*Polioptila caerulea*		Thrush, Swainson's	*Catharus ustulatus*
*	Goldfinch, American	*Carduelis tristis*	*	Thrush, Wood	*Hylocichla mustelina*

*	Goose, Canada	*Branta canadensis*
	Goose, Snow	*Chen caerulescens*
*	Grackle, Common	*Quiscalus quiscula*
	Grosbeak, Evening	*Coccothraustes vespertinus*
*	Grosbeak, Rose-breasted	*Pheucticus ludovicianus*
	Gull, Ring-billed	*Larus delawarensis*
	Harrier, Northern	*Circus cyaneus*
	Hawk, Broad-winged	*Buteo platypterus*
*	Hawk, Cooper's	*Accipiter cooperii*
	Hawk, Red-shouldered	*Buteo lineatus*
	Hawk, Red-tailed	*Buteo jamaicensis*
	Hawk, Rough-legged	*Buteo lagopus*
	Hawk, Sharp-shinned	*Accipiter striatus*
*	Heron, Great blue	*Ardea herodias*
	Heron, Green-backed	*Butrorides striatus*
*	Hummingbird, Ruby-throated	*Archilochus colubris*
*	Jay, Blue	*Cyanocitta cristata*
	Junco, Dark-eyed	*Junco hyemalis*
	Kestrel, American	*Falco sparverius*
	Killdeer	*Charadrius vociferus*
*	Kingbird, Eastern	*Tyrannus tyrannus*
*	Kingfisher, Belted	*Ceryle alcyon*
	Kinglet, Golden-crowned	*Regulus satrapa*
	Kinglet, Ruby-crowned	*Regulus calendula*
	Lark, Horned	*Eremophila alpestris*
*	Mallard	*Anas platyrhynochos*
*	Martin, Purple	*Progne subis*
*	Meadowlark, Eastern	*Sturnella magna*
	Meadowlark, Western	*Sturnella neglecta*
	Merganser, Hooded	*Lophodytes cucullatus*
	Mockingbird, Northern	*Mimus polyglottos*
	Moorhen, Common	*Gallinula chloropus*
	Night-heron, Yellow-crowned	*Nyctanassa violacea*
	Nighthawk, Common	*Chordeiles minor*
	Nuthatch, Red-breasted	*Sitta canadensis*
*	Nuthatch, White-breasted	*Sitta carolinensis*
*	Oriole, Northern	*Icterus galbula*
	Oriole, Orchard	*Icterus spurius*
	Osprey	*Pandion haliaetus*
*	Ovenbird	*Seiurus aurocapillus*
*	Owl, Barred	*Strix varia*
	Owl, Eastern Screech	*Otus asio*
	Thrush, Tufted	*Parus bicolor*
*	Towhee, Rufous-sided	*Pipilo erythrophthalmus*
	Turkey, Wild	*Meleagris gallopavo*
	Veery	*Catharus fuscenscens*
	Vireo, Philidelphia	*Vireo philadelphicus*
*	Vireo, Red-eyed	*Vireo olivaceus*
	Vireo, Solitary	*Vireo solitarius*
*	Vireo, Warbling	*Vireo gilvus*
	Vireo, White-eyed	*Vireo griseus*
*	Vireo, Yellow-throated	*Vireo flavifrons*
*	Vulture, Turkey	*Cathartes aura*
	Warbler, Bay-breasted	*Dendroica castanea*
	Warbler, Black-and-white	*Mniotilta varia*
	Warbler, Black-throated Blue	*Dendroica caerulescens*
	Warbler, Black-throated Green	*Dendroica virens*
	Warbler, Blackburnian	*Dendroica fusca*
	Warbler, Blackpoll	*Dendroica striata*
	Warbler, Blue-winged	*Vermivora pinus*
	Warbler, Canada	*Wilsonia canadensis*
	Warbler, Cape May	*Dendroica tigrina*
	Warbler, Cerulean	*Dendroica cerulea*
	Warbler, Chestnut-sided	*Dendroica pensylvanica*
	Warbler, Connecticut	*Oporornis agilis*
	Warbler, Hooded	*Wilsonia citrina*
*	Warbler, Kentucky	*Oporornis formosus*
	Warbler, Magnolia	*Dendroica magnolia*
	Warbler, Mourning	*Oporornis philadelphia*
	Warbler, Nashville	*Vermivora ruficapilla*
	Warbler, Orange-crowned	*Vermivora celata*
	Warbler, Plum	*Dendroica palmarum*
	Warbler, Pine	*Dendroica pinus*
	Warbler, Prairie	*Dendroica discolor*
	Warbler, Prothonotary	*Protonotaria citrea*
	Warbler, Tennessee	*Vermivora peregrina*
	Warbler, Wilson's	*Wilsonia pusilla*
	Warbler, Worm-eating	*Hemitheros vermivorus*
*	Warbler, Yellow	*Dendroica petechia*
	Warbler, Yellow-rumped	*Dendroica coronata*
*	Warbler, Yellow-throated	*Dendroica dominica*
*	Waterthrush, Louisiana	*Seiurus motacilla*
	Waterthrush, Northern	*Seiurus noveboracensis*
*	Waxwing, Cedar	*Bombycilla cedrorum*

	Owl, Great Horned	*Bubo virginianus*		Whip-poor-will	*Caprimulgus vociferus*
	Owl, Long-eared	*Asio otus*	*	Wood-pewee, Eastern	*Contopus virens*
	Owl, Short-eared	*Asio flammeus*		Woodcock, American	*Scolopax minor*
	Owl, Snowy	*Nyctea scandiaca*	*	Woodpecker, Downy	*Picoides pubescens*
*	Parula, Northern	*Parula americana*	*	Woodpecker, Hairy	*Picoides villosus*
	Pheasant, Ring-necked	*Phasianus colchicus*		Woodpecker, Pileated	*Dryocopus pileatus*
	Pheobe, Eastern	*Sayornis phoebe*	*	Woodpecker, Red-bellied	*Melanerpes carolinus*
	Pintail, Northern	*Anas acuta*		Woodpecker, Red-headed	*Melanerpes erythrocephalus*
	Pipit, American	*Anthus rubescens*	*	Wren, Carolina	*Thryothorus ludovicianus*
	Plover, Black-bellied	*Pluvialis squatarola*	*	Wren, House	*Troglodytes aedon*
	Rail, Virginia	*Rallus limicola*		Wren, Sedge	*Cistothorus platensis*
	Redpoll, Common	*Carduelis flammea*		Wren, Winter	*Troglodytes troglodytes*
	Redstart, American	*Setophaga ruticilla*		Yellowlegs, Greater	*Tringa melanoleuca*
*	Robin, American	*Turdus migratorius*		Yellowlegs, Lesser	*Tringa flavipes*
	Sandpiper, Solitary	*Tringa solitaria*	*	Yellowthroat, Common	*Geothlypis trichas*

* Denotes a nesting species

Source: Surveys in early June by Metroparks since 1997 and Dan Rice (ODNR) since 1987

Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Bales Ditch-0.4-2001	5	50.0000	5.1770	70.0	0		
Bales Ditch-0.4-2001	5	0.0000	0.0000	0.0	0	G	36 - 40
Ballenger-Jones Ditch-0.2-2001	6	0.0000	0.0000	0.0	0	E	46 - 60
Ballenger-Jones Ditch-0.4-2001	6	40.0000	4.9610	69.0	0		
Barron Creek-0.1-2001	6	0.0000	0.0000	0.0	0	MG	32 - 34
Barron Creek-2.1-2001	5	48.0000	4.3900	44.5	0		
Barron Creek-2.1-2001	5	0.0000	0.0000	0.0	0	MG	32 - 34
Big Darby Creek-0.1-1984	555	42.0000	5.8260	0.0	0		
Big Darby Creek-0.3-1997	555	54.0000	8.3110	78.5	0		
Big Darby Creek-0.3-2001	555	50.0000	11.0130	71.5	0		
Big Darby Creek-10.4-2002	538	56.0000	9.5810	85.0	0		
Big Darby Creek-10.9-1979	537	48.0000	8.6940	0.0	0		
Big Darby Creek-10.9-1981	537	42.6667	8.6513	0.0	0		
Big Darby Creek-11.2-2002	537	0.0000	0.0000	0.0	52		
Big Darby Creek-11.3-1979	537	50.0000	9.7480	0.0	0		
Big Darby Creek-11.3-1981	537	46.0000	9.0215	0.0	0		
Big Darby Creek-13.2-1977	534	0.0000	0.0000	0.0	34		
Big Darby Creek-13.2-1979	534	0.0000	0.0000	0.0	42		
Big Darby Creek-13.2-1988	534	54.0000	10.3280	0.0	0		
Big Darby Creek-13.2-1997	534	56.0000	9.4660	83.5	0		
Big Darby Creek-13.4-1988	534	54.0000	9.8100	92.0	0		
Big Darby Creek-13.4-1988	534	0.0000	0.0000	0.0	50		
Big Darby Creek-13.4-1990	534	52.0000	9.0605	86.5	0		
Big Darby Creek-13.4-1990	534	0.0000	0.0000	0.0	54		
Big Darby Creek-13.4-1993	534	0.0000	0.0000	0.0	50		
Big Darby Creek-13.4-2001	534	51.3333	10.5270	85.5	0		
Big Darby Creek-13.5-1992	534	56.0000	10.3820	91.0	0		
Big Darby Creek-13.5-1992	534	0.0000	0.0000	0.0	48		
Big Darby Creek-13.5-1993	534	52.0000	9.9245	0.0	0		
Big Darby Creek-13.5-2001	534	0.0000	0.0000	0.0	56		
Big Darby Creek-14-1979	533	38.0000	7.6930	0.0	0		
Big Darby Creek-15.1-2002	532	0.0000	0.0000	0.0	54		
Big Darby Creek-15.7-2002	529	56.0000	10.5150	88.5	0		
Big Darby Creek-15.8-2002	529	0.0000	0.0000	0.0	52		
Big Darby Creek-18.7-2001	513	52.0000	10.5320	85.0	0		
Big Darby Creek-19.1-1992	512	0.0000	0.0000	0.0	48		
Big Darby Creek-19.1-2001	512	0.0000	0.0000	0.0	42	E	46 - 60
Big Darby Creek-19.8-1979	512	42.0000	6.7250	0.0	0		
Big Darby Creek-2.4-1997	554	38.0000	9.0490	81.5	0		
Big Darby Creek-2.8-1984	552	45.6000	9.1352	0.0	0		
Big Darby Creek-2.9-1984	552	43.6000	9.3986	0.0	0		
Big Darby Creek-20.2-1981	511	42.0000	8.2345	0.0	0		
Big Darby Creek-20.2-1987	511	52.0000	10.5200	0.0	0		
Big Darby Creek-20.2-1992	511	59.0000	10.8690	98.5	0		
Big Darby Creek-21.3-1979	508	54.0000	9.8040	0.0	0		
Big Darby Creek-21.5-1987	508	54.0000	9.6820	0.0	0		
Big Darby Creek-21.7-1979	508	0.0000	0.0000	0.0	48		
Big Darby Creek-2-1997	554	56.0000	8.1930	69.0	0		
Big Darby Creek-22.3-1992	505	0.0000	0.0000	0.0	56		
Big Darby Creek-22.4-1997	505	0.0000	0.0000	0.0	40		
Big Darby Creek-22.5-1997	505	37.0000	7.2730	0.0	0		
Big Darby Creek-22.5-2001	505	0.0000	0.0000	0.0	56		
Big Darby Creek-22.8-2001	505	53.0000	11.3585	84.5	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-22.9-1992	505	55.0000	10.2505	87.5	0		
Big Darby Creek-23.6-1992	498	56.5000	10.4818	98.0	0		
Big Darby Creek-23.7-1984	498	48.0000	5.4580	0.0	0		
Big Darby Creek-23.8-1992	498	0.0000	0.0000	0.0	42		
Big Darby Creek-23.8-1997	498	54.0000	10.4695	95.5	0		
Big Darby Creek-23.8-1997	498	0.0000	0.0000	0.0	46		
Big Darby Creek-23.8-2001	498	53.3333	9.9473	87.5	0		
Big Darby Creek-23.8-2001	498	0.0000	0.0000	0.0	46		
Big Darby Creek-24-1981	498	46.0000	8.7264	0.0	0		
Big Darby Creek-24-1987	498	58.0000	10.8200	84.5	0		
Big Darby Creek-25.1-1993	496	0.0000	0.0000	0.0	50		
Big Darby Creek-25.2-1979	496	54.0000	10.2395	0.0	0		
Big Darby Creek-25.2-1979	496	0.0000	0.0000	0.0	44		
Big Darby Creek-25.7-1981	496	45.6364	9.2512	0.0	0		
Big Darby Creek-25-1979	496	54.0000	9.3900	82.5	0		
Big Darby Creek-26.1-2002	495	56.0000	9.3690	94.5	0		
Big Darby Creek-26.1-2002	496	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-26.3-1993	454	53.0000	9.9895	0.0	0		
Big Darby Creek-26.7-1979	453	56.0000	9.6100	85.5	0		
Big Darby Creek-26.7-1981	453	45.6923	8.8222	0.0	0		
Big Darby Creek-26.9-1992	453	53.0000	10.0015	0.0	0		
Big Darby Creek-26.9-1997	453	0.0000	0.0000	0.0	48		
Big Darby Creek-26.9-2001	453	0.0000	0.0000	0.0	54		
Big Darby Creek-27.1-1992	453	0.0000	0.0000	0.0	50		
Big Darby Creek-27.6-1981	452	39.6667	8.8472	0.0	0		
Big Darby Creek-28.6-2002	450	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-28.8-1979	449	50.0000	8.1080	0.0	0		
Big Darby Creek-28.8-1981	449	41.3846	8.3911	0.0	0		
Big Darby Creek-29.1-1997	449	45.0000	8.2140	63.5	0		
Big Darby Creek-29.1-2001	449	54.6667	10.8207	86.0	0		
Big Darby Creek-29.2-1981	449	37.2308	7.7678	0.0	0		
Big Darby Creek-29.2-1988	449	52.0000	9.5970	0.0	0		
Big Darby Creek-29.3-1981	449	45.3333	8.8300	83.0	0		
Big Darby Creek-29.3-1992	449	56.0000	9.7620	94.0	0		
Big Darby Creek-29.3-1997	449	54.0000	9.5640	0.0	0		
Big Darby Creek-29.4-1997	449	0.0000	0.0000	0.0	48		
Big Darby Creek-29.6-1981	448	33.0000	6.8690	0.0	0		
Big Darby Creek-29.7-1981	448	34.0000	6.7530	0.0	0		
Big Darby Creek-29.9-1981	448	37.0000	6.5430	0.0	0		
Big Darby Creek-29-1981	449	45.2308	8.9310	0.0	0		
Big Darby Creek-3.1-1984	552	45.6000	9.7234	0.0	0		
Big Darby Creek-3.1-1992	552	0.0000	0.0000	0.0	54		
Big Darby Creek-3.1-2001	552	54.0000	11.0165	82.0	0		
Big Darby Creek-3.2-1979	552	54.0000	10.5480	85.5	0		
Big Darby Creek-3.2-1987	552	42.0000	5.0310	0.0	0		
Big Darby Creek-3.2-2001	552	0.0000	0.0000	0.0	54		
Big Darby Creek-3.3-1981	552	41.0000	7.9775	86.5	0		
Big Darby Creek-3.3-1984	552	53.2000	9.4476	0.0	0		
Big Darby Creek-3.3-1986	552	38.0000	4.4580	0.0	0		
Big Darby Creek-3.3-1992	552	56.0000	8.6135	90.0	0		
Big Darby Creek-3.4-1984	552	50.0000	9.2458	0.0	0		
Big Darby Creek-3.5-1983	552	52.0000	6.0400	0.0	0		
Big Darby Creek-3.5-1984	552	50.4000	8.9242	0.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-3.7-1979	553	44.0000	8.2130	0.0	0		
Big Darby Creek-3.7-1981	553	45.0000	9.3550	89.5	0		
Big Darby Creek-30.1-1979	448	56.0000	9.1600	83.5	0		
Big Darby Creek-30.1-1981	448	40.0000	7.7135	0.0	0		
Big Darby Creek-30.3-1984	448	48.0000	5.4200	0.0	0		
Big Darby Creek-30.7-1981	447	48.0000	8.8385	0.0	0		
Big Darby Creek-30.9-1981	447	34.0000	6.5850	0.0	0		
Big Darby Creek-31.8-1979	446	46.0000	10.0600	80.5	0		
Big Darby Creek-3-1984	552	46.3333	9.1475	0.0	0		
Big Darby Creek-33.2-1992	433	51.0000	10.7135	91.0	0		
Big Darby Creek-33.5-1979	432	0.0000	0.0000	0.0	42		
Big Darby Creek-33.5-1992	432	0.0000	0.0000	0.0	46		
Big Darby Creek-33.5-1997	432	47.0000	9.1235	0.0	0		
Big Darby Creek-33.6-1979	432	56.0000	10.5180	0.0	0		
Big Darby Creek-33.6-1981	432	41.3333	7.5963	0.0	0		
Big Darby Creek-33.7-1985	432	56.0000	6.2230	0.0	0		
Big Darby Creek-33.7-1986	432	57.0000	6.2885	0.0	0		
Big Darby Creek-33.7-1987	432	54.0000	6.4340	0.0	0		
Big Darby Creek-33.8-1997	432	0.0000	0.0000	0.0	52		
Big Darby Creek-34.1-1997	432	48.0000	8.7990	0.0	0		
Big Darby Creek-34.1-2001	432	55.0000	10.1430	93.5	0		
Big Darby Creek-34.2-1988	253	52.0000	9.7520	0.0	0		
Big Darby Creek-34.2-1998	253	56.0000	9.6880	0.0	0		
Big Darby Creek-34.2-2001	253	0.0000	0.0000	0.0	52		
Big Darby Creek-34.2-2003	253	42.0000	7.9820	0.0	0		
Big Darby Creek-34-1997	432	51.0000	9.6730	93.0	0		
Big Darby Creek-36.3-1979	250	48.0000	8.6370	0.0	0		
Big Darby Creek-36.3-1979	250	0.0000	0.0000	0.0	28		
Big Darby Creek-36.7-1981	250	41.3333	7.9307	0.0	0		
Big Darby Creek-38.3-1997	249	0.0000	0.0000	0.0	52		
Big Darby Creek-38.8-1990	247	56.0000	10.0310	84.0	0		
Big Darby Creek-38.9-1997	247	52.0000	9.0100	93.0	0		
Big Darby Creek-38.9-2001	247	51.0000	9.0120	82.5	0		
Big Darby Creek-38.9-2002	247	0.0000	0.0000	0.0	52		
Big Darby Creek-39.1-1992	247	54.0000	9.5040	86.5	0		
Big Darby Creek-39.1-1997	247	0.0000	0.0000	0.0	48		
Big Darby Creek-39.2-1990	247	0.0000	0.0000	0.0	42		
Big Darby Creek-39.2-1992	247	0.0000	0.0000	0.0	34		
Big Darby Creek-39.2-1993	247	56.0000	9.2675	0.0	0		
Big Darby Creek-39.2-1993	247	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-39.2-1997	247	53.0000	8.7820	88.0	0		
Big Darby Creek-4.7-1988	551	34.0000	7.0695	0.0	0		
Big Darby Creek-41.3-1997	243	0.0000	0.0000	0.0	48		
Big Darby Creek-41.5-1997	243	50.0000	8.8230	65.5	0		
Big Darby Creek-41.8-1979	240	56.0000	9.6340	96.0	0		
Big Darby Creek-41.8-1981	240	46.4000	8.4588	0.0	0		
Big Darby Creek-41.9-1992	240	50.0000	9.6530	97.5	0		
Big Darby Creek-41.9-1994	240	56.0000	9.2470	79.0	0		
Big Darby Creek-41.9-1997	240	53.0000	9.8435	85.5	0		
Big Darby Creek-41.9-1997	240	0.0000	0.0000	0.0	48		
Big Darby Creek-42.1-2001	240	0.0000	0.0000	0.0	50		
Big Darby Creek-42-1979	240	0.0000	0.0000	0.0	42		
Big Darby Creek-42-1981	240	48.6667	8.9500	82.5	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-42-1993	240	53.0000	9.2385	87.5	0		
Big Darby Creek-42-1993	240	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-42-2001	240	55.0000	9.8655	81.5	0		
Big Darby Creek-43.4-1994	221	60.0000	9.8400	83.5	0		
Big Darby Creek-43.9-1986	220	0.0000	0.0000	0.0	36		
Big Darby Creek-44.3-1993	217	0.0000	0.0000	0.0	50		
Big Darby Creek-44.5-1979	217	38.0000	7.8115	0.0	0		
Big Darby Creek-44.5-1987	217	40.0000	4.4810	0.0	0		
Big Darby Creek-44.8-1979	217	0.0000	0.0000	0.0	40		
Big Darby Creek-44.8-1981	217	42.6667	8.3107	0.0	0		
Big Darby Creek-44.8-1993	217	43.0000	7.9740	71.5	0		
Big Darby Creek-44.8-1994	217	50.0000	9.3800	69.5	0		
Big Darby Creek-45-1994	212	44.0000	8.8420	73.5	0		
Big Darby Creek-46.8-1984	199	48.0000	5.3790	0.0	0		
Big Darby Creek-47.9-1993	192	0.0000	0.0000	0.0	36		
Big Darby Creek-47-1986	199	49.3333	8.9577	0.0	0		
Big Darby Creek-48.9-1993	188	54.0000	10.1030	96.0	0		
Big Darby Creek-49.5-2001	177	48.0000	8.2325	76.0	0		
Big Darby Creek-49.6-1986	177	0.0000	0.0000	0.0	50		
Big Darby Creek-49.7-1986	177	40.6667	8.4270	0.0	0		
Big Darby Creek-49.7-2001	177	0.0000	0.0000	0.0	56		
Big Darby Creek-5.3-2002	550	0.0000	0.0000	0.0	52		
Big Darby Creek-51.3-1979	157	0.0000	0.0000	0.0	30		
Big Darby Creek-51.3-1986	157	0.0000	0.0000	0.0	50		
Big Darby Creek-51.3-1997	157	0.0000	0.0000	0.0	46		
Big Darby Creek-51.5-1979	156	48.0000	9.3745	0.0	0		
Big Darby Creek-51.5-1981	156	42.4000	7.2318	0.0	0		
Big Darby Creek-51.6-1992	156	49.0000	9.2830	78.5	0		
Big Darby Creek-51.8-1986	156	40.6667	7.9453	0.0	0		
Big Darby Creek-51.9-1993	156	49.0000	8.9385	81.5	0		
Big Darby Creek-51.9-1997	156	39.0000	8.4040	78.0	0		
Big Darby Creek-51-1997	157	37.0000	7.3435	53.0	0		
Big Darby Creek-52.1-1993	150	0.0000	0.0000	0.0	46		
Big Darby Creek-52.1-2001	150	0.0000	0.0000	0.0	52		
Big Darby Creek-52.2-1993	150	52.0000	9.5985	89.5	0		
Big Darby Creek-52.5-2001	150	51.0000	9.0820	0.0	0		
Big Darby Creek-52.9-1997	149	0.0000	0.0000	0.0	44		
Big Darby Creek-52-1993	150	0.0000	0.0000	0.0	44		
Big Darby Creek-52-2001	150	43.0000	8.7840	81.0	0		
Big Darby Creek-52-2001	150	0.0000	0.0000	0.0	44		
Big Darby Creek-53.1-1979	149	43.0000	8.8050	0.0	0		
Big Darby Creek-53.1-1979	149	0.0000	0.0000	0.0	26		
Big Darby Creek-53.1-1981	149	44.0000	8.5235	0.0	0		
Big Darby Creek-53.1-1986	149	0.0000	0.0000	0.0	50		
Big Darby Creek-53.1-1992	149	0.0000	0.0000	0.0	42		
Big Darby Creek-53.1-1993	149	0.0000	0.0000	0.0	44		
Big Darby Creek-53.1-2000	149	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-53.2-1981	149	40.0000	8.4573	0.0	0		
Big Darby Creek-53.2-1997	149	48.0000	8.4445	79.0	0		
Big Darby Creek-53.4-1986	149	42.0000	7.9800	0.0	0		
Big Darby Creek-53.4-1992	149	49.0000	9.6415	80.5	0		
Big Darby Creek-53.4-1993	149	51.0000	9.2145	0.0	0		
Big Darby Creek-53.8-1986	136	43.3333	8.2193	0.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-53.9-1992	136	53.0000	9.9660	95.0	0		
Big Darby Creek-53.9-1992	136	0.0000	0.0000	0.0	46		
Big Darby Creek-53.9-2000	136	52.0000	9.5920	0.0	0		
Big Darby Creek-53.9-2001	136	52.0000	9.3530	93.0	0		
Big Darby Creek-53.9-2001	136	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-54.1-2001	136	0.0000	0.0000	0.0	42		
Big Darby Creek-54.2-1979	136	50.0000	9.2715	83.0	0		
Big Darby Creek-54.2-1986	136	0.0000	0.0000	0.0	46		
Big Darby Creek-54.2-1992	136	0.0000	0.0000	0.0	50		
Big Darby Creek-54.2-2000	136	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-54.2-2000	136	0.0000	0.0000	0.0	50		
Big Darby Creek-54.2-2001	136	53.0000	9.2250	83.5	0		
Big Darby Creek-54.4-1992	136	48.0000	8.9550	96.0	0		
Big Darby Creek-54.5-1981	136	38.6667	6.9990	0.0	0		
Big Darby Creek-54.7-1986	136	38.0000	7.2510	0.0	0		
Big Darby Creek-55.1-1986	135	52.6667	9.1560	78.0	0		
Big Darby Creek-55.3-1981	135	42.0000	8.2010	85.5	0		
Big Darby Creek-58.1-2000	128	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-58.7-1979	127	0.0000	0.0000	0.0	30		
Big Darby Creek-58.8-1979	127	49.0000	8.5035	0.0	0		
Big Darby Creek-58.9-2000	127	50.0000	9.4510	0.0	0		
Big Darby Creek-59.6-1981	126	42.0000	8.9250	0.0	0		
Big Darby Creek-62.5-1981	121	42.0000	8.4197	80.5	0		
Big Darby Creek-62.5-1992	121	48.0000	9.4980	80.0	0		
Big Darby Creek-62.5-1993	121	52.0000	10.1360	0.0	0		
Big Darby Creek-62.5-2001	121	47.0000	7.5260	83.5	0		
Big Darby Creek-62.6-1986	121	0.0000	0.0000	0.0	50		
Big Darby Creek-62.9-2001	120	0.0000	0.0000	0.0	42		
Big Darby Creek-63.6-1979	119	50.0000	9.2220	0.0	0		
Big Darby Creek-63.6-1981	119	40.0000	6.9200	0.0	0		
Big Darby Creek-63.7-1986	89	52.0000	9.3537	66.0	0		
Big Darby Creek-63.8-1992	89	53.0000	9.3325	0.0	0		
Big Darby Creek-63.8-1992	89	0.0000	0.0000	0.0	46		
Big Darby Creek-63.8-1993	89	48.0000	8.7820	0.0	0		
Big Darby Creek-63.8-2000	89	0.0000	0.0000	0.0	0	F	14 - 30
Big Darby Creek-63.8-2000	89	0.0000	0.0000	0.0	0	VG	42 - 44
Big Darby Creek-63.8-2001	89	49.0000	8.1810	80.5	0		
Big Darby Creek-63.9-2000	89	32.0000	6.5220	0.0	0		
Big Darby Creek-64.4-2001	88	0.0000	0.0000	0.0	50		
Big Darby Creek-64-1989	89	52.0000	9.2655	0.0	0		
Big Darby Creek-66.1-1979	83	54.0000	9.5570	0.0	0		
Big Darby Creek-66.1-1979	83	0.0000	0.0000	0.0	26		
Big Darby Creek-66.2-1989	83	50.0000	9.0350	0.0	0		
Big Darby Creek-66-1993	83	54.0000	9.6830	67.5	0		
Big Darby Creek-66-2002	83	52.0000	9.2180	74.5	0		
Big Darby Creek-66-2002	83	0.0000	0.0000	0.0	40		
Big Darby Creek-67.2-2002	81	0.0000	0.0000	0.0	38	E	46 - 60
Big Darby Creek-67-2001	81	44.0000	8.3370	0.0	0		
Big Darby Creek-69.3-1985	74	44.0000	8.1230	0.0	0		
Big Darby Creek-69.4-1993	74	56.0000	9.8390	78.5	0		
Big Darby Creek-69.4-2000	74	0.0000	0.0000	0.0	0	E	46 - 60
Big Darby Creek-69.4-2000	74	0.0000	0.0000	0.0	54		
Big Darby Creek-69.4-2001	74	0.0000	0.0000	0.0	52		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-7.4-1979	545	52.0000	8.6890	0.0	0		
Big Darby Creek-7.4-1981	545	46.0000	9.2100	81.0	0		
Big Darby Creek-71.3-1979	56	0.0000	0.0000	0.0	34		
Big Darby Creek-71.4-1979	56	38.0000	8.0060	0.0	0		
Big Darby Creek-71.4-1988	56	0.0000	0.0000	0.0	0	G	36 - 40
Big Darby Creek-71.5-1989	56	50.0000	9.6260	0.0	0		
Big Darby Creek-73.9-1988	45	48.0000	4.7470	0.0	0		
Big Darby Creek-74-1988	48	51.0000	8.7195	0.0	0		
Big Darby Creek-74-1988	48	0.0000	0.0000	0.0	0	F	14 - 30
Big Darby Creek-74-1989	48	52.0000	9.0100	0.0	0		
Big Darby Creek-75.7-1988	43	42.0000	4.7890	0.0	0		
Big Darby Creek-76.5-1986	32	44.0000	7.1830	0.0	0		
Big Darby Creek-76.5-1988	32	0.0000	0.0000	0.0	0	G	36 - 40
Big Darby Creek-76.5-1992	32	0.0000	0.0000	0.0	48		
Big Darby Creek-76.5-1993	32	0.0000	0.0000	0.0	48		
Big Darby Creek-76.5-2001	32	0.0000	0.0000	0.0	56		
Big Darby Creek-76.6-1979	32	52.0000	9.3080	0.0	0		
Big Darby Creek-76.6-1979	32	0.0000	0.0000	0.0	30		
Big Darby Creek-76.6-1981	32	48.3333	8.5575	0.0	0		
Big Darby Creek-76.6-1985	32	54.0000	6.3940	0.0	0		
Big Darby Creek-76.6-1986	32	46.0000	7.5405	0.0	0		
Big Darby Creek-76.6-1987	32	48.0000	7.6735	0.0	0		
Big Darby Creek-76.6-1988	32	44.6667	8.0553	0.0	0		
Big Darby Creek-76.6-1989	32	47.3333	8.2540	0.0	0		
Big Darby Creek-76.6-1990	32	43.3333	8.3450	0.0	0		
Big Darby Creek-76.6-1990	32	0.0000	0.0000	0.0	54		
Big Darby Creek-76.6-1991	32	51.0000	8.0935	0.0	0		
Big Darby Creek-76.6-1992	32	45.3333	8.1327	71.0	0		
Big Darby Creek-76.6-1993	32	48.0000	8.4917	79.0	0		
Big Darby Creek-76.6-1994	32	46.0000	9.5500	0.0	0		
Big Darby Creek-76.6-1995	32	45.0000	7.2940	0.0	0		
Big Darby Creek-76.6-1997	32	42.0000	9.6480	0.0	0		
Big Darby Creek-76.6-1999	32	42.0000	9.1660	65.5	0		
Big Darby Creek-76.6-2000	32	48.0000	9.6330	0.0	0		
Big Darby Creek-76.6-2001	32	43.0000	8.9120	73.5	0		
Big Darby Creek-78.2-1989	25	51.0000	8.5855	0.0	0		
Big Darby Creek-78.3-2001	25	0.0000	0.0000	0.0	50		
Big Darby Creek-78.4-1988	19	0.0000	0.0000	0.0	0	F	14 - 30
Big Darby Creek-78.4-2001	19	37.3333	6.2683	63.5	0		
Big Darby Creek-78.5-1988	19	34.0000	6.5940	0.0	0		
Big Darby Creek-78.5-1989	19	40.0000	6.8735	0.0	0		
Big Darby Creek-79.2-1979	6	49.0000	7.5440	0.0	0		
Big Darby Creek-79.2-1987	6	40.0000	6.2770	0.0	0		
Big Darby Creek-79.2-1988	6	0.0000	0.0000	0.0	0	G	36 - 40
Big Darby Creek-79.2-2001	6	48.0000	6.4305	64.5	0		
Big Darby Creek-79.3-1979	6	0.0000	0.0000	0.0	24		
Big Darby Creek-79.3-1988	6	49.0000	7.0070	72.5	0		
Big Darby Creek-79.3-1989	6	39.0000	6.6595	0.0	0		
Big Darby Creek-79.3-1997	6	0.0000	0.0000	0.0	52		
Big Darby Creek-79.3-2001	6	0.0000	0.0000	0.0	56		
Big Darby Creek-79-1992	6	49.0000	7.9400	63.5	0		
Big Darby Creek-79-1992	6	0.0000	0.0000	0.0	50		
Big Darby Creek-8.4-2002	544	48.0000	9.4450	69.5	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Big Darby Creek-80.8-1997	4	41.3333	6.4553	60.0	0		
Big Darby Creek-80.8-1999	4	44.0000	6.6210	68.0	0		
Big Darby Creek-80.8-2000	4	46.0000	7.1570	0.0	0		
Big Darby Creek-80.8-2001	4	42.0000	4.6890	61.0	0		
Big Darby Creek-81.5-1997	3	41.0000	6.7300	52.5	0		
Big Darby Creek-81.5-1997	3	0.0000	0.0000	0.0	38		
Big Darby Creek-81.5-1999	3	40.0000	6.8090	55.5	0		
Big Darby Creek-81.5-2000	3	42.0000	6.9430	0.0	0		
Big Darby Creek-82.5-1997	2	0.0000	0.0000	0.0	40		
Big Darby Creek-82.5-2001	2	52.0000	5.7330	68.0	0		
Big Darby Creek-82.5-2001	2	0.0000	0.0000	0.0	46		
Big Darby Creek-82.6-1983	2	51.0000	5.1210	0.0	0		
Big Darby Creek-82.6-1997	2	47.0000	6.7785	41.0	0		
Big Darby Creek-82.6-1999	2	45.0000	6.5125	40.0	0		
Big Darby Creek-82.6-2000	2	44.0000	7.7370	0.0	0		
Big Darby Creek-83.2-1997	1	47.0000	6.6255	67.5	0		
Big Darby Creek-83.2-1997	1	0.0000	0.0000	0.0	48		
Big Darby Creek-83.2-1999	1	50.0000	5.0380	0.0	0		
Big Darby Creek-83.2-2001	1	0.0000	0.0000	0.0	42		
Buck Run-0.1-2001	29	44.0000	7.1430	70.5	0		
Buck Run-0.2-1990	29	0.0000	0.0000	0.0	48		
Buck Run-0.2-1990	29	0.0000	0.0000	0.0	28		
Buck Run-0.4-1981	29	35.0000	6.6243	56.5	0		
Buck Run-0.4-1990	29	41.0000	7.9200	74.0	0		
Buck Run-0.6-2001	30	0.0000	0.0000	0.0	0	MG	32 - 34
Buck Run-10.3-1990	5	30.0000	6.7335	58.0	0		
Buck Run-10.3-1990	5	0.0000	0.0000	0.0	26	MG	32 - 34
Buck Run-10.3-1990	5	0.0000	0.0000	0.0	16		
Buck Run-10.4-2001	5	26.0000	3.8450	40.0	0		
Buck Run-10.4-2001	5	0.0000	0.0000	0.0	0	MG	32 - 34
Buck Run-12.9-1983	2	32.0000	4.2680	0.0	0		
Buck Run-2.2-1992	25	34.0000	5.9555	37.0	0		
Buck Run-2.2-1993	25	34.0000	6.3250	0.0	0		
Buck Run-4.1-1992	20	45.0000	6.6165	69.0	0		
Buck Run-4.2-1993	20	38.0000	6.2380	0.0	0		
Buck Run-5-2001	18	0.0000	0.0000	0.0	0	MG	32 - 34
Buck Run-6.1-1992	16	33.0000	7.0455	61.5	0		
Buck Run-6.1-1993	16	28.0000	7.1280	0.0	0		
Buck Run-7.8-1992	9	35.0000	7.1255	62.0	0		
Buck Run-7.8-1993	9	30.0000	6.2640	65.5	0		
Buck Run-7.8-2001	9	28.0000	4.1940	55.5	0		
Buck Run-7.8-2001	9	0.0000	0.0000	0.0	0	G	36 - 40
Clover Groff Ditch-0.6-1992	7	0.0000	0.0000	0.0	20		
Clover Groff Ditch-0.7-1997	7	0.0000	0.0000	0.0	18		
Clover Groff Ditch-0.8-1997	7	35.0000	5.2775	57.5	0		
Clover Groff Ditch-0.8-2001	7	28.0000	3.9230	61.5	0		
Clover Groff Ditch-0.8-2001	7	0.0000	0.0000	0.0	20		
Clover Groff Ditch-0.9-1992	7	33.0000	6.1070	62.0	0		
Clover Groff Ditch-2.5-1991	5	0.0000	0.0000	0.0	10		
Clover Groff Ditch-2.7-1993	5	24.0000	5.7885	42.5	0		
Clover Groff Ditch-4.7-2001	4	18.0000	2.9340	22.0	0		
Clover Groff Ditch-4.7-2001	4	0.0000	0.0000	0.0	0	VP	<= 6
Clover Run-0.6-2001	2	36.0000	3.8420	60.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Fitzgerald Ditch-0.4-1994	5	12.0000	0.0000	0.0	0		
Fitzgerald Ditch-0.5-2001	5	32.0000	4.8150	56.5	0		
Fitzgerald Ditch-0.5-2001	5	0.0000	0.0000	0.0	0	MG	32 - 34
Flat Branch-0.1-1993	14	40.0000	6.6790	60.0	0		
Flat Branch-0.6-1983	14	28.0000	4.1290	0.0	0		
Flat Branch-0.8-1979	14	34.0000	6.4400	28.5	0		
Flat Branch-0.8-1988	14	0.0000	0.0000	0.0	0	F	14 - 30
Flat Branch-0.8-1997	14	23.0000	5.0840	0.0	0		
Flat Branch-0.8-2001	14	28.0000	3.7235	36.5	0		
Flat Branch-0.9-1988	14	28.0000	5.2550	28.5	0		
Flat Branch-0.9-1989	14	32.0000	4.9420	0.0	0		
Flat Branch-1-1997	14	0.0000	0.0000	0.0	38		
Flat Branch-1-2001	14	0.0000	0.0000	0.0	50		
Flat Branch-2.2-2001	9	0.0000	0.0000	0.0	0	MG	32 - 34
Flat Branch-3.2-2001	3	26.0000	3.8070	25.5	0		
Flat Branch-3.2-2001	3	0.0000	0.0000	0.0	0	G	36 - 40
Gay Run-2.2-2001	1	46.0000	4.8380	66.5	0		
Gay Run-2.2-2001	1	0.0000	0.0000	0.0	0	G	36 - 40
Georges Creek-0.5-2001	1	0.0000	0.0000	0.0	0	MG	32 - 34
Georges Creek-0.9-2001	1	46.0000	5.3890	61.0	0		
Greenbriar Creek-1.1-2001	8	0.0000	0.0000	0.0	0	P	8 - 12
Greenbriar Creek-1.3-2002	7	0.0000	0.0000	0.0	0	VG	42 - 44
Greenbriar Creek-2.7-2001	4	0.0000	0.0000	0.0	0	MG	32 - 34
Greenbrier Creek-1.3-2001	7	46.0000	5.6970	74.5	0		
Greenbrier Creek-2.7-2001	4	44.0000	4.9280	57.0	0		
Hamilton Ditch-0.3-1992	9	0.0000	0.0000	0.0	8	F	14 - 30
Hamilton Ditch-0.3-1997	9	0.0000	0.0000	0.0	26		
Hamilton Ditch-0.4-1997	9	30.0000	5.0415	0.0	0		
Hamilton Ditch-0.5-2001	9	24.0000	3.3170	36.5	0		
Hamilton Ditch-0.5-2001	9	0.0000	0.0000	0.0	40		
Hamilton Ditch-1.3-1992	6	28.0000	6.2820	40.0	0		
Hamilton Ditch-2.1-1991	5	0.0000	0.0000	0.0	14		
Hamilton Ditch-2.2-1993	5	19.0000	3.0900	61.5	0		
Hamilton Ditch-3.4-2001	3	16.0000	2.1040	21.0	0		
Hamilton Ditch-3.4-2001	3	0.0000	0.0000	0.0	0	F	14 - 30
Hay Run-0.2-2001	6	0.0000	0.0000	0.0	0	VG	42 - 44
Hay Run-0.3-2001	6	54.0000	5.0510	52.5	0		
Hellbranch Run-0.5-1991	35	0.0000	0.0000	0.0	2	VP	<= 6
Hellbranch Run-0.5-1992	35	50.0000	8.5130	49.5	0		
Hellbranch Run-0.5-1992	35	0.0000	0.0000	0.0	28		
Hellbranch Run-0.5-1997	35	50.0000	8.5160	70.5	0		
Hellbranch Run-0.5-2001	35	41.0000	9.0745	83.5	0		
Hellbranch Run-0.5-2001	35	0.0000	0.0000	0.0	0	VG	42 - 44
Hellbranch Run-0.5-2002	35	0.0000	0.0000	0.0	36	VG	42 - 44
Hellbranch Run-0.7-1997	35	0.0000	0.0000	0.0	18	MG	32 - 34
Hellbranch Run-0.9-1986	35	50.0000	5.7330	0.0	0		
Hellbranch Run-0.9-1992	35	0.0000	0.0000	0.0	36		
Hellbranch Run-0.9-1997	35	0.0000	0.0000	0.0	0	MG	32 - 34
Hellbranch Run-0.9-2001	35	0.0000	0.0000	0.0	40	VG	42 - 44
Hellbranch Run-1.2-1992	35	50.0000	9.1120	85.5	0		
Hellbranch Run-10.1-1990	24	31.0000	6.1450	0.0	0		
Hellbranch Run-10.1-1990	24	0.0000	0.0000	0.0	0	MG	32 - 34
Hellbranch Run-10.1-1992	24	0.0000	0.0000	0.0	30		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Hellbranch Run-10.3-2001	24	36.0000	6.7555	39.5	0		
Hellbranch Run-1-1981	35	45.5000	7.7355	76.0	0		
Hellbranch Run-1-1990	35	48.0000	8.2990	72.0	0		
Hellbranch Run-1-1990	35	0.0000	0.0000	0.0	0	MG	32 - 34
Hellbranch Run-1-1997	35	52.0000	9.6935	80.0	0		
Hellbranch Run-1-2001	35	49.0000	9.1780	84.5	0		
Hellbranch Run-3.7-1992	33	0.0000	0.0000	0.0	34		
Hellbranch Run-3.7-2001	33	47.0000	9.0225	83.5	0		
Hellbranch Run-3.7-2001	33	0.0000	0.0000	0.0	50		
Hellbranch Run-3.8-1992	33	46.0000	8.8055	85.0	0		
Hellbranch Run-4.8-1992	32	45.0000	7.2670	88.0	0		
Hellbranch Run-5.1-1992	31	0.0000	0.0000	0.0	24		
Hellbranch Run-5.2-1991	31	0.0000	0.0000	0.0	16	MG	32 - 34
Hellbranch Run-5.7-2001	31	0.0000	0.0000	0.0	0	G	36 - 40
Hellbranch Run-5.8-1992	31	0.0000	0.0000	0.0	28		
Hellbranch Run-5.8-1997	31	0.0000	0.0000	0.0	22		
Hellbranch Run-5.8-2001	31	35.0000	8.1595	65.5	0		
Hellbranch Run-5.9-1992	31	0.0000	0.0000	0.0	32		
Hellbranch Run-5-1997	32	48.0000	7.4345	75.0	0		
Hellbranch Run-6.1-1992	30	48.0000	8.1485	43.5	0		
Hellbranch Run-6.2-1997	30	40.0000	7.1930	45.5	0		
Hellbranch Run-6.6-1991	29	0.0000	0.0000	0.0	18	MG	32 - 34
Hellbranch Run-6.6-1993	29	0.0000	0.0000	0.0	0		
Hellbranch Run-6-1997	30	0.0000	0.0000	0.0	22		
Hellbranch Run-7.4-1992	28	34.0000	7.3255	74.5	0		
Hellbranch Run-7.4-2001	28	32.0000	8.1710	51.0	0		
Hellbranch Run-7.4-2001	28	0.0000	0.0000	0.0	48		
Hellbranch Run-7.6-1992	27	0.0000	0.0000	0.0	40		
Hellbranch Run-7.6-1993	27	40.0000	7.6460	69.5	0		
Hellbranch Run-7.6-1993	27	0.0000	0.0000	0.0	20		
Hellbranch Run-8.8-1993	26	28.0000	6.6000	64.5	0		
Hellbranch Run-8.8-1993	26	0.0000	0.0000	0.0	0	F	14 - 30
Hellbranch Run-9.4-2001	25	0.0000	0.0000	0.0	46		
Howard Run-0.5-2001	3	52.0000	5.1910	55.5	0		
Howard Run-0.5-2002	3	40.0000	4.7630	56.0	0		
Howard Run-0.6-2001	3	0.0000	0.0000	0.0	0	VG	42 - 44
Jumping Run-0.2-2001	2	0.0000	0.0000	0.0	0	G	36 - 40
Jumping Run-0.3-2001	2	30.0000	3.8840	63.0	0		
Lake Run-0.9-2001	6	42.0000	4.9890	71.0	0		
Lake Run-0.9-2001	6	0.0000	0.0000	0.0	0	VG	42 - 44
Little Darby Creek (B. Darby headwaters)-0.2-1997	5	0.0000	0.0000	0.0	58		
Little Darby Creek (B. Darby headwaters)-0.4-1988	5	0.0000	0.0000	0.0	0	G	36 - 40
Little Darby Creek (B. Darby headwaters)-0.4-1997	5	0.0000	0.0000	0.0	54		
Little Darby Creek (B. Darby headwaters)-0.4-2001	5	50.0000	6.8855	68.0	0		
Little Darby Creek (B. Darby headwaters)-0.4-2001	5	0.0000	0.0000	0.0	50		
Little Darby Creek (B. Darby headwaters)-0.5-1988	5	52.0000	8.0525	88.5	0		
Little Darby Creek (B. Darby headwaters)-0.5-1989	5	57.0000	8.1810	0.0	0		
Little Darby Creek (B. Darby headwaters)-3.5-2001	2	55.0000	5.4715	71.5	0		
Little Darby Creek (B. Darby headwaters)-3.5-2001	2	0.0000	0.0000	0.0	54		
Little Darby Creek (B. Darby headwaters)-3.7-1988	2	44.0000	6.5915	63.5	0		
Little Darby Creek (B. Darby headwaters)-3.7-1997	2	0.0000	0.0000	0.0	44		
Little Darby Creek-0.1-1997	176	51.0000	9.0405	63.5	0		
Little Darby Creek-0.2-1990	176	42.0000	9.2730	0.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Little Darby Creek-0.3-1992	176	48.0000	7.9720	56.0	0		
Little Darby Creek-0.4-1999	176	48.0000	8.8710	0.0	0		
Little Darby Creek-0.5-1997	176	50.0000	9.3120	77.0	0		
Little Darby Creek-0.5-2001	176	0.0000	0.0000	0.0	56		
Little Darby Creek-0.6-1997	176	55.0000	9.8710	82.0	0		
Little Darby Creek-0.6-2000	176	44.0000	8.2350	72.0	0		
Little Darby Creek-0.7-1997	176	54.0000	9.7190	0.0	0		
Little Darby Creek-0.7-1997	176	0.0000	0.0000	0.0	48		
Little Darby Creek-0.7-1997	176	0.0000	0.0000	0.0	50		
Little Darby Creek-0.7-1997	176	0.0000	0.0000	0.0	50		
Little Darby Creek-0.7-1998	176	0.0000	0.0000	0.0	50		
Little Darby Creek-0.7-1998	176	0.0000	0.0000	0.0	50		
Little Darby Creek-0.8-1985	176	54.0000	6.4240	0.0	0		
Little Darby Creek-14.9-1979	151	0.0000	0.0000	0.0	36		
Little Darby Creek-14.9-1985	151	52.0000	5.8700	0.0	0		
Little Darby Creek-15.1-1984	151	47.2000	8.3088	0.0	0		
Little Darby Creek-15.1-1985	151	48.0000	8.3935	0.0	0		
Little Darby Creek-15.1-1986	151	46.6667	6.1410	0.0	0		
Little Darby Creek-15.2-1979	151	49.5000	9.0483	0.0	0		
Little Darby Creek-15.2-1981	151	40.4000	7.4940	0.0	0		
Little Darby Creek-15.2-1983	151	50.6667	9.1973	0.0	0		
Little Darby Creek-15.2-1984	151	47.2500	8.3126	91.0	0		
Little Darby Creek-15.2-1985	151	46.0000	7.4680	0.0	0		
Little Darby Creek-15.2-1986	151	43.3333	6.6133	0.0	0		
Little Darby Creek-15.2-1997	151	46.0000	8.5510	0.0	0		
Little Darby Creek-15.3-1979	151	48.0000	8.4640	0.0	0		
Little Darby Creek-15.3-1983	151	0.0000	0.0000	0.0	30		
Little Darby Creek-15.3-1984	151	46.7500	8.9821	0.0	0		
Little Darby Creek-15.3-1985	151	47.0000	7.9395	0.0	0		
Little Darby Creek-15.3-1986	151	48.5000	6.4635	0.0	0		
Little Darby Creek-15.3-1990	151	53.0000	9.1510	0.0	0		
Little Darby Creek-15.3-1990	151	0.0000	0.0000	0.0	42		
Little Darby Creek-15.3-1991	151	52.0000	9.3550	0.0	0		
Little Darby Creek-15.3-1992	151	0.0000	0.0000	0.0	40		
Little Darby Creek-15.3-1993	151	50.0000	8.9745	0.0	0		
Little Darby Creek-15.3-1993	151	0.0000	0.0000	0.0	34		
Little Darby Creek-15.3-1994	151	51.0000	9.1155	92.5	0		
Little Darby Creek-15.3-1995	151	54.0000	9.4100	0.0	0		
Little Darby Creek-15.3-1998	151	52.0000	9.0210	90.0	0		
Little Darby Creek-15.3-2001	151	57.0000	9.6180	95.5	0		
Little Darby Creek-15.3-2002	151	0.0000	0.0000	0.0	46		
Little Darby Creek-15.4-1979	151	48.0000	8.2740	0.0	0		
Little Darby Creek-15.4-1984	151	46.0000	9.5638	0.0	0		
Little Darby Creek-15.4-1985	151	40.0000	8.0110	0.0	0		
Little Darby Creek-15.4-1986	151	46.6667	7.2507	0.0	0		
Little Darby Creek-15.4-1992	151	55.0000	9.3210	0.0	0		
Little Darby Creek-15.4-2001	151	0.0000	0.0000	0.0	50		
Little Darby Creek-15.5-1979	151	48.0000	8.3560	0.0	0		
Little Darby Creek-15.5-1984	151	49.7500	9.4775	0.0	0		
Little Darby Creek-15.5-1985	151	46.0000	8.4120	0.0	0		
Little Darby Creek-15.5-1986	151	46.6667	6.4593	0.0	0		
Little Darby Creek-15.6-1984	151	47.0000	9.1003	0.0	0		
Little Darby Creek-15.6-1985	151	44.0000	7.3870	0.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Little Darby Creek-17.3-1986	142	52.0000	5.5430	0.0	0		
Little Darby Creek-17.3-1987	142	31.0000	6.5190	0.0	0		
Little Darby Creek-17-2001	142	0.0000	0.0000	0.0	48		
Little Darby Creek-19.5-1986	101	36.0000	5.8520	0.0	0		
Little Darby Creek-19.5-1987	101	50.0000	9.5780	0.0	0		
Little Darby Creek-19.5-1997	101	50.0000	8.7085	62.0	0		
Little Darby Creek-19.5-1997	101	0.0000	0.0000	0.0	52		
Little Darby Creek-2.5-1987	171	0.0000	0.0000	0.0	0	E	46 - 60
Little Darby Creek-20.5-2002	98	56.0000	9.3490	64.5	0		
Little Darby Creek-20.5-2002	98	0.0000	0.0000	0.0	48		
Little Darby Creek-23.1-2002	89	48.0000	9.4690	55.5	0		
Little Darby Creek-23.2-2002	89	0.0000	0.0000	0.0	0	E	46 - 60
Little Darby Creek-24.5-1991	83	42.6667	8.6983	0.0	0		
Little Darby Creek-24.5-1991	83	0.0000	0.0000	0.0	46		
Little Darby Creek-24.5-1992	83	49.0000	8.8135	56.5	0		
Little Darby Creek-24.5-1993	83	53.0000	8.9200	0.0	0		
Little Darby Creek-24.5-1993	83	0.0000	0.0000	0.0	32		
Little Darby Creek-24.5-1994	83	53.0000	9.5645	0.0	0		
Little Darby Creek-24.5-1997	83	51.0000	9.2695	66.0	0		
Little Darby Creek-24.5-1997	83	0.0000	0.0000	0.0	46		
Little Darby Creek-24.5-1998	83	50.0000	8.7940	0.0	0		
Little Darby Creek-24.5-2001	83	52.0000	9.3370	62.5	0		
Little Darby Creek-24.5-2001	83	0.0000	0.0000	0.0	58		
Little Darby Creek-26.5-2002	72	0.0000	0.0000	0.0	52		
Little Darby Creek-26.6-2002	72	54.0000	9.9800	58.0	0		
Little Darby Creek-27.5-1985	71	42.0000	8.3150	0.0	0		
Little Darby Creek-28.2-1997	71	54.0000	9.5430	74.5	0		
Little Darby Creek-29.4-2001	70	0.0000	0.0000	0.0	50		
Little Darby Creek-29.5-1997	70	54.0000	9.2540	0.0	0		
Little Darby Creek-29.5-2001	70	45.0000	8.8210	66.5	0		
Little Darby Creek-3.5-1992	170	0.0000	0.0000	0.0	44		
Little Darby Creek-3.8-2001	170	0.0000	0.0000	0.0	52		
Little Darby Creek-3.9-1991	170	0.0000	0.0000	0.0	0	VG	42 - 44
Little Darby Creek-3.9-1997	170	0.0000	0.0000	0.0	46		
Little Darby Creek-30.8-1997	67	0.0000	0.0000	0.0	52		
Little Darby Creek-33.2-2002	28	0.0000	0.0000	0.0	54		
Little Darby Creek-33.6-1991	28	44.6667	7.7040	0.0	0		
Little Darby Creek-33.6-1992	28	47.0000	6.7535	0.0	0		
Little Darby Creek-34.2-1993	26	45.0000	8.1510	0.0	0		
Little Darby Creek-34.2-1994	26	48.0000	7.9615	0.0	0		
Little Darby Creek-34.2-1998	26	50.0000	8.3440	0.0	0		
Little Darby Creek-34.6-2001	26	0.0000	0.0000	0.0	56		
Little Darby Creek-34.7-1991	26	0.0000	0.0000	0.0	46		
Little Darby Creek-34.7-1993	26	0.0000	0.0000	0.0	50		
Little Darby Creek-34.7-1997	26	0.0000	0.0000	0.0	58		
Little Darby Creek-34.7-2001	26	49.0000	7.2820	82.5	0		
Little Darby Creek-34.8-1997	26	42.0000	7.2705	56.5	0		
Little Darby Creek-38.8-1992	13	44.0000	7.3885	74.5	0		
Little Darby Creek-38.8-1993	13	42.0000	6.2110	0.0	0		
Little Darby Creek-38.8-1993	13	0.0000	0.0000	0.0	38		
Little Darby Creek-38.8-1994	13	38.0000	5.6620	0.0	0		
Little Darby Creek-38.8-1997	13	39.0000	5.2510	0.0	0		
Little Darby Creek-38.8-1997	13	0.0000	0.0000	0.0	48		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Little Darby Creek-38.8-2001	13	35.0000	4.4870	82.0	0		
Little Darby Creek-38.8-2001	13	0.0000	0.0000	0.0	48		
Little Darby Creek-39.1-1987	13	28.0000	6.3670	91.0	0		
Little Darby Creek-39.1-1992	13	50.0000	9.1000	0.0	0		
Little Darby Creek-39.3-1987	13	34.0000	6.0240	0.0	0		
Little Darby Creek-39.3-2001	13	0.0000	0.0000	0.0	48		
Little Darby Creek-39.6-2001	9	42.0000	4.6630	69.5	0		
Little Darby Creek-4.1-2001	170	55.0000	9.7200	99.0	0		
Little Darby Creek-41.2-1993	3	42.0000	5.6085	0.0	0		
Little Darby Creek-41.2-1993	3	0.0000	0.0000	0.0	48		
Little Darby Creek-41.2-1994	3	44.0000	4.6215	0.0	0		
Little Darby Creek-41.2-1997	3	39.0000	4.1210	69.5	0		
Little Darby Creek-41.2-1997	3	0.0000	0.0000	0.0	54		
Little Darby Creek-41.2-1998	3	42.0000	4.1950	0.0	0		
Little Darby Creek-41.2-2001	3	42.0000	3.9700	80.5	0		
Little Darby Creek-41.2-2001	3	0.0000	0.0000	0.0	0	VG	42 - 44
Little Darby Creek-41.2-2002	3	48.0000	4.3450	70.0	0		
Little Darby Creek-41.7-1991	3	0.0000	0.0000	0.0	30		
Little Darby Creek-41.7-1992	3	50.0000	6.5995	0.0	0		
Little Darby Creek-41.7-1992	3	0.0000	0.0000	0.0	48		
Little Darby Creek-4-1979	170	47.0000	8.3085	0.0	0		
Little Darby Creek-4-1979	170	0.0000	0.0000	0.0	26		
Little Darby Creek-4-1985	170	60.0000	6.1800	0.0	0		
Little Darby Creek-4-1987	170	60.0000	6.1540	0.0	0		
Little Darby Creek-4-1990	170	56.0000	5.7960	0.0	0		
Little Darby Creek-4-1991	170	48.0000	9.3533	0.0	0		
Little Darby Creek-4-1992	170	57.0000	9.5255	0.0	0		
Little Darby Creek-4-1993	170	52.0000	9.3240	0.0	0		
Little Darby Creek-4-1994	170	53.0000	9.7255	94.0	0		
Little Darby Creek-4-1996	170	58.0000	9.8870	95.0	0		
Little Darby Creek-4-1997	170	55.0000	9.8680	0.0	0		
Little Darby Creek-4-1998	170	52.0000	9.8060	0.0	0		
Little Darby Creek-5.2-1987	165	50.0000	9.0550	0.0	0		
Little Darby Creek-5.2-1987	165	0.0000	0.0000	0.0	0	MG	32 - 34
Little Darby Creek-5.3-1985	165	38.0000	4.7380	0.0	0		
Little Darby Creek-6.3-1987	163	48.0000	8.4910	0.0	0		
Little Darby Creek-6.3-1992	163	59.0000	10.1095	95.0	0		
Little Darby Creek-6.4-1996	163	52.0000	9.5580	0.0	0		
Little Darby Creek-6.4-1997	163	52.0000	9.6040	87.0	0		
Little Darby Creek-6.4-2001	163	0.0000	0.0000	0.0	54		
Little Darby Creek-6.5-1985	163	44.0000	5.1690	0.0	0		
Little Darby Creek-6.5-1991	163	58.0000	5.9800	0.0	0		
Little Darby Creek-6.5-2001	163	58.0000	9.3460	95.5	0		
Little Darby Creek-6.7-1986	163	54.0000	5.9560	0.0	0		
Little Darby Creek-7.3-1987	162	0.0000	0.0000	0.0	0	E	46 - 60
Little Darby Creek-7.3-1992	162	0.0000	0.0000	0.0	50		
Little Darby Creek-7.3-1996	162	0.0000	0.0000	0.0	0	E	46 - 60
Little Darby Creek-7.3-1997	162	0.0000	0.0000	0.0	52		
Little Darby Creek-8.2-1996	161	0.0000	0.0000	0.0	0	E	46 - 60
Little Darby Creek-8.3-1979	161	0.0000	0.0000	0.0	38		
Little Darby Creek-9.4-1986	159	52.0000	6.0140	0.0	0		
Little Darby Creek-9-1996	159	56.0000	9.2470	91.0	0		
Lizard Run-0.2-2001	1	0.0000	0.0000	0.0	0	VP	<= 6

