



State of Ohio  
Environmental Protection Agency

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## Water Quality Management Plan

### Scioto River Basin and Blacklick Creek -

A partial update covering Franklin County  
and portions of Delaware, Fairfield, Licking, Pickaway and Union Counties

Final

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prepared by

Division of Surface Water

Division of Environmental and Financial Assistance



**Water Quality Management Plan  
Scioto River Basin and Blacklick Creek**

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# 1 Executive Summary

The initial Water Quality Management Plan for the Scioto River basin was completed in 1979. Updates have occurred since 1979 when the State Water Quality Management Plan was certified. The last time the plan for the Scioto River basin was updated was in 1993.

This partial update covers the Columbus Metropolitan area, the most populated area of the Scioto basin. Special attention is given to the water quality of Blacklick Creek and the necessary plan elements to protect water quality in that watershed. Within this geographic area the plan content is being updated with respect to the following plan elements: 1) designated management agencies; 2) identification of municipal and industrial waste treatment needs; 3) nonpoint source, urban storm water; 4) implementation measures to carry out the plan; and 5) effluent limits.

Designated Management Agencies (DMAs) are the entities responsible for carrying out specific roles relative to the plan elements. Eight governmental jurisdictions and one private utility are named as DMAs responsible for providing wastewater collection and treatment in the Columbus metropolitan area. The facility planning work conducted by the City of Columbus was reviewed in setting the overall Facility Planning Area boundary. The identification of treatment needs and service areas for each wastewater treatment provider was based on the information provided by each respective entity, with some modifications. This update to the Scioto River basin plan includes a set of options and a protocol to revise the plan. These options provide a means for a community or entity to “opt out” of the service area as provided in this plan, or to “lock-in” its service area, thereby ensuring that it will remain the wastewater service provider.

The threats to water quality posed by storm water in rapidly developing watersheds are discussed in some detail. Future attainment of the designated aquatic life uses in these watersheds is dependent upon immediate, focused attention to the problems created by construction site runoff, post construction impacts of impervious surfaces and stream habitat alterations. These issues will be addressed through special requirements and conditions placed in phase II storm water permits issued by Ohio EPA.

Future updates of the Scioto River basin plan may include a wider geographic coverage and should identify additional areas that are at a higher risk of degradation from storm water impacts and are in need of specialized attention. Lastly, Total Maximum Daily Load (TMDL) studies are underway in several Scioto River basin watersheds. The results of these TMDLs will be added to the Water Quality Management Plan when they are completed.

## 2 Introduction

A water quality management plan (WQM Plan) contains a variety of planning products required by the Clean Water Act (CWA). A WQM Plan includes Areawide Waste Treatment Management Plans required by Section 208 of the CWA.

In the 1970s Ohio EPA delegated the task of preparing and updating Areawide Waste Treatment Management Plans to six regional councils of government (see Appendix 1, Fig.1). However, for Central Ohio and all of the Scioto River Basin no delegation of authority occurred. Thus, Ohio EPA is responsible for the Areawide Waste Treatment Management Plans and other CWA Section 303 planning requirements.

Pursuant to these responsibilities the Ohio EPA has prepared this updated WQM Plan entitled *Water Quality Management Plan Scioto River Basin and Blacklick Creek*. The geographic area covered is limited to Franklin County and portions of Delaware, Fairfield, Licking, Pickaway and Union counties. The plan will be referred to hereafter as the Central Scioto Water Quality Management Plan Update (CSPU).

Based on early stakeholder feedback, Ohio EPA revised the content of *Draft Blacklick Creek Urban Waste Treatment Management Plan* (Ohio EPA, 2001) to add certain WQM Plan updates that are applicable to the greater Columbus metropolitan area. Ohio EPA determined that the same planning procedures, procedural requirements and determinations should apply to the entire Columbus metropolitan area. In this way, inconsistencies between the eastern and western portions of the Columbus metropolitan area could be avoided. The CSPU addresses the requirements of a consent decree between Ohio EPA and the City of Reynoldsburg entered into on February 11, 1996, in U.S. District Court, Southern District of Ohio, Eastern Division. In the consent decree (Appendix 2), Ohio EPA committed to completing an update for the Blacklick Creek watershed and to certify the update to U.S. EPA, Region V by December 29, 2001. Although the schedule has not been met, Ohio EPA has worked diligently to allow for public review and comment and to produce a plan update that balances the concerns of all local governments.

Input from the various wastewater treatment providers, elected officials and the public was obtained and considered in drafting the plan update (see Section 2.03). A draft of this plan was released and subject to comment earlier this year. See Appendix 3 for the information on the comment period and public hearing. The final CSPU was revised based on comments and a separate responsiveness summary document was prepared.

### 2.01 Existing Plan

The existing WQM Plan for the Scioto River Basin consists of the *Initial water quality Management Plan - Scioto River Basin* (Ohio EPA, 1979) and numerous updates that occurred when the State Water Quality Management Plan was updated and certified in 1984, 1986, 1989 and 1993. Updates involved the addition of documents to the State

Water Quality Management Plan through reference. Appendix 4 provides a partial list of documents that apply to the Columbus metropolitan area.

## **2.02 Deletion of Outdated Plan Materials**

Updating the content of any WQM Plan should focus on the identification, prioritization and remedies for water quality problems and threats to water quality. Previous plan updates added various documents and descriptive materials but never removed the older documents and material as the information became outdated. In preparing the CSPU Ohio EPA reviewed the content of the existing plan and has decided to eliminate some of the older documents because they are outdated. The deletions from the plan are noted in Appendix 4. Note that three governmental jurisdictions (Westerville, Groveport and Lithopolis) have been removed as Designated Management Agencies (DMAs) because Columbus and Canal Winchester have taken over sewer and wastewater treatment responsibilities in these communities. In addition, Delaware and Licking counties do not have DMA roles within the Columbus FPA.

## **2.03 Process Used in Updating the Plan**

Early consultation with the public and governmental jurisdiction occurred through two separate processes, one for the update of the Columbus Metropolitan Facility Plan update and a second for the plan content for the Blacklick Creek watershed. In 2000 the City of Columbus undertook an update of its wastewater facility plans with support of Ohio EPA and the mutual expectation that the output of the facility planning work would be used in the update of the 208 plan. Using a draft planning document completed in June 2000, officials from the City of Columbus undertook an extensive outreach campaign to educate and solicit comments from the public, elected officials and the other wastewater treatment operators in the region. The public participation work, the comments received and the responses to comments are documented in the Columbus Metropolitan Facilities Plan Update (November 3, 2000).

Planning for the Blacklick Creek portion of the plan update was initiated by Ohio EPA in March 2000, with preparation of a plan of study. The planning process included formation of a working group of municipalities within the watershed and a separate public advisory group of interested citizens and local citizen groups.

The working group assisted Ohio EPA in collecting information to be used in development of the plan update and acted as a sounding board for drafts of the plan update. The public advisory group was to review outputs from the working group and provide the working group with comments, including the general direction of the plan update.

An initial meeting was held with the working group on May 15, 2000 at the City of Reynoldsburg auditorium and a second meeting on September 7, 2000 at the Blacklick Creek Metropark. The initial meeting was used to introduce the planning process and to form the basis for holding the second meeting. The second meeting was used to have the working group compile information for the plan. A Public Advisory Group meeting was held

May 22, 2000 at the Blacklick Creek Metropark to gain input and comments on the process. A list of stakeholders can be found in Appendix 5.

Letters requesting input on specific issues were sent to governmental organizations in the fall of 2000. Most entities responded by March 2001. A draft plan update was produced by the Ohio EPA and it was released with a public notice in December 2001. During the public comment period Ohio EPA determined that significant changes were in order before conducting a public hearing. Thus, a draft concept paper was developed to describe the main issues and the anticipated changes to the document. The concept paper was shared with those who commented or expressed an interest and placed on the Agency's web page and numerous meetings were held to exchange ideas.

Based upon a number of factors Ohio EPA merged the 208 plan update work developed specifically for the Blacklick Creek watershed with the overall facility planning work that was undertaken by the City of Columbus for the entire metropolitan area. The draft CSPU document was completed and made available for comment in late March 2002. The Ohio EPA held a public hearing on July 8, 2002 and accepted written comments through July 19, 2002 on the plan content.

### 3 Description of the Area and Water Quality Assessment

This section contains general descriptions of land use, population trends and water quality within the Columbus Metropolitan Facility Planning Area. Summarized information on water quality in the major rivers and smaller streams is presented in Section 3.02 based upon data reported in the last published Section 305(b) report (Ohio EPA, 2000). See Appendix 6 for the applicable 305b report material. Other available water quality reports are listed in the reference section. The water quality conditions of Blacklick Creek are described in greater detail in Section 3.04.