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Pleasant Run-0.5-1988	9	57.0000	8.4600	67.5	0		
Pleasant Run-0.5-1989	9	58.0000	8.7520	0.0	0		
Pleasant Run-0.5-1997	9	56.0000	8.9470	83.0	0		
Pleasant Run-0.5-1997	9	0.0000	0.0000	0.0	54		
Pleasant Run-0.5-2001	9	58.0000	5.5610	59.5	0		
Pleasant Run-0.5-2001	9	0.0000	0.0000	0.0	56		
Pleasant Run-4.1-2001	5	0.0000	0.0000	0.0	0	VG	42 - 44
Pleasant Run-4.6-2001	5	54.0000	5.6700	72.0	0		
Prairie Run-0.3-2002	3	36.0000	2.5880	23.0	0		
Proctor Run-1.6-1992	10	0.0000	0.0000	0.0	0	E	46 - 60
Proctor Run-1.6-2001	10	52.0000	8.1870	73.0	0		
Proctor Run-1.7-1992	10	53.0000	8.9875	71.5	0		
Proctor Run-1.7-2001	10	0.0000	0.0000	0.0	0	E	46 - 60
Proctor Run-3.1-2001	9	48.0000	5.7920	65.0	0		
Proctor Run-3.2-2001	9	0.0000	0.0000	0.0	0	VG	42 - 44
Proctor Run-4.9-2001	4	42.0000	4.7770	71.5	0		
Proctor Run-4.9-2001	4	0.0000	0.0000	0.0	0	VG	42 - 44
Robinson Run-0.7-1992	12	36.0000	7.2240	72.0	0		
Robinson Run-0.7-2001	12	30.0000	3.8440	70.0	0		
Robinson Run-0.8-1992	12	0.0000	0.0000	0.0	32		
Robinson Run-0.8-2001	12	0.0000	0.0000	0.0	0	G	36 - 40
Robinson Run-2.1-2001	8	30.0000	4.0400	64.0	0		
Robinson Run-2.1-2001	8	0.0000	0.0000	0.0	0	F	14 - 30
Robinson Run-5.5-2001	5	0.0000	0.0000	0.0	0	VP	<= 6
Robinson Run-5.5-2001	5	0.0000	0.0000	0.0	0		
Smith Ditch-0.2-2001	7	0.0000	0.0000	0.0	0	E	46 - 60
Smith Ditch-0.3-2001	7	28.0000	4.1340	73.0	0		
Smith Ditch-2.1-2001	6	52.0000	5.8330	77.5	0		
Smith Ditch-2.1-2001	6	0.0000	0.0000	0.0	0	E	46 - 60
Spain Creek-0.1-1988	9	0.0000	0.0000	0.0	0	G	36 - 40
Spain Creek-0.1-2001	9	53.0000	8.5400	76.0	0		
Spain Creek-0.1-2001	9	0.0000	0.0000	0.0	56		
Spain Creek-0.2-1993	9	48.0000	8.7830	74.0	0		
Spain Creek-0.4-1981	9	56.0000	7.8720	77.0	0		
Spain Creek-0.5-1988	9	54.0000	9.4280	74.5	0		
Spain Creek-0.5-1989	9	57.0000	8.6245	0.0	0		
Spain Creek-2.6-1988	9	0.0000	0.0000	0.0	0	G	36 - 40
Spain Creek-3.4-2001	6	0.0000	0.0000	0.0	44		
Spain Creek-3.6-1988	6	49.0000	8.6825	82.5	0		
Spain Creek-3.7-1993	6	50.0000	7.9190	0.0	0		
Spain Creek-3.7-2001	6	56.0000	8.4200	72.0	0		
Spain Creek-5.7-2001	4	44.0000	4.8440	66.0	0		
Spain Creek-5.7-2001	4	0.0000	0.0000	0.0	0	MG	32 - 34
Spring Fork-0.7-1992	38	0.0000	0.0000	0.0	54		
Spring Fork-0.9-1992	38	58.0000	10.5060	90.0	0		
Spring Fork-10.1-2002	15	40.0000	6.8210	69.0	0		
Spring Fork-10.1-2002	15	0.0000	0.0000	0.0	56		
Spring Fork-13.3-2001	0	0.0000	0.0000	0.0	0	VG	42 - 44
Spring Fork-13.4-2001	8	54.0000	5.8710	53.0	0		
Spring Fork-15.8-2001	4	48.0000	4.7830	60.5	0		
Spring Fork-15.8-2001	4	0.0000	0.0000	0.0	0	G	36 - 40
Spring Fork-15.9-1992	4	50.0000	8.4575	74.0	0		
Spring Fork-15.9-1992	4	0.0000	0.0000	0.0	0	F	14 - 30