#### 3.01 General Description of Facility Planning Area

The Columbus Metropolitan Facility Planning Area is depicted in Appendix 1, Fig. 2. The area is comprised of all of Franklin County, portions of Fairfield County in Violet, Bloom and Greenfield townships, portions of Licking County in Etna, Jersey and Monroe townships, portions of Delaware County in Harlem, Orange, Concord and Genoa townships and portions of Union County in Jerome Township. All the villages, municipalities and unincorporated areas within this boundary are included.

Columbus has experienced a substantial growth in population and land area since 1950 (Table 1). The most rapidly growing areas are near the outer boundary of the FPA (see Appendix 1, Fig. 3). Surrounding communities have experienced similar growth in population in the last decade. As a result of this growth in population the land use cover in Franklin County has undergone substantial change. Almost 50,000 acres of farmland in Franklin County has been converted to urban land cover between 1982 and 1997 (Table 2).

Table 1. Columbus square mileage and population, 1950 - 2000.  
(Source City of Columbus, Planning Division)

<b>Year</b>	<b>Approximate Square Mileage</b>	<b>Total Population</b>
1950	42	375,901
1960	93	471,316
1970	146	540,025
1980	186	564,871
1990	201	632,910
2000	220	711,470

Table 2. County land cover change in Franklin County, Ohio, 1982 to 1997. (Source National Resource Inventory, as reported by the Exurban Exchange Project, OSU Extension)

Land Cover	1982 to 1987		1987 to 1992		1992 to 1997		1982 to 1997	
	Absolute Change*	Percent Change						
Urban Land	12	6.8%	11.5	6.1%	25.6	12.8%	49.1	27.9%
Forest Land	0.8	4.5%	0.3	1.6%	-3.2	-16.9%	-2.1	-11.8%
Total Farmland**	-12.2	-9.3%	-13.3	-11.2%	-24	-22.8%	-49.5	-37.9%
Crop Land	-10.4	-8.9%	-12.4	-11.6%	-27.6	-29.3%	-50.4	-43.1%
Pasture Land	-1.8	-13.0%	-0.9	-7.5%	3.6	32.4%	0.9	6.5%
*Absolute Change measured in thousands of acres								
**Total Farm Land equals sum of all crop land and all pasture land								

Topography in the Columbus FPA is generally flat to rolling without significant relief. The boundaries of the FPA have been determined in part based upon the extent to which gravity flow sewers can serve the area. Several major waterways all flow from north to south offering a significant recreational resource. A master plan for Greenway development has been produced (MORPC, 1997).

### **3.02 Summary of Water Quality Conditions**

Current water quality conditions found in the four largest streams in Franklin County are generally good to excellent (see Table 3). Very marked improvement in the condition of the Scioto River has been well documented in past Ohio EPA reports (Ohio EPA 1996). This was attributed to upgraded wastewater treatment at both Columbus facilities. Based on the most recent data available, 16 percent of the evaluated stream miles on these four larger waterways were rated fair or poor, indicating an unacceptable level of water quality. Combined sewer overflows and urban and storm water runoff still impact segments of the Scioto River, Olentangy River and Alum Creek (Ohio EPA 1999, Ohio EPA 2000). Habitat alterations caused by low head dams are another factor that affects water quality and the biological communities living in these waters. The following is a summary from the most recent study of the Olentangy River (Ohio EPA 2001).

“The Olentangy River had generally good water quality, except for a few minor violations of water quality standards for bacteria and pesticides. Low concentrations of pesticides were detected in every sample obtained from the Olentangy River mainstem. Mean dissolved oxygen concentrations were above 6 mg/l and nutrient concentrations, though often elevated, did not seem to impact the free-flowing portions of the river. Upstream from the Columbus metropolitan area, both fish and macroinvertebrate communities were in good to exceptional condition. Among the fish species collected were two classified as endangered, threatened, or special status - river redhorse and bluebreast darter.

“The lower four miles of the Olentangy River demonstrated the combined effects of CSOs/SSOs, urban runoff and habitat modifications associated with an urbanized watershed. Use designations have been applied that account for the modified habitats resulting from the lowhead dams in the area. Nevertheless, the macroinvertebrates in both the Modified Warmwater Habitat (MWH) and Warmwater Habitat (WWH) areas were significantly impacted in this reach. Sampling results documented increasingly more tolerant communities in a downstream direction. In addition to the poorly performing macroinvertebrate communities, contaminated sediments were also documented in the dam pools. The fish assemblages in the dam pools met the MWH use and were apparently not affected by the accumulation of material in the pooled areas. As a result, much of this area was considered to be in partial attainment of the designated aquatic life uses.

“Contaminated sediments in the mainstem and sampled tributaries were concentrated within the urban areas of Columbus. Mainstem sites in the Columbus urban area within the last two miles of the mouth were moderately to severely

contaminated with metals and organic compounds. Of the significant tributary streams, Delaware Run, Rush Run and Adena Brook showed the highest degree of metals and/or organic contamination. Less severe levels of contamination were noted in the other urban tributaries sampled.” (Ohio EPA 2001)

In contrast to the larger rivers and streams, the water quality of smaller waterways in the older, heavily urbanized areas of Franklin County is seriously degraded. Only four of 24 direct tributaries to the Scioto River, Olentangy River and Alum Creek received water quality ratings of good or marginally good (Ohio EPA 2000). Over 80 percent of these small urban waterways were rated as fair, poor or very poor (see Table 4). The water quality problems appear to come from a variety of sources including sewer system overflows, industrial and urban runoff and habitat issues such as siltation and intermittent flow. The top causes of water quality impairment in Franklin County are siltation, organic enrichment/dissolved oxygen, habitat alterations (other than flow alterations), nutrients, flow alterations and pathogens. These pollution problems cause the most severe impacts over the most stream mileage in Franklin County streams. The residential, commercial and industrial land use development that has occurred in Franklin County over the past 50 plus years has created a legacy of polluted streams that will need substantial investments to clean up and some impacts are likely irreversible.

Table 5 presents the water quality ratings for streams and smaller waterways in the less urbanized areas of Franklin County and portions of Pickaway and Fairfield counties. Current water quality in these waterways is much better with approximately 70% rated as excellent, very good or good. Localized water quality problems are most severe in western Franklin County (Hellbranch Run watershed) and in Mason Run located in east Columbus/Whitehall. The very poor conditions of Mason Run are attributable to urban runoff and the fact that long reaches of the stream have been placed in culverts. The tributaries of Hellbranch Run have been ditched for agricultural drainage. More recently, residential development in the Hellbranch Run watershed and the resulting poor habitat, siltation and flooding has become a concern. Negative water quality impacts caused by land use changes from rural to residential and commercial developments are evident in the Rocky Fork and its tributaries and other small streams.

Table 3. General water quality conditions reported for the four largest waterways in Franklin County, Ohio. Big Darby Creek and smaller waterways are included in Tables 4 and 5. (Source: Ohio EPA 2000; Ohio EPA 2001 for Olentangy River)

Waterway	Condition	Miles Rated	Description of Segment	River miles (RM)	Comments
Scioto River	Good	4	downstream of Oshaughnessy Dam	148 - 145	
	Good	1	Griggs Reservoir to Olentangy River	145 - 132	
	Excellent	12			
	Good	8	Olentangy River to near I-270 south	132 - 124	Jackson Pike WWTP at RM
	Excellent	7	near I-270 south to Big Walnut Creek	124 - 117	Southerly WWTP at RM
	Excellent	11	Big Walnut Creek to Walnut Creek	117 - 106	segment is in Pickaway County
Olentangy River	Very Good	8	Just north of Franklin Co. line to mouth	15 - 0	Delaware Co. Olentangy WWTP at RM 13.4; impoundment in lower reach
	Good	1			
	Fair	6			
Big Walnut Creek	Good	5	Three Rivers Park to mouth	15 - 0	
	Good	12	Rocky Fork (Gahanna) to mouth	28 - 15	
	Fair	1			
Alum Creek	Good	7	Alum Creek Dam to Schrock Rd.	27 - 20	
	Fair	8	Schrock Rd. to mouth	20 - 0	
	Poor	1			
	Good	10			
Miles (percent) rated Excellent - 30 (29%) Miles (percent) rated Fair - 15 (15%) Miles (percent) rated Very Good - 8 (8%) Miles (percent) rated Poor - 1 (1%) Miles (percent) rated Good - 48 (47%)					

Table 4. General water quality conditions of small waterways in the more urbanized areas of Franklin County. (Source Ohio EPA 2000)