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Spring Fork-3.3-2002	32	0.0000	0.0000	0.0	56		
Spring Fork-3.4-2002	32	0.0000	0.0000	0.0	44		
Spring Fork-3.5-1986	32	36.0000	5.0050	0.0	0		
Spring Fork-7.7-1992	19	0.0000	0.0000	0.0	0	G	36 - 40
Spring Fork-7.7-2001	19	0.0000	0.0000	0.0	0	G	36 - 40
Spring Fork-7.81-1994	19	32.0000	5.0950	0.0	0		
Spring Fork-7.8-1992	19	50.0000	9.0185	48.0	0		
Spring Fork-7.8-2001	19	48.0000	5.3710	54.5	0		
Spring Fork-7.82-1994	19	39.0000	5.2085	0.0	0		
Spring Fork-7.83-1994	19	32.0000	4.9260	0.0	0		
Spring Fork-7.84-1994	19	29.0000	4.7000	0.0	0		
Spring Fork-7.85-1994	19	43.0000	5.6080	0.0	0		
Spring Fork-7.86-1994	19	38.0000	5.1490	0.0	0		
Spring Fork-7.87-1994	19	41.0000	5.7095	0.0	0		
Spring Fork-7.88-1994	19	35.0000	5.3020	0.0	0		
Springwater Run-0.8-2001	2	50.0000	4.4520	48.5	0		
Springwater Run-0.8-2001	2	0.0000	0.0000	0.0	0	F	14 - 30
Sugar Run-0.5-1981	19	26.8000	5.9084	0.0	0		
Sugar Run-0.5-1990	19	32.0000	6.7510	72.0	0		
Sugar Run-0.5-1990	19	0.0000	0.0000	0.0	34		
Sugar Run-0.5-1995	19	41.0000	5.0110	72.0	0		
Sugar Run-0.5-1995	19	0.0000	0.0000	0.0	0	VG	42 - 44
Sugar Run-0.5-2001	19	40.0000	4.5940	65.5	0		
Sugar Run-0.5-2001	19	0.0000	0.0000	0.0	0	VG	42 - 44
Sugar Run-2.8-1995	14	28.0000	4.1190	69.5	0		
Sugar Run-2.8-1995	14	0.0000	0.0000	0.0	0	MG	32 - 34
Sugar Run-5.4-1992	11	29.0000	7.0065	67.0	0		
Sugar Run-5.4-1995	11	16.0000	1.0235	61.0	0		
Sugar Run-5.4-2001	11	34.0000	4.0560	38.5	0		
Sugar Run-5.5-1990	11	19.0000	5.5560	72.0	0		
Sugar Run-5.5-1992	11	0.0000	0.0000	0.0	14		
Sugar Run-5.5-1995	11	0.0000	0.0000	0.0	0	P	8 - 12
Sugar Run-5.5-2001	11	0.0000	0.0000	0.0	0	G	36 - 40
Sugar Run-6.8-1992	10	0.0000	0.0000	0.0	28		
Sugar Run-6.9-1990	10	0.0000	0.0000	0.0	46		
Sugar Run-6.9-1990	10	0.0000	0.0000	0.0	38		
Sugar Run-6.9-2001	10	0.0000	0.0000	0.0	0	MG	32 - 34
Sugar Run-7.5-2001	4	26.0000	3.5490	31.0	0		
Sugar Run-7.7-1995	4	22.0000	2.9510	38.0	0		
Sugar Run-7.7-1995	4	0.0000	0.0000	0.0	0	P	8 - 12
Sugar Run-7.7-2001	4	0.0000	0.0000	0.0	0	F	14 - 30
Sugar Run-7.9-1995	4	20.0000	2.5165	40.0	0		
Sugar Run-7.9-1995	4	0.0000	0.0000	0.0	0	VP	<= 6
Sugar Run-7-1992	10	28.0000	7.1750	34.0	0		
Sugar Run-7-1995	10	26.0000	3.6460	50.5	0		
Sugar Run-7-1995	10	0.0000	0.0000	0.0	0	P	8 - 12
Sugar Run-7-2001	10	26.0000	4.7340	29.5	0		
Sweeney Run-0.2-2001	4	0.0000	0.0000	0.0	0	F	14 - 30
Sweeny Run-0.1-2001	4	46.0000	4.2060	58.0	0		
Treacle Creek-0.7-1992	37	0.0000	0.0000	0.0	36		
Treacle Creek-0.7-1997	37	0.0000	0.0000	0.0	42		
Treacle Creek-0.7-2001	37	0.0000	0.0000	0.0	0	MG	32 - 34
Treacle Creek-0.9-1997	37	41.0000	8.0930	0.0	0		

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Stream - River Mile - Year Sampled	Drain Area	IBI	IWB	QHEI	ICI	Nrtve	ICI Num
Treacle Creek-11.7-2001	6	0.0000	0.0000	0.0	0	VG	42 - 44
Treacle Creek-11.8-2001	6	40.0000	4.9360	67.5	0		
Treacle Creek-6-2001	17	48.0000	5.1060	66.5	0		
Treacle Creek-6-2001	17	0.0000	0.0000	0.0	0	VG	42 - 44
Treacle Creek-8.31-1994	10	47.0000	5.1605	0.0	0		
Treacle Creek-8.3-1992	10	50.0000	7.3010	62.0	0		
Treacle Creek-8.3-1992	10	0.0000	0.0000	0.0	0	E	46 - 60
Treacle Creek-8.3-2001	10	52.0000	5.7790	67.5	0		
Treacle Creek-8.3-2001	10	0.0000	0.0000	0.0	0	E	46 - 60
Treacle Creek-8.32-1994	10	38.0000	4.5755	0.0	0		
Treacle Creek-8.33-1994	10	32.0000	4.2915	0.0	0		
Treacle Creek-8.34-1994	10	47.0000	5.2290	0.0	0		
Treacle Creek-8.35-1994	10	48.0000	5.5745	0.0	0		
Treacle Creek-8.36-1994	10	47.0000	5.2595	0.0	0		
Treacle Creek-8.37-1994	10	37.0000	4.9010	0.0	0		
Treacle Creek-8.38-1994	10	43.0000	5.0775	0.0	0		
Trib. to Big Darby Creek (RM 69.40)-0.4-2001	5	0.0000	0.0000	0.0	0	G	36 - 40
Trib. to Big Darby Creek (RM 74.91)-0.3-2001	4	0.0000	0.0000	0.0	0	VG	42 - 44
Trib. to Big Darby Creek (RM 18.41)-0.1-2002	2	42.0000	3.3530	52.5	0		
Trib. to Big Darby Creek (RM 18.41)-0.1-2002	2	0.0000	0.0000	0.0	0	G	36 - 40
Trib. to Big Darby Creek (RM 20.20)-0.8-1994	4	52.0000	8.7680	80.5	0		
Trib. to Big Darby Creek (RM 20.20)-0.8-2001	4	44.0000	4.7300	77.5	0		
Trib. to Big Darby Creek (RM 20.20)-0.8-2001	4	0.0000	0.0000	0.0	0	G	36 - 40
Trib. to Big Darby Creek (RM 23.77)-0.1-2001	1	30.0000	1.1410	61.5	0		
Trib. to Big Darby Creek (RM 69.40)-0.3-2001	5	44.0000	4.3850	33.5	0		
Trib. to Big Darby Creek (RM 69.40)-0.3-2002	5	36.0000	4.4010	30.5	0		
Trib. to Big Darby Creek (RM 74.91)-0.2-2001	4	50.0000	5.2220	62.5	0		
Trib. to Big Darby Creek (RM 77.69)-0.3-2002	2	50.0000	4.9900	62.0	0		
Trib. to Big Darby Creek (RM 8.80)-1.4-1995	2	34.0000	3.1840	71.5	0		
Trib. to Big Darby Creek (RM 9.11)-0.3-1994	1	52.0000	7.6540	76.0	0		
Trib. to Buck Run (RM 7.16)-1-2002	5	38.0000	4.4880	30.0	0		
Trib. to Flat Branch (RM 1.50)-0.1-2001	4	0.0000	0.0000	0.0	0	F	14 - 30
Trib. to Smith Ditch (RM 0.06)-0.2-2001	1	50.0000	4.3670	67.0	0		
Trib. to Sugar Run (RM 7.39)-0.1-2001	5	30.0000	4.3740	27.0	0		
Trib. to Sugar Run (RM 7.39)-0.1-2001	5	0.0000	0.0000	0.0	0	MG	32 - 34
Wamp Ditch-0.1-2001	5	30.0000	3.1010	45.5	0		
Wamp Ditch-0.1-2001	5	0.0000	0.0000	0.0	0	MG	32 - 34
Worthington Ditch-0.2-2001	4	24.0000	3.8680	46.5	0		
Worthington Run-0.2-2001	4	0.0000	0.0000	0.0	0	MG	32 - 34
Yutzy Ditch-0.4-2001	4	0.0000	0.0000	0.0	0	MG	32 - 34

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APPENDIX J – OEPA SAMPLING SITES AND RESULTS

(OEPA, 2004, Pages A.99-A104)

Table A.15. Aquatic life use attainment status for the streams sampled in the Big Darby Creek watershed during July - October, 2001 and based on the recommended uses.

Additional sampling was conducted during July - October, 2002 to fill in gaps and further characterize and evaluate impacted areas (sites and results noted in **bold**). The Index of Biotic Integrity (IBI), Modified Index of Well Being (MIwb), and Invertebrate Community Index (ICI) scores are based on the performance of fish (IBI, MIwb) and macroinvertebrate communities (ICI). The Qualitative Habitat Evaluation Index (QHEI) is a measure of the ability of the physical habitat to support biological communities.

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
Big Darby Creek (02-200) (WWH/EWH + CWH Recommended)								
-- /83.2	1.3	71.43	-	-	42[ns]	-	(Full)	Ust. At pvt prop.
82.5/82.5	1.5	43.48	52	NA	46	68.0	Full	CR 152
80.8/ --	4.4	19.61	42*	NA	-	61.0	(Non)	SR 287
79.2/79.3	5.6	12.2	48[ns]	NA	56	64.5	Full	TR 157
Big Darby Creek (02-200) (EWH)								
78.4/78.5	19.4	12.5	37.3*	NA	52	63.5	Partial	Dst. Flat Branch
76.6/76.5	32	6.94	43*	8.91[ns]	56	73.5	Partial	N. Lewisburg Rd.
69.5/69.4	69	5.92	52	9.24[ns]	52	70.5	Full	Ust. Collins Rd.,ust.trib
67.0/**67.2**	81	4.35	44*	8.34*	**E**	-	**Partial**	Ust. Milford Center
66.0/66.0	**83**	**4.35**	**52**	**9.2**[ns]	**40***	**74.5**	**Partial**	Dst. Milford Center
63.8/64.4	89	8.93	49[ns]	8.18*	50	80.5	Partial	Ust. Streng Rd.,Buck Run
62.5/62.9	121	3.80	47[ns]	7.52*	42[ns]	83.5	Partial	SR 38, Dst. Buck Run
54.2/54.1	136	4.76	53	9.23[ns]	42[ns]	83.5	Full	US 42, ust. Ranco Inc
53.9/53.9	136	4.76	52	9.35[ns]	E	93.0	Full	Dst US 42, dst Ranco Inc
52.5/ --	150	7.04	51	9.08[ns]	-		(Full)	Ust SR 161&Sweeney Run
/52.1	150	5.21	-	-	52	-	(Full)	Ust.. Plain City WWTP
52.0/52.0	150	5.21	43*	8.78*	44[ns]	81.0	Partial	Dst. Plain City WWTP
49.5/49.7	171	4.69	48[ns]	8.3*	56	76.0	Partial	Ust. Amity Pike
42.0/42.1	240	7.40	55	9.87	50	81.5	Full	Ust. US Rt 70
38.9/**38.9**	247	3.97	51	9.01[ns]	**52**	82.5	**Full**	Dst. L.D. Estates WWTP
34.1/34.2	253	4.48	55	10.14	52	93.5	Full	Ust. Little Darby Creek
29.1/-	449	4.52	54.7	10.82	-	86.0	(Full)	Ust. Darbydale
/**28.6**	450	4.52	-	-	**E**	-	**(Full)**	Dst. Darbydale
-- /26.9	453	5.85	-	-	54	-	(Full)	Adj Gville-Hburg Rd.
26.1 /26.1	496	7.87	**56**	**9.4**	**E**	**94.5**	**Full**	Dst. Hellbranch Run
23.8/23.8	498	6.71	55	10.20	46	87.5	Full	SR 762
22.8/22.5	505	4.1	53	11.36	56	84.5	Full	DST. PCI WWTP
18.7/19.1	513	4.74	52	10.53	E[X15]	85.0	Full	Adj Darby Creek Rd.
15.7 /15.8	529	3.94	**56**	**10.5**	**52**	**88.5**	**Full**	Adj. Gulick Rd.
/**15.1**	532	3.94	-	-	**54**	-	**(Full)**	Dst. Georges Run
13.4/13.5	534	4.37	52	10.82	56	85.5	Full	SR 316, Darbyville
10.4/11.2	**537**	**4.15**	**56**	**9.6**	**52**	**85.0**	**Full**	Off Darby Rd.
8.4 /8.4	544	4.74	**48**[ns]	**9.4**	**52**	**69.5**	**Full**	Dst. Ag Trib. (Conflu RM 8.5)
/**5.3**	550	7.35	-	-	**52**	-	**(Full)**	Dst. Ag Trib. (Conflu RM 5.86)
3./1/3.2	552	2.86	54	11.02	56	82.0	Full	SR 104
0.30/0.30	555	12.2	50	11.01	-	71.5	(Full)	Adj. NSCD project

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
Flat Branch (02-223) (RM 78.48) (MWH)								
3.2/3.2	3.3	9.09	26	NA	G	25.5	Full	O'Dell Rd.
/2.2	9.3	6.67	-	-	MG	-	(Full)	Adj. SR 739, dst. Tribs
0.8/1.0	13.9	4.93	28	NA	50	36.5	Full	Near mouth
U. T. to Flat Branch (02-365) (RM 1.5) (Undesignated/MWH Recommended)								
/0.1	3.5	4.42	-	-	F	36.5	(Full)	North Trib TRC
Little Darby Creek (02-251) (RM 78.34) (Logan Co.) (Undesignated/EWH + CWH Recommended)								
3.5/3.5	2.4	31.25	55	NA	54	71.5	Full	SR 287
0.4/0.4	3.9	26.32	50	NA	50	68.0	Full	CR 153
U.T. to Big Darby Creek (02-361) (RM 74.91) (Undesignated/ EWH Recommended)								
0.2/0.3	3.9	13.51	50	NA	VG[ns]	62.5	Full	CR 153
Spain Creek (02-222) (RM 74.3) (WWH/WWH + CWH Recommended)								
5.7/5.7	3.5	22.22	44	NA	MG[ns]	66.0	Full	Lewisburg Rd.
Spain Creek (02-222) (RM 74.3) (WWH/EWH + CWH Recommended)								
3.7/3.4	6.0	21.74	56	NA	44[ns]	72.0	Full	Gilbert Rd.
0.1/0.1	9.1	11.36	53	NA	56	76.0	Full	Cratty Rd.
Pleasant Run (02-221) (RM 72.01) (EWH)								
4.6/4.1	4.5	22.22	54	NA	VG[ns]	72.0	Full	Dunn Rd.
0.5/0.5	9.4	14.3	58	NA	56	59.5	Full	M'burg-P'City Rd.
U.T. to Big Darby Creek (02-360) (RM 69.4) (Undesignated/WWH Recommended)								
0.2/0.4	4.6	17.68	50	NA	G	64.5	Full	M'burg-P'City Rd.
Hay Run (02-220) (RM 67.6) (WWH/EWH Recommended)								
0.3/0.2	5.8	7.35	54	NA	VG[ns]	52.5	Full	M'burg-P'City Rd.
Prairie Run (02-219) (RM 63.84) (Undesignated/LRW Recommended)								
0.3/ -	3.0	13.89	28	NA	-	**23.0**	**Full**	M'burg-P'City Rd.
Buck Run (02-209) (RM 63.74) (WWH)								
10.4/10.4	5.1	5.99	26*	NA	MG[ns]	40.0	Non	Allen Ctr. -P'burg Rd.
7.8/7.8	9.2	6.58	28*	NA	G	55.5	Partial	SR 245
5.0/5.0	18.1	4.83	-	-	MG[ns]	-	(Full)	Milford-Amrine Rd.
0.1/0.6	29.7	6.71	44	7.14*	MG[ns]	70.5	Partial	Orchard Rd.

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
Robinson Run (02-207) (RM 53.69) (WWH)								
/5.5	4.6	6.71	-	-	VP*	-	(Non)	Dst. Hawn Rd.
2.1/2.1	8.4	9.35	30*	NA	F*	64.0	Non	SR 736
0.7/0.8	11.5	15.87	30*	NA	MG[ns]	70.0	Partial	US 42
Sweeny Run (02-357) (RM 52.11) (Undesignated/WWH Recommended)								
0.1/0.2	4.0	31.25	46	NA	F*	58.0	Partial	Mouth
Sugar Run (02-206) (RM 50.92) (WWH/MWH Recommended)								
7.5/7.7	4.1	7.52	26	NA	F	31.0	Full	Ind.Pkwy.@farm
7.0/6.9	9.5	7.52	26	NA	MG	29.5	Full	Taylor rd.,Dst.landfill
Sugar Run (02-206) (RM 50.92) (WWH)								
5.4/5.5	11.0	5.21	34*	NA	G	38.5	Partial	US 42
0.5/0.5	19.4	7.69	40	NA	VG	65.5	Full	Cemetery Pike
U.T. to Sugar Run (02-358) (RM 7.39) (Undesignated/MWH Recommended)								
0.1/0.1	5.0	3.73	30	NA	MG	27.0	Full	Ind.Pkwy.
Worthington Ditch (02-356) (RM 50.62) (Undesignated/WWH Recommended)								
0.2/0.2	4.4	20.83	24	NA	MG[ns]	--	Non	P'city-G'ville Rd.
Ballenger-Jones Ditch (02-355) (RM 49.68) (Undesignated/WWH Recommended)								
0.4/0.2	6.0	15.15	40	NA	E	69.0	Full	P'city-G'ville Rd.
Yutzy Ditch (02-364) (RM 47.1) (Undesignated/WWH Recommended)								
0.4/0.4	4.3	27.03	-	-	MG[ns]	NA	(Full)	P'city-G'ville Rd.
Fitzgerald Ditch (02-272) (RM 44.96) (Undesignated/WWH Recommended)								
0.5/0.5	5.1	33.33	32*	NA	G	56.5	Partial	P'city-G'ville Rd.
Little Darby Creek (02-210) (RM 34.1) (EWH/ EWH + CWH Recommended)								
41.2/41.2	3.3	43.47	42*/**48**	NA	VG[ns]	80.5/**70**	Part/**Full**	Alison Rd.
39.6/39.3	9.4	13.33	42*	NA	48	69.5	Partial	Ust SR 29dst fert.dist.
38.8/38.8	13.2	12.99	35*	NA	48	82.0	Partial	Wing Rd. Dst M'burg WWTP
Little Darby Creek (02-210) (RM 34.1) (EWH)								
34.7/34.6	25.9	4.72	49[ns]	NA	56	82.5	Full	Irwin Rd.
- /**33.2**	28.0	4.50	-	-	**54**	-	**(Full)**	Ust. R.dale-Mford Center Rd.
29.5/29.4	70.0	2.67	45*	8.8*	50	66.5	Partial	Axe Handle Rd.
26.6 /26.5	72.0	21.7	**54**	**10.0**	**52**	**58.0**	**Full**	Dst. Chuckery
24.5/24.5	83.0	2.02	52	9.3[ns]	58	62.5	Full	Rosedale-Plain City Rd.
23.1/23.2	89.0	2.02	**48[ns]**	**9.5**	**E**	**55.5**	**Full**	Dst. Finley -Guy Rd.
20.5/20.5	98.0	3.18	**56**	**9.3[ns]**	**48**	**64.5**	**Full**	Ust. Arthur Bradley Rd.

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
Little Darby Creek (02-210) (RM 34.1) (EWH)								
/17.0	142	4.42	-	-	48	-	(Full)	Adj. L. Darby Rd.
15.3/15.4	151	2.69	57	9.6	50	95.5	Full	US 42
/**15.3**	151	2.69	-	-	**46**		**(Full)**	Dst. US 42
6.5/6.4	163	8.47	58	9.3[ns]	54	95.5	Full	US 40, Ust W. Jeff WWTP
4.1/3.8	170	5.59	55	9.7	52	99.0	Full	Roberts Rd. Dst WWTP
0.2/0.5	176	9.9	49[ns]	9.0[ns]	56	77.5	Full	Mouth @ Metropark
Clover Run (02–218) (RM 39.8) (EWH/WWH Recommended)								
0.6/0.6	2.0	47.62	36[ns]	NA	VG	60.0	Full	Rd to Maple Grove Cem.
Lake Run (02-216) (RM 36.9) (EWH/EWH Deferred)								
0.9/0.9	6.0	16.39	42*	NA	VG[ns]	71.0	Full	SR 4
Jumping Run (02-217) (RM 3.9) (EWH/WWH Recommended)								
0.3/0.2	2.4	16.67	30*	NA	G	63.0	Partial	SR 559
Treacle Creek (02-213) (RM 31.3) (EWH)								
11.8/11.7	5.7	15.63	40*	NA	VG[ns]	67.5	Partial	M'burg-Belle. Rd.
8.3/8.3	10.3	34.48	52	NA	E	67.5	Full	Eagle Rd.
Treacle Creek (02-213) (RM 31.3) (EWH)								
6.0/6.0	17.0	16.13	48[ns]	NA	VG[ns]	66.5	Full	SR 161 at Irwin
0.8/0.7	37.3	3.45	-	-	MG*	29.5	(Non)	Covered bridge nr. mouth
Howard Run (02-215) (RM 5.4) (EWH)								
0.5/0.6	2.6	13.27	52	NA	VG[ns]	55.5	Full	McMahill Rd.
Proctor Run (02-214) (RM 3.69) (EWH)								
4.9/4.9	3.9	41.67	42*	NA	VG[ns]	71.5	Partial	Park Rd.
3.1/3.2	9.1	22.22	48[ns]	NA	VG[ns]	65.0	Full	SR 559
1.6/1.7	10.0	12.35	52	NA	E	73.0	Full	McMahill Rd.
Barron Creek (02-212) (RM 24.4) (EWH/WWH Recommended)								
2.1/2.1	4.9	5.26	48[ns]	NA	MG[ns]	44.5	Full	Rosedale-Plain City Rd.
0.2/0.1	6.3	14.58	-	-	MG[ns]	-	Full	SR 38
Wamp Ditch (02-363) (RM 23.0) (Undesignated/WWH)								
0.1/0.14.8	12.50		30*	NA	MG[ns]	45.5	Partial	Vogelburg Rd.
Spring Fork (02-211) (RM 17.46) (EWH)								
15.8/15.8	4.3	17.24	48[ns]	NA	G*	60.5	Partial	Wren Rd.
13.7/13.3	8.3	12.99	54	NA	VG[ns]	62.5	Full	Ust. SR 29, ust. Trib.
10.1/10.1	14.6	3.73	**40***	NA	56	**69.0**	**Partial**	Ust. Cemetery Rd.

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
Spring Fork (02-211) (RM 17.46) (EWH)								
7.8/7.7	19.3	3.33	48[ns]	NA	G*	54.5	Partial	R'dale-M'Ctr. Rd
/**3.4**	32	8.3	-	-	**E**	-	**(Full)**	Dst. SR 38
/**3.3**	32	8.3	**52**	**9.8**	**56**	**67.5**	**Full**	Dst. SR 38
Bales Fork (02–362) (RM 3.64) (Undesignated/WWH Recommended)								
0.4/0.4	5.2	12.86	50	NA	G	70.0	Full	R'dale-M' Ctr. Rd.
Smith Ditch (02-353) (RM 31.69) (Undesignated/EWH Recommended)								
2.1/2.1	5.9	40.0	52	NA	E	77.5	Full	G'ville-W'ville Ditch
0.3/0.2	6.7	35.71	28*	NA	E	73.0	Partial	Biggert Rd.
Trib to Smith Ditch (02-354) (RM 0.06) (Undesignated/EWH Recommended)								
0.2/-	0.9	7692	50	NA	-	67.0	(Full)	Biggert Rd.
Gay Run (02-298) (RM 26.48) (Undesignated/WWH Recommended)								
2.2/2.2	1.2	55.56	46	NA	G	66.5	Full	Boyd Rd.
Hellbranch Run (02-204) (RM 26.1) (WWH)								
10.3/9.4	24.8	3.37	36[ns]	6.76*	46	39.5	Partial	Dst. Conflu./dst. Al
7.4/7.4	27.9	7.52	32*	8.17[ns]	48	51.0	Partial	Kunz Rd.
5.8/5.7	30.5	7.3	35*	8.16[ns]	G	65.5	Partial	Dst Ohurst Knolls WWTP
Hellbranch Run (02-204) (RM 26.1) (WWH/EWH Recommended)								
3.7/3.7	32.6	16.67	47[ns]	9.02[ns]	50	83.5	Full	Beatty Rd.
1.0/0.9	35.3	11.36	49[ns]	9.18[ns]	VG [X15ns]	84.5	Full	Lambert Rd.
0.5/0.5	35.4	11.36	41*	9.07[ns]	VG[ns]	83.5	Partial	Dst. Timberlake WWTP
/**0.5**	35.4	11.36	-	-	**VG**[ns]	-	(**Full)**	Dst. Timberlake WWTP
Hamilton Ditch (02-259) (RM 11.19) (MWH)								
3.4/3.4	3.4	4.44	16*	NA	F	21.0	Non	Walker Rd.
0.5/0.5	9.4	7.41	24*	NA	40	36.5	Non	US 40
Clover Groff Ditch (02-245) (RM 11.19) (MWH)								
4.7/4.7	3.8	3.39	18*	NA	VP*	22.0	Non	Roberts Rd.
0.8/0.8	6.7	9.90	28*	NA	20*	61.5	Non	Dst. US 40
Springwater Run (02-203) (RM 24.0) (WWH)								
0.8/0.2	1.8	50.0	50	NA	F*	48.5	Partial	US 62 at mouth
U.T. to Big Darby Creek (02-352) (RM 23.77) (Undesignated/WWH Recommended)								
0.1/-	0.8	111.11	30*****	NA	-	61.5	(Non)	South of SR 762

River Mile Fish/Bugs	Drainage Area (mi^2)	Gradient (ft/mi)	IBI	Mod. Iwb	ICIa	QHEIb	Attainment Status[c]	Comments
U.T. to Big Darby Creek (02-270) (RM 20.2) (Undesignated/WWH Recommended)								
0.8/0/8	4.3	25.64	44	NA	G	77.5	Full	H'burg-D'ville Rd.
U.T. to Big Darby Creek (02-366) (RM 18.41) (Undesignated/WWH Recommended)								
0.1/**0.1**	**2.0**	27.78	42	NA	**F***	52.5	**(Partial)**	Mouth
Greenbrier Creek (02-202) (RM 16.75) (WWH)								
2.7/2.7	4.4	34.48	40	NA	MG[ns]	57.0	Full	Mt.Ster.-Com. Pt. Rd.
1.3/**1.3**	8.2	17.86	46	NA	**VG**	74.5	**Full**	H'burg-D'ville Rd.
Georges Run (02-201) (RM 14.4) (WWH)								
0.5/0.5	1.2	58.82	46	NA	MG[ns]	61.0	Full	C.Ville-London North Rd.
Lizard Run (02-273) (RM 12.93) (Undesignated/LRW)								
0.2/0.2	1.2	41.67	-	-	VP*	-	(Non)	London Northern Rd.

* Significant departure from ecoregion biocriteria; poor and very poor results are underlined.
** Attainment status not applied to mixing zones.
ns Nonsignificant departure from ecoregion biocriteria (4 IBI or ICI units; 0.5 Iwb units).
a Narrative evaluation is used in lieu of ICI for qualitative samples (E=Excellent, VG=Very Good, G=Good, MG=Marginally good, F=Fair, P=Poor, VP=Very Poor).
b Qualitative Habitat Evaluation Index (QHEI) values based on the most recent version (Rankin 1989).
c Use attainment status based on one organism group is parenthetically expressed.
X15 Less than optimal flow over artificial substrate samplers

Ecoregion Biocriteria: Eastern Corn Belt Plains (ECBP)

INDEX - Site Type	WWH	EWH	MWHd
IBI - Headwaters/Wading	40	50	24
Mod. Iwb - Wading	8.3	9.4	5.8
ICI	36	46	22

d - Modified Warmwater Habitat for channel modifications.

APPENDIX K – BACTERIA USE ATTAINMENT (OEPA, 2004, A127-A129)

- ANALYSIS OF PRIMARY CONTACT RECREATION STANDARDS (PCR)

Unit	Geometric Mean			90th Percentile		
	FC	EC		FC	EC	
Recreation Standard	*1000*	*126$_a$*	*336$_b$*	*2000*	*298$_a$*	*626$_b$*
Upper Big Darby (Headwaters to downstream Sugar Run) [05060001 190] (FC n=167, EC n=139)	850.2	**1131.9**	**1131.9**	**6901**	**8802**	**8802**
Upper Big Darby Creek RM 82.5-52.0 (mainstem only) (FC n=52, EC n=43)	855.4	**1282.1**	**1282.1**	**7844**	**12250**	**12250**
Flat Branch and tribs incl.Little Darby (Logan Co.) (FC n=30, EC n=24)	906.9	**1475.8**	**1475.8**	**22000**	**30027**	**30027**
Flat Branch and tribs. (FC n=20, EC n=16)	**1418.9**	**2810.1**	**2810.1**	**22616**	**35986**	**35986**
Little Darby (Logan Co.) (FC n=10, EC n=8)	370.4	**407.1**	**407.1**	1231	**1265**	**1265**
Spain Creek incl. Pleasant Run and U.T. to BDC at RM 74.91(FC n=30, EC n=24)	**1058.8**	**994.1**	**994.1**	**3936**	**4612**	**4612**
Spain Creek (FC n=15, EC n=12)	**1208.4**	**1249.8**	**1249.8**	**4692**	**4736**	**4736**
Pleasant Run (FC n=10, EC n=8)	902.4	**754.9**	**754.9**	**3010**	**2586**	**2586**
Hay Run incl. U.T. to BDC at RM 69.40 (FC n=10, EC n=8)	780.4	**618.1**	**618.1**	**2209**	**1726**	**1726**
Buck Run (FC n=20, EC n=16)	684.1	**1133.3**	**1133.3**	**8009**	**6970**	**6970**
Robinson Run incl. Sweeney Run (FC n=14, EC n=12)	655.8	**825.1**	**825.1**	**3843**	**5963**	**5963**
Sugar Run (n=16)	405	**361**	**361**	1470	**740**	**740**
Middle Big Darby (Sugar Run to Little Darby Creek) [050600001 200] (n=28)	324.6	**300.5**	**300.5**	1704	**790**	**790**
Middle Big Darby Creek RM 49.5-34.1 (mainstem) (n=12)	138.4	**146.5**	**146.5**	494	**562**	**562**
Ballenger-Jones Ditch and Worthington Ditch (n=8)	368.3	**301.9**	**301.9**	1858	**704**	**704**
Fitzgerald Ditch and Yutzy Ditch (n=8)	659.9	**609.0**	**609.0**	2274	**3749**	**3749**
Ballenger-Jones, Worthington, Fitzgerald, and Yutzy Ditches (n=16)	493.0	**428.8**	**428.8**	1897	**1810**	**1810**
Little Darby Creek (headwaters to Big Darby Creek) [050600001 210] (n=132)	476.5	**430.0**	**430.0**	3790	**3723**	**3723**

Unit	Geometric Mean			90th Percentile		
	FC	EC		FC	EC	
Recreation Standard	*1000*	*126$_a$*	*336$_b$*	*2000*	*298$_a$*	*626$_b$*
Little Darby Creek (mainstem) (n=49)	207.5	**158.6**	**158.6**	967	**928**	**928**
Clover Run, Lake Run, Jumping Run (n=15)	782.1	**842.6**	**842.6**	4282	**3363**	**3363**
Treacle Creek incl. Howard Run and Proctor Run (n=40)	641.0	**522.3**	**522.3**	3329	**2708**	**2708**
Howard Run and Proctor Run (n=20)	600.0	**530.5**	**530.5**	4029	**4273**	**4273**
Howard Run (n=5)	833.9	**806.7**	**806.7**	1097	**1720**	**1720**
Proctor Run (n=15)	537.6	**461.3**	**461.3**	7075	**6750**	**6750**
Treacle Creek (n=20)	684.8	**514.3**	**514.3**	1864	**2300**	**2300**
Spring Fork incl. Bales Ditch and Barron Creek (n=28)	1025.0	**988.0**	**988.0**	17108	**12741**	**12741**
Spring Fork incl. Bales Ditch (n=23)	526.3	**553.5**	**553.5**	4733	**5258**	**5258**
Barron Creek (n=5)	21999.7	**14203.1**	**14203.1**	40166	**39952**	**39952**
Lower Big Darby Creek (Little Darby Creek to the Mouth) [05060001 220] (n=122)	340.6	**315.3**	**315.3**	1690	**1202**	**1202**
Lower Big Darby Creek RM 27.0-3.1 (mainstem) (n=30)	104.3	**116.6**	**116.6**	292	**221**	**221**
Smith Ditch and tribs. (n=10)	377.1	**352.1**	**352.1**	955	**851**	**851**
Hellbranch Run and tribs. incl. Springwater Run (n=54)	602.2	**514.0**	**514.0**	2200	**2606**	**2606**
Hellbranch Run and tribs. (n=49)	541.8	**506.3**	**506.3**	2038	**2457**	**2457**
Springwater Run (n=5)	1694.6	**382.3**	**382.3**	6534	**1565**	**1565**
Unnamed Trib. at RM 20.20 (n=5)	606.1	**548.1**	**548.1**	1739	**1477**	**1477**
Georges Run and Greenbrier Creek (n=13)	335.3	**280.6**	**280.6**	730	**679**	**679**

FC = Fecal Coliform bacterial standard found in the Ohio Water Quality Standards (WQS), (OAC 3745 -1)
EC = *E. coli* bacteria
a = The current *E. coli* primary contact recreation (PCR) standard found in the Ohio WQS
b = A target *E. coli* value under evaluation as a more appropriate concentration for streams designated PCR
n = # of observations
boldface type indicates non-attainment of the recreational use, or a value exceeding the target

APPENDIX L – FISH KILLS IN DARBY WATERSHED

Date	County	Waterbody (RM)	# Killed	Suspected Pollutant	Operation
03/31/01	Pickaway	UT Greenbrier Cr.(@RM 1.2)	196	fertilizer	agriculture
02/01/01	Logan	UT to BDC (@ RM 72.56)	15	petroleum	petroleum
07/17/00	Union	Big Darby Cr.(RM 66)	>24,000	fermenting grain	feed mill
05/25/94	Franklin	Big Darby Cr. (RM>38.9)	304	"Natural"or low D.O.	hypolimn. H_20 or WWTP
07/21/93	Union	Sugar Run (RM 3.5)	1,884	Fertilizer by-products	Agribusiness
07/06/92	Union	Sugar Run	102	Milk	Dairy Farming
08/04/91	Union	Buck Run	402	"Natural"	"Natural"
08/19/90	Union	Big Darby Cr.@ 64.32 via UT	518	Unknown	Unknown
08/31/90	Franklin	Hellbranch Run	33	Sewage	Sewerage system
07/18/88	Madison	Spring Fork nr. mouth	54	sewage, algae	Unknown
12/17/87	Champaign	Little Darby Cr.(RM 39.6)	36,767	Liquid fertilizer	Agribusiness
08/31/87	Franklin	Hellbranch Run	33	sewage	Unknown
05/11/86	Madison	Bales Ditch	1,913	Unknown	Unknown
05/02/86	Union	Little Darby Creek	3,360	Herbicides	Gen. Farming
04/21/85	Mad./Un.	Little Darby Creek	743	Unknown	Unknown
08/11/84	Madison	Bales Ditch	794	Unknown	Unknown
07/09/84	Madison	Spring Fork	30	Unknown	Unknown
09/05/83	Champaign	Little Darby Cr.(RM 39.6)	52,134	Ammonia	Agribusiness
03/05/83	Pickaway	Greenbrier Creek	22,161	28% nitrogen feet.	Agriculture
07/23/82	Champaign	Little Darby Creek	222	Liquid fertilizer	Agribusiness
04/18/82	Union	Trib. Sugar Run	1,847	Cow manure	Animal husbandry
05/29/79	Madison	Trib. L. Darby Creek	75	Liquid fertilizer	Agribusiness

Source: *Ohio EPA, 2004. From ODNR, Water Pollution, Fish Kill, & Stream Litter Investigations 1979 – 2002.*

APPENDIX M – LANDOWNER SURVEY

Surveys mailed and responses

A survey was sent out in the fall of 2002 to gather information about the properties along the Darby Creeks and their tributaries and to gather landowner concerns regarding their property. A total of 1,101 surveys were mailed out and 294 landowners, 27 percent, responded to the surveys. Nine of the surveys were returned due to wrong addresses.

Length of property along stream

The length of property along the streams ranged from less than fifty feet to twelve miles.

Location of property

The majority of responses, 186, showed ownership on only one side of the stream. A total of 95 landowners own property on both sides of the stream. Thirteen did not answer this question.

Width of vegetation

The width of vegetation along the stream banks ranged from less than ten feet to many acres of woods or pasture.

Type of vegetation

Of three different vegetation types along the streams, grass, trees and brush, 202 landowners reported having grass, 256 had trees and 201 had brush. Eighteen reported having something other than grass, trees, or brush.

Thirty-six landowners reported having only one type of vegetation along the stream. Ninety-three reported having a combination of two types of vegetation and 136 reported having a combination of three types of vegetation. Fifteen landowners reported having a combination of four types of vegetation. Fourteen did not answer this question.

TMDL familiarity

Most of the responders were not familiar with TMDL, Total Maximum Daily Load. Sixty-five landowners are familiar and 209 are not familiar with TMDL. Two are somewhat familiar with TMDL and thirteen did not answer this question.

DCWPG familiarity

A larger number of landowners are familiar with DCWPG than with TMDL. A total of 126 landowners are familiar with DCWPG. Slightly more people, 152, do not know what the

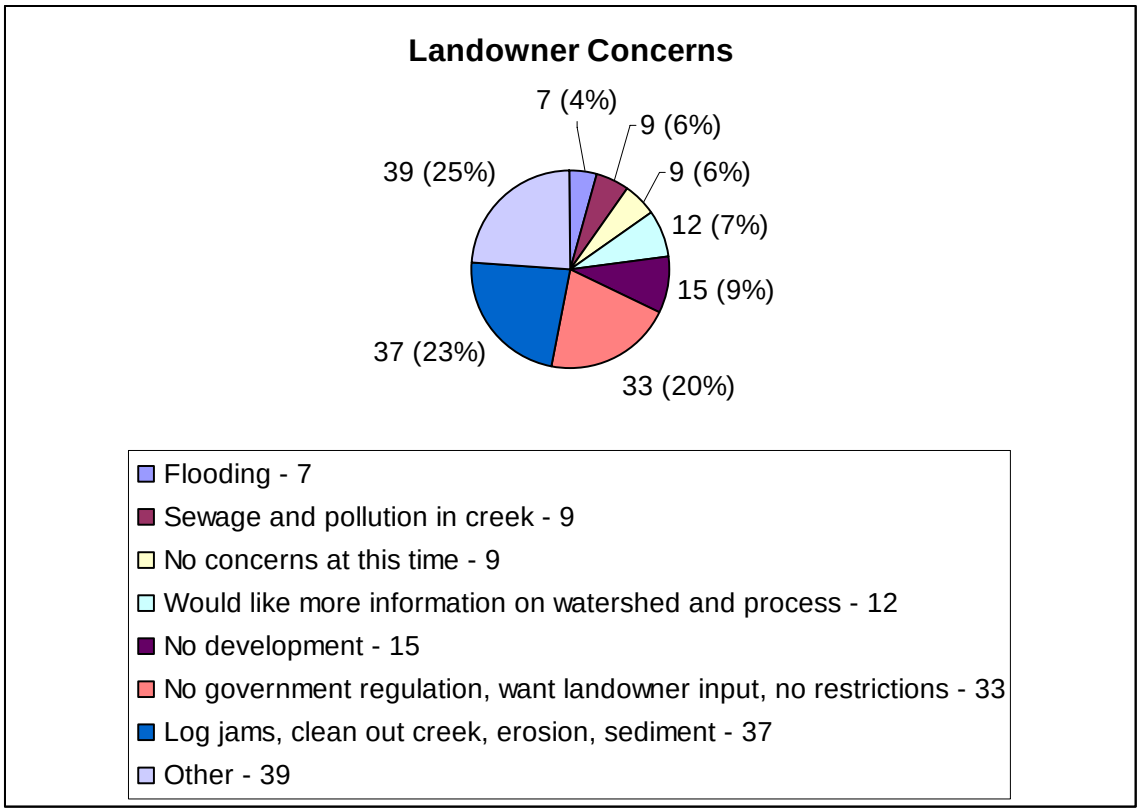
Darby Creek Watershed Planning Group (DCWPG) is. Three are somewhat familiar with DCWPG and thirteen did not answer this question.

Notify of meeting notices

The vast majority of responders, 236, want to be notified of future TMDL and DCWPG meetings. Fifty do not want to be notified and one may want to be notified of future meetings. Seven did not answer this question.

Concerns

A total of 161 concerns were listed by the landowners. The majority of concerns, 23 percent, were over log jams, trash in the creeks, erosion and sedimentation. The next highest concern, twenty percent, was over the level of government involvement, a lack of landowner input and restrictions. Nine percent would like to see no more development. Several landowners, seven percent, would like more information on the Darby Creek Watershed and the process of developing a plan. Six percent stated no concerns at this time and another six percent have concerns over sewage and pollution in the creek. Flooding is another concern landowners have.



APPENDIX N – NDPES PERMIT NARRATIVES

Excerpts from Ohio EPA TSD – Point Source Loadings Part B.1

B.1 Point Source Pollutant Loadings

There are 51 active permitted point source discharges in the Big Darby Creek watershed.

Many (48) of the facilities are small wastewater treatment plants (WWTPs) serving small cities, villages, schools, businesses, and mobile home parks, and discharging from 2,000 to 100,000 gallons per day (gpd), which are generically called "package plants." The term "package plant" is used to describe a wastewater treatment system consisting of a prefabricated steel or concrete tank that is divided into an aeration chamber and settling chamber. Most package plants are preceded by some type of pretreatment, which removes untreatable matter, including plastics, rags, rocks, wood, etc. Occasionally, flow equalization tanks are also included. The package treatment system is generally followed with effluent polishing and disinfection either by chlorination followed by dechlorination or ultraviolet light. Sometimes the plant will have a sludge holding tank.

The pretreatment devices in a package plant are generally one or two of the following: a trash trap, which is a tank that has an outlet opening that is smaller than the inlet and is in the lower 1/3 of the tank; a bar screen, which is a rack of bars in front of the package plant inlet usually spaced 1-2" apart; and/or a comminutor which grinds the trash into small pieces.

A flow equalization tank assists in providing the package plant with a steady flow, hopefully over an entire day since water use and subsequent wastewater generation varies within a day. A constant flow of sewage facilitates the effective breakdown of organic material in the sewage by providing the microbiological fauna providing the treatment a "steady state" of nutrients. Consistent flow yields improved effluent quality.

When working properly, the aeration chamber facilitates the breakdown of up to 90% of the organic material in the wastewater by injecting large volumes of air into the water. This provides the oxygen required to facilitate the aerobic breakdown of the wastes by the microfauna. Carbon-based oxygen demanding substances, as measured by cBOD testing, are broken down by the activity of bacteria and protozoans. If enough detention time is provided in the aeration tank, breakdown of nitrogenous wastes (i.e., ammonia) will also occur. As the waste is "eaten" by the different microfauna, the microfauna multiply.

The following chamber in the tank is the settling chamber, also termed a clarifier. Its function is to permit settling of the microfauna, also known as sludge, by gravity. Some of the settled organisms are then pumped back to the aeration chamber to resume consumption of the raw wastewater components. Clear water is decanted over the top of a barrier or weir and moves

onto the next stage of treatment, usually polishing and/or disinfection. If the system has been upgraded, a sludge holding tank will be present to store excess microfauna. When this tank fills, the "sludge" is dried or dewatered and taken to a land fill or directly removed to larger WWTP for digestion. Polishing treatment generally consists of sand filtration or a polishing pond. Both function to remove light weight "sludge" that did not settle in the clarifier. The treated wastewater then flows to a small disinfection tank. Disinfection, destruction of remaining microfauna in the wastewater, is generally achieved by chlorination by tablet or liquid bleach and followed at the outlet of the tank with dechlorination which is accomplished by tablets or liquid.. Occasionally, ultraviolet light will be used to provide disinfection; however, this is uncommon in package plants.

These "package plants" combine to account for approximately 4.5% of the wastewater flow, 9.4% of the $cBOD_5$ loading, 35.3% of the ammonia loading, and 6.8% of the suspended solids loading discharged to the Big Darby watershed. Many of these package plants are not properly maintained and operated, hence the disproportionate amounts of ammonia, $cBOD_5$, and suspended solids loadings documented as discharged from these facilities.

Flat Branch WWTP (RM 78.48)

The Flat Branch Wastewater Treatment Plant (WWTP) is located in Logan County along Township Road 157, in East Liberty, Ohio. Formerly known as Honda of America Transportation Research Area (TRC), the Flat Branch WWTP was constructed in 1979. The WWTP has not undergone any significant changes since construction.

Two separate divisions of Honda of America utilized the plant for treatment, Honda TRC and Honda of America Motorcycle Division Manufacturing Plant. The State of Ohio Department of Development assisted in the funding of the wastewater treatment plant as part of an economic development plan. The TRC Wastewater Treatment Plant was originally designed to provide sewers to Honda of America Motorcycle and later Honda's Automobile Division, as well as local industrial interests associated with the Honda manufacturing process. Marysville WWTP treats the industrial process wastewater from all manufacturing divisions of the Honda industrial complex while sanitary wastewater was diverted to TRC.

In 1996, the Logan County Board of Commissioners assumed ownership from the State of Ohio and thus oversight of TRC. The wastewater treatment plant name was officially changed to the Flat Branch WWTP and was promoted as a regional wastewater management facility for southeastern Logan County. The proposal was to increase capacity in order to serve the unincorporated communities of East Liberty and Middleburg as well as new residential housing subdivisions. Sewer extensions to these communities and subdivisions have not occurred and alternative treatment options and discharge locations are being investigated for these communities.

The Flat Branch WWTP currently receives sanitary wastewater from: TRC; one private residence; NEX and Midwest Express - both warehousing facilities for Honda; TNT Logistic North American Incorporated; and Harding Machine, a machine shop. In addition to sanitary wastewater, Harding Machine sends floor cleaning waste to the Flat Branch WWTP for treatment a few times a year.

The Flat Branch WWTP treatment process consists of a lift station, pre-aeration, comminutor bar screen, a flow equalization basin, extended aeration, clarification, rotating biological contactor (RBC), two fixed media clarifiers, rapid sand filter, chlorination and post aeration. The aeration tanks, clarifier and sludge holding tanks are enclosed in a fiberglass building reducing the potential for odor nuisance. The bypass channel around the RBCs was reported as being inoperable due to mechanical dysfunctions. The collection system contains to lift stations and is reported as having zero overflow structures; however, inflow and infiltration into the collection system have been problematic for the treatment plant. Flat Branch WWTP design flow rate is 0.1 MGD (100,000 GPD) with an average annual daily flow rate for the past three years of 0.062 MGD.

Ohio EPA has documented operational problems and numerous serious violations of the NPDES permit for the Flat Branch WWTP over the last 6 years. Poor plant operations were documented through an inspection performed in 1998, documenting that sludge wasting had not occurred at the wastewater facility in 15 years. In order to insure proper operation and treatment efficiency, a WWTP must remove or "waste" sludge (microfauna) periodically. This is done by removing settled sludge from the treatment train and sending it off for disposal. Continual "recycling" of the sludge without wasting leads to poor treatment of the wastes due to the excessive age of the microfauna and a buildup of sludge in the plant, allowing the possibility that sludge might escape from the plant during high flow events. Sludge loss from the Flat Branch WWTP to the Big Darby Creek may be inferred due to documented problems with I/I noted above and violations of total suspended solids concentrations and loadings in the effluent.

Percentile flows have remained fairly constant over time except during the period from 1999 through 2001 when it exceeded or approached the design flow. Monthly operating reports submitted by the Flat Branch WWTP indicate that the wastewater treatment plant has not met NPDES permitted effluent concentration and loading limits or sampling frequency requirements during much of the last 6 years. Violations for various parameters occur regularly over a monthly reporting period. Permit violations for the period of January 2000 through December 2003 have been documented for total residual chlorine (39%), fecal coliform bacteria (14%), pH (14%), total suspended solids (12%), ammonia (11%), and 5-day carbonaceous biochemical oxygen demand (2%). Many of these permit violations were significant and are causing degradation instream.

The volume and scope of NPDES permit violations noted for this facility indicate a lack of consistent and proper treatment of wastewater delivered to the Flat Branch WWTP that has negatively affected the biological communities downstream of the discharge point. Monitoring by the WWTP upstream and downstream of the discharge shows little change in chemical water quality. The frequency and quantity of instream monitoring should be closely examined to determine possible correlations with effluent violations (e.g., was instream monitoring completed on days where there were effluent violations of one kind or another). There is also the possibility that upstream point or nonpoint sources have increased loadings since the operations and treatment at the plant have not improved over time. Certainly, significant degradation to the biological communities in the upper Big Darby Creek exists downstream of the Flat Branch WWTP.

Honda Water Treatment and Surface Water Ditches

Honda East Liberty Auto Plant Water Treatment Plant - (formerly TRC)-001 and 002 (RM 4.80, Flat Branch via Unnamed Tributary)

The East Liberty Auto Plant Water Treatment Plant (ELPWTP) is located at 11000 SR 347, East Liberty, Ohio in Logan County. Raw water is drawn from five wells, at a daily production rate of 1.2 MGD, followed by clarification, filtration, and disinfection. Wastewater from treatment is discharged through two outfalls, 001 and 002.

The treatment processes used at the water treatment plant are clarification (via polymers and hydrated lime), re-carbonation, sand filtration, chlorination and lime sedimentation. Honda East Liberty WTP utilizes conventional water treatment processes to treat groundwater and yield potable water for both personal and industrial usage. Influent groundwater is mixed with polymer and lime to raise pH, precipitate metals, and enhance settling.

Due to the high quality of the groundwater, soda ash is not required in the treatment process. The chemical mixing and sludge settling is accomplished using an upflow clarifier system. The facility discharges lagoon overflow through two outfalls that discharge to a 1000' long unnamed tributary (swale) of Flat Branch. The final outfall (outfall 001) conveys supernatant from the southwest lime sludge lagoon. Outfall 002 carries overflow from the northeast lime sludge lagoon. The swale is then picked up by a ten acre storm water retention basin that also receives runoff from the buildings downspouts and parking lot. The storm water retention basin then discharges from a single location to Flat Branch. The average daily discharge flow in 2000 was 12,300 gpd.

The clarifier and other process tanks are generally drained and cleaned out once per year with the wash water discharging to the lime sludge settling lagoon. Dewatered lime sludge is disposed of in accordance with an approved Sludge Management Plan (SMP). Sludge that accumulates in

the settling lagoon is applied to agricultural land located on Honda property which is farmed under a cooperative agreement with Honda.

A total of 2,860 acres of Honda-owned agricultural land is available to receive lime sludge which is applied at a maximum rate of six dry tons per acre. Isolation distances, topography, seasonal variations, and flood plains are considered when siting for land application of the sludge in order to minimize the potential for runoff into nearby waterways.

On numerous occasions in 2001, Ohio EPA field personnel noted a chalky white appearance to the unnamed tributary prior to discharge into Flat Branch. The whitish plume was also apparent in Flat Branch and Big Darby Creek. The origin of the chalky plume appeared to be one of the lime settling lagoons. As indicated by the field report, this particular event was not judged to be related to a storm event. Flow conditions were not documented during this sampling event. Honda is investigating the causes and sources of the gray-white material and corrective measures that might be taken to eliminate this problem prior to water reaching Flat Branch. A preliminary report indicated a drainage problem. Honda has significantly increased the amount of impervious surfaces on their property; the impacts associated with the increased rate of storm water run-off may be an issue. A final report detailing corrective measures outlines additional water quality monitoring proposed in Flat Branch. Re-vegetation of stream and ditch banks, further conservation methods on agricultural fields owned by Honda, and improvements to storm water controls including construction of erosion control BMPs were some of the measures proposed to deal with this documented problem.

Limited conduit flow data for both outfall 001 and 002 demonstrated unpredictable and irregular flows for both outfalls likely linked to industry process peak demand, lagoon capacity and storm events.

Honda - Benton Road Water Treatment Plant (RM 2.21, Flat Branch via Unnamed Tributary)

The Honda-Benton Road Water Treatment Plant (WTP) is located in Union County on Benton Road, north of Pottersburg and east of Middleburg between SR 33 and SR 739. The first wastewater discharge permit Ohio EPA issued for the Honda-Benton Road WTP was in 1988. The Honda-Benton Road WTP permit was recently reissued in July 2000 with limits for pH between 6.5 and 11.0 S.U. and total suspended solids (TSS) at 30 mg/l for a 30-day average and 45 mg/l for the daily maximum value. The Honda-Benton Road WTP utilizes lime-soda softening, sand filtration, and chlorination to produce between 0.60 and 1.70 MGD of potable water.

Wastewater discharges through two outfalls, 001 and 002, to the unnamed tributary. Honda-Benton Road's average daily discharge flow during 2000 was 12,300 gpd. Raw water drawn for treatment is supplied by five primary wells and two backup wells. Flow seems to fluctuate

monthly according to Monthly Operating Reports (MORs) and is likely due to precipitation and evaporation rates and production demand rates.

Dewatered lime sludge is usually disposed of on site in accordance with an approved Sludge Management Plan (SMP). Isolation distances, topography, seasonal variations, and flood plains are considered when siting for land application of the sludge in order to minimize the potential for runoff into nearby waterways.

Limited data available for conduit flow demonstrates an increasing trend in quantity with fairly consistent percentile variance. Total suspended solids (TSS) trends demonstrated no discernable pattern from 1994 to 2001. This pattern is likely tied to production and inflow rates, as well as sampling timing and technique, all of which have the potential to suspend solids of various concentrations.

North Lewisburg WWTP (RM 1.50, Spain Creek)

The Village of North Lewisburg WWTP is located in Champaign County at 9984 SR 245 in North Lewisburg. The village began treating wastewater in the early 1970s in response to population growth and to address public health concerns associated with failing on-site systems. A lagoon wastewater treatment process was constructed in 1970 utilizing two 0.10 MGD stabilization lagoons with a grit chamber, an inflow/outflow structure, and a final outfall headwall. This type of treatment system was unable to consistently comply with its NPDES permit limits resulting in degradation of Spain Creek. The village's population is currently estimated at 1,800 with the population projected to grow to 2,000 within five to ten years.

In 1989, the Village of North Lewisburg was referred to the State of Ohio Attorney General's Office for failure to comply with the July 1, 1988 directive to meet secondary wastewater treatment criteria. North Lewisburg was required to construct a treatment facility to negate further degradation of Spain Creek and to conform to the secondary treatment technology mandate. By 1990, North Lewisburg administrators received a federal construction grant for an overhaul of the WWTP. The abandonment of the stabilization lagoon system occurred in 1991 when the village completed its installation of the Sequencing Batch Reactor (SBR) Treatment System.

The North Lewisburg WWTP currently has a design capacity of 0.170 MGD. Full capacity is expected to be reached by the year 2010. In addition, the Village of North Lewisburg has a current agreement with the Village of Woodstock to accept wastewater flow of approximately 0.0267 MGD. The current wastewater treatment process includes a sewage grinder, grit removal system, lift station, a three cell equalization tank, SBR, four rapid sand filters, chlorination system, tablet dechlorination system, and post aeration followed by a final effluent flow meter. Sludge is handled via aerobic digesters and a sludge holding tank. Power failures at the

treatment facility are handled by an emergency power generator which can provide power for the entire plant.

The collection system is a gravity flow system of approximately 29,000 linear feet of 8" to 12" diameter pipe. The entire sanitary collection system consists of separate sewers, with all of the village sewered. Inflow and infiltration are problematic in the collection system.

In 1996, an Ohio EPA inspection report of the North Lewisburg Treatment Plant and their effluent quality described the wastewater as dark green in color and noted the depletion of the supply of chlorine used for disinfection. During most of 1995 and a portion of 1996, Monthly Operating Reports (MORs) were not submitted to Ohio EPA, a violation of their discharge permit. Additional permit violations for North Lewisburg continued throughout the 1990s.

An inspection by Ohio EPA personnel in June of 2001 revealed solids and sludge on the streambed of Spain Creek, downstream from the final outfall (001). In addition, a significant quantity of foam was also documented downstream from the WWTP. Records indicate the Village of North Lewisburg has completed a Sludge Management Plan (SMP) and received approval in 2001 for land application on nearby cropland.

The village is also currently working with an environmental consultant on a plan to provide for treatment plant upgrades brought about by the inflow and infiltration problems, necessary repairs and general housekeeping practices. The wastewater treatment plant has been re-rated for a Class II Operator, requiring the present operator to pursue a Class II Operator Certification while North Lewisburg's consultant oversees operations of the wastewater plant.

Wastewater treatment improved prior to the expansion completed in 1991 for most wastewater constituents with the exception of ammonia-N, which remained variable throughout the years evaluated. Loads of $cBOD_5$ and TSS notably decreased after the 1989 referral to the Ohio Attorney General's Office. Prior to the requirement to meet secondary standards, peak flows, as represented by the 95th percentile, consistently exceeded design flow of 0.10 MGD.

Monitoring stations upstream and downstream of the WWTP outfall yielded similar ammonia values. Insufficient reporting of data for fecal coliform prevented an accurate evaluation of any differences over the same period.

Records indicate a total of 235 NPDES permit violations for the North Lewisburg WWTP from February 1999 through December of 2001. Permit limit violations decreased annually from 112 violations in 1999 to 52 violations in 2001. Most of the violations occurred in May and July of the respective years, suggesting seasonal influences. The most frequent parameters reported in violation listed in decreasing order of frequency were ammonia-N, TSS and $cBOD_5$.

The Village of North Lewisburg WWTP contributes approximately 1.6% of the total point source flow to the Darby watershed. The village also adds 20.2% of the $cBOD_5$ loading and 24.5% of the ammonia loading to the watershed. Loadings of suspended solids were negligible.

Reflections Subdivision (RM 8.00, Buck Run via Unnamed Tributary)
The Reflections Subdivision operates a wastewater treatment system which treats wastewater via a wetland. Wastewater is pumped to the wetland from submerged piping underneath the wetland. Once treatment is completed, wastewater is conveyed to two ponds, overflow from which intermittently discharges to an unnamed tributary to Buck Run. This system consistently meets NPDES permit limits. Inspections have revealed that adequate maintenance is provided.

Darby Creek Golf Course (RM 64.00, Big Darby Creek)
The Darby Creek Golf Course operates a 7,580 gpd capacity package WWTP. The WWTP consistently meets its permit limits. Inspections revealed marginal operation and maintenance practices.

Fairbanks School (RM 63.74, Big Darby Creek)
Fairbanks School operates an unpermitted, 15,000 gpd capacity package WWTP which operates year-round. The school houses the Union County Board of Education offices. Ohio EPA has received an NPDES permit application for this facility. The plant appears to be operated properly.

Ranco Corporation (RM 54.00, Big Darby Creek)
Ranco Corporation operates a 39,000 gpd design combined non-contact cooling water and package WWTP. Inspections revealed good operation and maintenance practices.

Discharge data shows a decrease in flow and loadings of pollutants to Big Darby Creek. This is primarily due to reduced levels of production at the company. Whole effluent toxicity testing in November 2001 and March 2002 confirmed acute toxicity of the effluent to the invertebrate *Ceriodaphnia dubia* at an LC50 of 44.1% (Ohio EPA Bioassay Report 02-2600-C), consistent with reports in 1992 and 1997. Toxicity was not apparent in the mixing zone.

St. Johns Evangelical Lutheran Church (RM 8.04, Robinson Run via Unnamed Tributary)
St. Johns Church operates a 3,500 gpd package WWTP that consistently meets NPDES permit limits. Inspections have revealed marginal operation and maintenance practices at this facility.

Darby Meadows (RM 0.42, Robinson Run via ditch)
Darby Meadows subdivision operates a 10,000 gpd capacity package WWTP which consistently meets NPDES permit limits. Inspections reveal marginal operation and maintenance practices.

Effluent chemistry suggests stable operation of the plant, although disinfection may be insufficient at times.

Tuffco Sand and Gravel (RM 52.40, Big Darby Creek)
This quarrying operation produces an intermittent overflow to the creek from solids settling ponds. Flow data shows a regular discharge of approximately 2.1 MGD. The system consistently meets NPDES permit limits. Inspections have revealed that maintenance is provided for this treatment system. This facility is one of the two largest contributors of wastewater flow to the Big Darby watershed. Tuffco Sand and Gravel contributes 18.4% of the flow and 15% of the loading of suspended solids to the watershed from known point sources.

Plain City WWTP (RM 52.05, Big Darby Creek)
The Village of Plain City owns and operates a 0.50 MGD capacity WWTP. The treatment train consists of two "race track" oxidation ditches, two clarifiers, a chlorine contact tank and post aeration. This facility has consistently met its NPDES permit limits for the last 5 years. However, numerous complaints had documented that the total suspended solids limits in the permit allowed for the degradation of Big Darby Creek downstream of the outfall due to the deposition of excess biosolids on the streambed. This violated Ohio WQS (OAC 3745-1-04) that apply to all surface waters in that they be "free from suspended solids or other substances that enter the waters as a result of human activity and that will settle to form putrescent or otherwise objectionable sludge deposits, or that will adversely affect aquatic life."

Therefore, the NPDES permit was modified to reduce suspended solids reaching the creek. The mayor and village council of Plain City have since adjudicated this NPDES permit modification and the issue has gone to legal proceedings for resolution. In the meantime, the village Utilities Director and WWTP Superintendent have been investigating the addition of another oxidation ditch and rapid sand filtration to meet the new permit limits. Inspections revealed good operation and maintenance practices at this facility.

Historical loadings data from the WWTP show highly variable values for TSS and $cBOD_5$ when comparing median to 95^{th} percentile values. Loadings for these parameters, however, are trending lower. Instream monitoring up and downstream of the outfall by the Village shows little impact from the WWTP for dissolved oxygen, $cBOD_5$, fecal coliform, or ammonia. Analysis for TSS was not part of the instream monitoring requirements until the 2002 permit renewal, so no comparisons can be made for this parameter.

The Village of Plain City WWTP contributes only 1.5% of the total wastewater flow to the Darby watershed. However, this plant adds over 5.3% of the $cBOD_5$, 20.8% of the ammonia, and over 5.3% of the suspended solids loadings to the watershed from known point sources.

Suburbans Mobile Home Park (RM 49.80, Big Darby Creek)
The Suburbans Mobile Home Park operates a 44,000 gpd package WWTP that complies with its NPDES permit limits about half the time. This is primarily due to excessive inflow and infiltration (I/I) causing loss of biosolids to the stream during rain events. Inspections have revealed good operation and maintenance practices at this WWTP. An I/I reduction program is in place and has helped reduce solids loss. The facility may also pursue flow equalization.

Dutch Kitchen (Ballenger-Jones Ditch via Unnamed Tributary at RM 0.70)
The Dutch Kitchen restaurant operates an 8,000 gpd capacity package WWTP that is usually in compliance with its NPDES permit. Inspection reports revealed marginal operation and maintenance practices.

Jonathan Alder High School (RM 2.55, Ballenger-Jones Ditch)
This school operates a 5000 gallon per day package wastewater treatment plant that is overloaded and no longer appears to operate. Inspections reveal a history of marginal operation and maintenance. A NPDES permit was issued September 18, 2003, and a new plant will be constructed to handle the Canaan Elementary School flow and the high school flows in the summer of 2004.

COJV School District, aka Tolles Technical School (RM 2.68, Powell Ditch)
This vocational education school operates a 20,000 gpd capacity package WWTP that consistently meets its permit limits. The majority of the inspections revealed adequate operation and maintenance. The discharge is continuous as the school is operated year-round.

Canaan Elementary (RM 2.25, Yutzy Ditch)
This school operates an unpermitted 3,000 gpd capacity package WWTP. The sampling performed to complete the NPDES permit application indicates that the WWTP does not provide adequate treatment. The WWTP fails to perform even secondary treatment. Inspection of the plant indicated that maintenance provided was inadequate with respect to replacing worn and faulty equipment. No discharge occurs during the summer months of June to September when school is out of session. This school flow will be redirected to the high school's new wastewater plant in the summer of 2004.

Wisslohican Sanitary Sewer District (RM 45.00, Big Darby Creek)
This sewer district operates a 4,400 gpd package WWTP that consistently meets its permit limits. Recent inspections have revealed good operation and maintenance practices at the WWTP. Monitoring of sites immediately up and downstream of the outfall reveal little to no impact on Big Darby Creek.

Canaan Community Mobile Home Park (RM 1.40, Fitzgerald Ditch)
This mobile home park operates a 35,000 gpd capacity package WWTP that is in compliance with its NPDES permit the majority of the time. Inspections revealed that the WWTP will require replacement within 5 years due to deteriorating tankage and piping.

Olen Corporation (Big Darby Creek RM 43.60)
This sand and gravel quarrying operation was a batch discharger, discharging only at night from settling ponds. The discharge was limited to surface water run-off, recycled process-generated wastewater and non-process generated wastewater. Calculated flows indicated discharges from 0 gallons to 100,000 gallons per day. Olen ceased operations in 2003, eliminating the point source discharge. They have sold their property to the Franklin County Metro Park system to be incorporated into the Prairie Oaks Metropark.

Battelle Memorial Institute (RM 40.55, Big Darby Creek)
This facility operates a 20,000 gpd capacity package WWTP that has a continuous discharge of treated sewage (outfall 001) along with an intermittent discharge of up to 13,000 gpd of non-contact cooling water (outfalls 002 and 003). This facility consistently complies with its NPDES permit requirements and limits. Inspection reports indicated good operation and maintenance practices. The intermittent cooling water discharge is located within 200 feet of the continuous WWTP discharge point on the Big Darby Creek. Median flow from the 001 discharge has averaged between 20,000 and 30,000 gpd over the last 5 years of record. Median loadings of ammonia, suspended solids, and $cBOD_5$ have shown slight decreases over the same time period. Median discharge from the 002 and 003 outfalls are approximately 2000 gpd and 5000 gpd, respectively.

Lake Darby Estates WWTP (RM 40.00, Big Darby Creek)
American Water, Inc. operates a 500,000 gpd (0.50 MGD) WWTP for this subdivision. The plant consists of extended aeration tanks (rectangular tanks), rectangular clarifiers, a chlorine contact tank, and rapid sand filters. This WWTP consistently meets its permit limits in spite of the fact that significant inflow and infiltration plague the collection system during wet weather. Inspections revealed good operation and maintenance practices. Median loadings of suspended solids and ammonia have been low over the last 10 years. Fecal coliform concentrations also showed some variability within that time frame, including some elevated values indicating some problems with inflow/infiltration and/or disinfection. Comparisons of instream conditions both up and downstream of the WWTP show no significant differences. Lake Darby Estates WWTP contributes just over 2.4% of the known point source wastewater flow to the Darby watershed. Loadings of $cBOD_5$, ammonia, and suspended solids are just over 5%, less than 1%, and 1.4%, respectively, of known point sources.

Greentree Mobile Home Park (RM 39.00, Big Darby Creek via ditch)
The Greentree Mobile Home Park operates a 16,000 gpd design package WWTP that consistently meets its NPDES permit limits. Inspections revealed marginal operation and maintenance practices.

Darby Dan Farms LLP (RM 36.70, Big Darby Creek)
Darby Dan Farms operates a 4,000 gpd capacity package WWTP which consistently violates its NPDES permit limits. The violations are caused by under-loading of the WWTP. Currently, the WWTP is undergoing modification to enable treatment of lower flows. Inspections revealed marginal operation and maintenance practices.

Mechanicsburg WWTP (RM 39.20, Little Darby Creek)
The Mechanicsburg WWTP is located in Champaign County at 18 N. Main Street in Mechanicsburg, Ohio. The facility was built in 1936, when wastewater treatment consisted solely of sand filters and chlorination, at a design flow of 0.16 MGD. Subsequent upgrades in 1971 and 1984 included the addition of aerated retention in treatment lagoons. A new Sequential Batch Reactor (SBR) treatment plant was constructed in 1990. The transition to a new treatment plant in 1990 included maintaining the original lagoon system for flow equalization during periods of peak flow. Land application of biosolids occurs at approved fields along State Route 4, approximately 0.3 mile east of the village. In 1980 the population served by the collection system was approximately 1,800. The service population is projected to be 2,780 by 2005.

The existing treatment train consists of a bar rack, comminutor with bar screen, SBR, chlorination and dechlorination with a SBR design capacity of 0.23 MGD and a hydraulic capacity of 0.72 MGD. Two lift stations are located at the intersection of Western Avenue and Railroad Street. The Railroad Street location was the original wastewater facility and the old bypass structure is currently sealed and inoperable. A private lift station serves the Tri County Jail. An additional connection of a two-inch force main was recently approved by Ohio EPA which will bring a church online in late 2002 adding an additional 300 gpd of sanitary sewage. Standby power is provided by portable generators for the treatment plant; however, incompatibility of the electrical connections at the lift stations leaves this area of the treatment system vulnerable to bypassing. A recent federal grant, matched by the Ohio Public Works Commission (OPWC), will provide funding for the Village of Mechanicsburg toward the construction of a new water storage tower. This tower will provide drinking water storage for the village and will be equipped with a generator providing backup power to the tower and to the wastewater lift stations in the event of a electrical power outage.

The 66 year old collection system consists of clay pipe with mortar joints. The collection system is totally separate from the storm water collection system with ninety-percent (90%) of the service area currently sewered. A USEPA grant in 1980 provided for an inflow and infiltration (I/I) evaluation of the collection system and treatment works. The investigation determined that

the collection system was failing and there was inefficient solids removal at the wastewater treatment facility. Basement flooding and facility related bypassing historically occurred during storm events of 1.5 to 2 inches of rain. Consultants hired by the village recommended a Sewer System Evaluation Survey to identify specific locations of I/I problem areas. Based on those results, a 1982 Facility Planning Survey (FPS) recommended a complete sewer system rehabilitation along with the construction of additional oxidation ditches and the utilization of the existing lagoons for storm flow equalization. In 1988, a Consent Agreement was reached with Ohio EPA in response to numerous violations of the discharge limitations and monitoring requirements of the Mechanicsburg discharge permit. The village agreed to eliminate discharges from overflows and bypasses from the sanitary sewer and to complete construction of the improvements to its WWTP by 1990. Indications are that bypass events continue to occur at manholes, influent pump stations, and at the treatment plant itself.

In 1994, the Village of Mechanicsburg filed for the Emergency Village Capital Improvement Special Account (EVCISA) for construction of the diversion station at the inlet works of the treatment plant whereby storm flow would be diverted to the lagoon at an estimated design of 0.23 mgd. In November of 1995 the village connected the equalization lagoons from the original plant to aid in equalizing flow in the influent chamber.

In July of 1998, Ohio EPA field personnel reported fish community impacts in Little Darby Creek downstream from the WWTPs discharge point. An Ohio EPA inspection in September of 2001 noted active discharge of raw sewage into Little Darby Creek at the Railroad Street lift station bypass. There is a limited amount of data on raw bypass quantities for this site; however, volumes of 450,000 gallons discharging to the Little Darby in July of 1992 and 100,000 gallons in June of 1995 are documented. Subsequent bypasses were reported in July of 1998 and October of 2000; however, these bypass events were not monitored so the total activity and associated quantities are unknown. This bypass location was permanently sealed on December 6, 2001. Field inspection sheets and observations by Ohio EPA water quality personnel also indicated a chronic loss of solids from the treatment plant as observed in the WWTP effluent and in Little Darby Creek downstream of the WWTP discharge pipe.

Annual peak flows consistently exceeded the design flow of 0.16 and 0.23 MGD throughout the period of record (since the 1970s) with peak flows approaching hydraulic design. Median percentile flows exceeded the original design of 0.16 MGD for the period of record and approached the increased design flow for the remainder of the record. This is indicative of the I/I problems that have plagued the collection system for many years. Loading percentile variance abruptly ended in 2001 when the majority of NPDES violations were reported, suggesting violations were correlated to operational controls as well as I/I influence.

Flow equalization completed in 1990 resulted in significant treatment improvements. Wastewater constituents (ammonia, suspended solids, $cBOD_5$) all declined notably following the inclusion of flow equalization, reacting inversely to flow behavior which graphically support

reported events of frequent bypassing and substantial I/I problems. A steadily increasing trend in median discharge rate with the absence of new sewer extensions, substantiates the existence and impact of the archaic collection system.

Upstream and downstream (801 and 901) monitoring of the final outfall (001) is conducted by the city and reported quarterly to Ohio EPA. The upstream monitoring station (801) is located at the State Route 29 bridge north of Rosedale Road. The downstream monitoring station (901) is located at the Wing Road bridge. A pipe structure located under the bridge at Wing Road is described by the city as a storm sewer and is not configured to receive any effluent or influent for bypassing purposes.

Monitoring at stations 801 and 901 demonstrated that downstream concentrations of ammonia-N were commensurate with upstream values throughout the period of record. Fecal coliform values upstream clearly exceeded downstream concentrations from 1981-1987. Thereafter, approximately ten years of data for upstream concentrations was unreported.

Fecal coliform violations accounted for nearly half of all NPDES violations documented from 1999 to 2002 with the majority of violations occurring in 2001. Between August of 1999 and January of 2002, a minimum of 47 NPDES permit violations were reported to Ohio EPA. All reported violations were typical constituents of treated domestic wastewater. The violations, in declining order of frequency, were: fecal coliform, TSS, pH, $cBOD_5$, ammonia-N and dissolved oxygen (D.O).

The Village of Mechanicsburg contributes approximately 1.4% of the total point source wastewater flow to the Darby watershed. Loadings of $cBOD_5$ and ammonia are 8.6% and 1.2% of the total respectively. Suspended solids comprised a negligible loading to the creek compared with other point sources.

Village of West Jefferson WWTP (RM 5.35, Little Darby Creek)

The Village of West Jefferson operates a 1.20 MGD WWTP which consists of two "race track" oxidation ditches followed by inter-channel clarifiers, a chlorine contact tank, and post aeration. Inspections of the WWTP revealed good operation and maintenance practices. However, the collection system for this facility is plagued by excessive inflow and infiltration causing excessive solids loss from the WWTP to the creek and loadings violations in the WWTP effluent during precipitation events. Historical flow data confirms the problems with I/I in the collection system. The Village has been informed by Ohio EPA that construction of an equalization basin and a preliminary treatment system designed to handle the I/I problem, will be required as part of any permit-to-install applications submitted by the Village of West Jefferson. The Village initiated a NPDES permit renewal that contained a 12 month compliance schedule to construct an equalization basin and additional clarifiers to eliminate the solids loss due to their I/I problems. By September of 2004, West Jefferson will have completed construction. The Village of West Jefferson WWTP contributes just over 4% of the known point source wastewater

flow to the Darby watershed along with over 21% of the $cBOD_5$, 11.8% of the suspended solids, and less than 1% of the ammonia loadings.

Triad Local School (RM ~ 7.00 Proctor Run [upstream of Brush Lake])
This WWTP is a typical package plant with a design capacity of 10,000 gpd. The discharge is to Proctor Run upstream of Brush Lake in the vicinity of RM 7.00. Brush Lake is located 6.6 river miles upstream of the Proctor Run confluence with Treacle Creek.

Monroe Elementary School (Spring Fork, unpermitted discharge)
The Jonathan Alder School District operates a 5000 gallon per day package wastewater treatment plant that is overloaded and inspections reveal that it does not appear to operate. Inspections reveal a history of marginal operation and maintenance. A NPDES permit was issued September 18, 2003, and a PTI was approved for the new plant. The wastewater treatment plant began operating in November 2003.

Green Meadows Mobile Home Park (RM 0.20, Spring Fork)
The Green Meadows Mobile Home Park operates an 81,000 gpd capacity package WWTP that meets its permit limits about half of the time. Inspections revealed marginal operation and maintenance practices. Effluent chemistry data indicated that there are 95^{th} percentile loadings values of up to 2 kg/day of both $cBOD_5$ and TSS and fecal coliform median concentrations of nearly 1000 per 100 ml. These loadings are atypical of a facility this size and may be causing degradation to the stream. Ohio EPA personnel were not granted access to the stream by surrounding streamside landowners, so biological water quality data could not be obtained and the impact from this plant could not be evaluated.

Fisher Cast Steel (RM 14.00, Little Darby Creek via ditch)
Fisher Cast Steel operates a 1000 gpd intermittent discharge of non-contact cooling water. Recent inspections revealed good maintenance.

Jefferson Lodge Mobile Home Park (RM 9.00, Little Darby Creek)
This mobile home park operates a 40,000 gpd package WWTP that consistently meets NPDES permit limits. Inspections revealed marginal operation and maintenance practices.

Oakwood Acres Mobile Home Park (RM 8.00, Little Darby Creek via Unnamed Tributary)
This mobile home park owns a 10, 000 gpd capacity package WWTP that consistently violates its NPDES permit. Inspections have revealed problems with operation and maintenance practices with portions of the WWTP structure falling into the tributary. Ohio EPA is negotiating with the Village of West Jefferson to connect the MHP to its collection system following upgrades to the West Jefferson WWTP to allow for the abandonment of the malfunctioning Oakwood Acres WWTP.

B&B Motel (RM 7.00, Ditch to Little Darby Creek)
This motel operates a package WWTP (2,200 gpd design) that consistently violates its NPDES permit requirements and limits. Half of the inspections performed at this facility have revealed poor operation and maintenance practices. The discharge point is to an ephemeral ditch along U.S. Route 40 which flows into Little Darby Creek.

Oak Hills Mobile Home Park (RM 29.29, Big Darby Creek)
This mobile home park owns a 69,000 gpd capacity package WWTP that consistently violates its NPDES permit. Inspections revealed poor operation and maintenance practices as well as a severe inflow and infiltration problems. This WWTP receives as much as 5 times the design capacity during a precipitation event. Compliance sampling performed during dry conditions in August 2002 revealed that the plant was meeting NPDES permit limits for effluent quality. Ohio EPA plans to modify this NPDES permit by 2005 to require the abandonment of this WWTP and connection of the repaired collection system to the new Darbydale WWTP.

Darbydale Elementary (RM 29.00, Storm sewer discharge to Big Darby Creek)
The Darbydale Elementary School manages a 7,500 gpd capacity package WWTP that operates only while school is in session (9 months out of the year). The WWTP meets its NPDES permit limits about 2/3 of the time it is in operation. Inspections reveal good operation and maintenance practices. The NPDES permit will be modified by the year 2005 to require the school to abandon the WWTP and connect to the new Darbydale WWTP.

Pleasant Acres Mobile Home Park (Big Darby Creek via Unnamed Tributary at RM 1.00)
This mobile home park operates a 39,000 gpd design package WWTP that complies with NPDES permit limits the majority of the time. Inspections have revealed marginal operation and maintenance practices. Compliance sampling performed during dry conditions in August 2002 revealed that the plant was meeting NPDES permit limits for effluent quality. The NPDES permit will be modified by 2005 to require abandonment of this facility and connection of the collection system to the new Darbydale WWTP.

Community Gardens Mobile Home Park (RM 1.00, Unnamed Tributary to Big Darby Creek)
This mobile home park operates a 30,000 gpd capacity package WWTP that regularly discharges approximately half this amount. Inspections revealed virtually no attention given to proper operation and maintenance, causing regular non-compliance with its NPDES permit. Compliance sampling performed during dry conditions in August 2002 revealed that the plant was meeting NPDES permit limits for effluent quality. This entity will be connected to the proposed Darbydale WWTP by the year 2005. The new Darbydale plant will be built on the site of this WWTP and will discharge at the confluence of the unnamed tributaries which currently carry effluent from the Community Gardens MHP and the Pleasant Acres MHP.

Alton Campground Mobile Home Park (RM 0.50, Hamilton Ditch)
This campground operates a package WWTP (3,200 gpd design). This entity is typically in compliance with NPDES permit requirements and limits. Inspections have revealed proper operation and maintenance practices. The discharge flows to an ephemeral ditch along U.S. Route 40 that flows into Hamilton Ditch near the mouth.

Thornapple Country Club (RM 2.65, Clover Groff Ditch)
The Thornapple Country Club operates a 2,000 gpd capacity package WWTP that consistently meets NPDES permit limits. Inspections have revealed good operation and maintenance practices at this facility.

Cypress Wesleyan School (RM 1.30, Clover Groff Ditch)
Cypress Wesleyan School operates a 2,000 gpd capacity package WWTP. The WWTP often discharges approximately double this flow. Inspections indicated that virtually no maintenance is performed on the plant. The NPDES permit contains a compliance schedule which requires the school to connect to the City of Columbus sanitary sewer within 12 months and to abandon its WWTP.

Oakhurst Knolls (RM 5.80, Hellbranch Run)
Franklin County operates the 10,000 gpd capacity Oakhurst Knolls WWTP. The treatment train consists of an equalization tank split to an oxidation (orbal) ditch, two clarifiers, a rapid sand filter and a chlorine contact tank. The plant meets permit limits consistently during dry weather. Heavy precipitation (e.g., greater than 1 inch of rain) produces severe inflow and infiltration problems within the collection system. The WWTP can receive as much as 4 times the designed plant capacity during a precipitation event, causing a disruption to proper treatment. Flow and loadings information does not reveal much in the way of trends other than to confirm inspection results. Inspections have revealed good operation and maintenance practices at the WWTP.

Comparisons of up and downstream monitoring stations in Hellbranch Run reveal discharge of additional loadings of bacteria and ammonia to the stream from the WWTP. Instream dissolved oxygen concentrations seem unaffected by the discharge.

Pleasantview School (RM 1.14, Hellbranch Run)
This school operates a 20,000 gpd capacity package WWTP plant that complies with NPDES permit limits most of the time. This facility only discharges while school is in session, generally about 9 months out of the year. Inspections revealed marginal operation and maintenance practices. Loadings from this outfall are not significant.

Timberlake Subdivision (RM 0.50, Hellbranch Run)
Lakeland Utilities operates the Timberlake subdivision 50,000 gpd package WWTP. This WWTP violates NPDES permit limits during rain events due to inflow and infiltration problems in the collection system. At times, large "blankets" of biosolids were evident in Hellbranch Run downstream of the outfall during stream sampling events by Ohio EPA. Inspections have revealed a number of problems, including inadequate maintenance funds and faulty and broken equipment. Due to the long history and severity of the violations, the Director of Ohio EPA issued orders to force Timberlake Subdivision to abandon the WWTP and connect to the Darbydale WWTP via force main by 2005.

Dot-Mar Mobile Home Park (RM 23.77, Big Darby Creek via ditch)
The Dot-Mar Mobile Home Park operates a 4,000 gpd capacity package WWTP. The WWTP is typically out of compliance with assigned NPDES permit requirements and limits. Inspections show a history of operations and maintenance problems. The NPDES permit for this entity will be modified by to require abandonment of the WWTP and connection to the force main supplying ODRC-Pickaway Correctional Institute WWTP.

ODRC - Pickaway County Correctional Institute (RM 22.92, Big Darby Creek)
The State of Ohio operates this 2.34 MGD capacity WWTP (expanded from 1.40 MGD in 2003). The treatment train consists of two "race track" oxidation ditches (extended aeration), two final clarifiers, and a chlorine contact tank. The expansion will allow this WWTP to become a regional facility eventually servicing the unsewered Village of Derby and forcing the abandonment of the following facilities: Clark's Lake Subdivision WWTP, Foxlair MHP WWTP, Vantage Point MHP WWTP, and Dot-Mar MHP WWTP following their connection to the expanded WWTP. This WWTP has future plans for expansion capped at 3.0 MGD due to antidegradation issues. Recent inspections revealed good operation and maintenance practices.

Beginning in 1988, ODRC-PCI WWTP began operating at or above its designed flow with regularity. In the last 10 years, loadings of $cBOD_5$, and TSS peaked in 1998 and have declined since. NPDES permit limits for total suspended solids were typically violated during precipitation events (e.g., more than 2 inches of rain). Ammonia removal has also become more reliable and less variable. Directors Final Findings and Orders were issued in March 2000, resulting in upgraded facilities which include a new sludge management plan and a contractor to haul the sludge, the addition of a new clarifier with a distribution splitter box, new aerators in the two oxidation ditches, a new flow meter and process improvements suggested by Ohio EPA. Upstream and downstream monitoring in Big Darby Creek indicated little recent impact to the stream from the WWTP. Previous instances of solids losses and poor treatment at this facility appear to have dissipated during the recent sampling. Whole effluent toxicity testing at the WWTP in October 2001 and May 2002 revealed no acute toxicity.

ODRC-PCI WWTP contributes 10.8% of the total, known point source wastewater flow to Big Darby Creek. Loadings of other pollutants are as follows: suspended solids 40.7%, $cBOD_5$ 14.1%, and 18.1% of the ammonia. With planned expansion of this facility and the elimination of several package plants and diversion of their sewage to PCI, loadings from the plant are expected to increase, but overall loadings to the watershed should decrease due to the elimination of package WWTPs with performance problems.

Foxlair Farms Mobile Home Park (RM 22.50, Big Darby Creek via ditch)
Foxlair Farms Mobile Home Park operates a 50,000 gpd design package WWTP that meets its NPDES permit limits about half of the time. Inspections indicated that marginal operation and maintenance has been performed. Compliance sampling performed during dry conditions in August 2002 revealed that the plant was not meeting NPDES permit limits for $CBOD_5$, ammonia, and suspended solids. The NPDES permit for this facility has been modified to require abandonment of this WWTP with connection of the collection system to the Pickaway County Board of Commissioners force main which supplies the ODRC Pickaway Correctional Institute WWTP.

Clark's Lake Subdivision (Big Darby Creek via Unnamed Tributary at RM 1.54 [aka Clarks Lake Tributary])
This subdivision operates a 100,000 gpd capacity, three lagoon, wastewater treatment system that consistently violates its NPDES permit limits. All of the inspections revealed poor operation and maintenance as well as excessive inflow and infiltration from the collection system. The sewage from this subdivision will be pumped to an expanded Ohio Department of Rehabilitation and Corrections (ODRC) Pickaway Correctional Institute wastewater treatment plant and the existing lagoons will be abandoned. Currently, this WWTP contributes just 0.9% of the known point source wastewater flow, under 1% of the ammonia loadings, over 16% of the $cBOD_5$, and 19.1% of the suspended solids loadings to the watershed.