Waterway	Condition	Miles Rated	Nearby Community, landmark	Comments *
<b>Scioto River tributaries</b>				
Republican Run	Good	4	Grove City, Stringtown Rd.	
Plum Run	Marginally Good	1	Grove City, SR 104 & London-Groveport Rd.	threatened by land use changes
Scioto Big Run	Poor	3	southwest Columbus	siltation and habitat problems; development
	Marginally Good	2		
Marsh Run	Fair	5	Grove City, near I-270	CSO elimination has improved condition
Brown Run	Poor	6	Grove City, near I-71	commercial and residential land use impacts
Trabue Run	Poor	5	west Columbus, Trabue Rd.	large railyard, spills and fish kills in past
Cramer Ditch	Very Poor	3		raw wastewater enters stream from sewer system
Dry Run	Poor	2	Valley View / west Columbus	industrial runoff and package plant impacts
Slate Run	Very Poor	2	Upper Arlington, Henderson Rd	unknown cause and source
Hayden Run	Poor	1	west Columbus / Hilliard	point sources
N. Fork Indian Run	Poor	1	Dublin, I-270	commercial and residential land use; development
S. Fork Indian Run	Fair	3	Dublin, Post Rd.	high silt load; agricultural land use and channelization; development
<b>Olentangy River Tributaries</b> (updated conditions reported in Ohio EPA 2001)				
unnamed @ RM 7.8	Poor (Fair)	3 (1)	north Columbus	urban runoff (chemical water quality) and flow impact

Waterway	Condition	Miles Rated	Nearby Community, landmark	Comments *
Kempton Run	Poor (Poor)	3 (1)	Linworth, Don Scott airport	urban runoff (chemical water quality) and flow impact
Linworth Run	Fair (Poor)	3 (2)	Linworth	urban runoff (chemical water quality) and flow impact
Turkey Run	Poor (Poor)	4 (2)	Upper Arlington, OSU golf course	urban runoff (chemical water quality) and flow impact
Adena Brook	Poor (Poor)	2 (2)	Clintonville, Whetstone Park	industrial discharge has caused fish kills; suspected SSO, CSO, urban runoff
Rush Run	Poor (Fair)	2 (2)	Riverlea / Worthington	raw wastewater enters stream from sewer system
<b>Alum Creek Tributaries</b>				
Spring Run	Fair	3	Westerville, Inniswoods Gardens	high silt load and channelization from commercial and residential development; urban runoff
	Poor	4		
unnamed @ RM 14.1	Poor	1	northeast Columbus, Innis Park	urban runoff (chemical water quality) and flow impact
Meacham Run	Marginally Good	2		threatened by land use changes
Noble Run (Spring Hollow)	Good	2		threatened by land use changes
Miles (percent) rated Good - 6 (9%)		Miles (percent) rated Poor - 37 (55%)		
Miles (percent) rated Marginally Good - 5 (7.5%)		Miles (percent) rated Very Poor - 5 (7.5%)		
Miles (percent) rated Fair - 14 (21%)				

\* Some comments derived from file records of problematic construction site practices.

Table 5. General water quality conditions of streams and smaller waterways in the less urbanized areas of Franklin County and surrounding counties. (Source Ohio EPA 2000, file records)

Waterway	Condition	Miles Rated	Nearby Community, landmark	Comments *
<b>Big Walnut Creek Tributaries</b>				
unnamed @ RM 12.7	Fair	3	Obetz	habitat issues
unnamed @ RM 27.3	Poor	1	Columbus Airport	airport runoff; habitat, siltation issues
Mason Run	Very Poor	4	east Columbus / Whitehall; mouth is near Eastland Mall	channelization, ~ 1.5 miles in culvert; urban runoff and other unknown causes
	Fair	2		
Rocky Fork	Excellent	1	northeast Columbus / Gahanna / New Albany / Jefferson & Plain Twps.	siltation a major impact in lower segment; impacts from past and ongoing development
	Good	3		
	Fair	10		
Rose Run	Fair	1		siltation caused by development
Sugar Run	Good	6	New Albany	siltation caused by development
Sycamore Run	Marginally Good	1	Gahanna, SR 62	siltation caused by development
<b>Blacklick Creek and Tributaries</b>				
Blacklick Creek	Good	17	east Columbus / Reynoldsburg / New Albany	point source impacts have lessened; threatened by development
	Fair	10		impacts from intermittent flow, livestock wastes
Dysar Run	Good	5	east Columbus / Reynoldsburg	threatened by development
tributary to Dysar	Good	2	east Columbus / Reynoldsburg	threatened by development
unnamed @ RM 6.5	Marginally Good	1	east Columbus / Brice	threatened by development
unnamed @ RM 10.4	Good	1	Summerfield / Violet Township	
unnamed @ RM 11.3	Good	1	Violet Township, SR 204	threatened by development

<b>Waterway</b>	<b>Condition</b>	<b>Miles Rated</b>	<b>Nearby Community, landmark</b>	<b>Comments *</b>
unnamed @ RM 12.9	Good	1	Reynoldsburg, Livingston Ave	threatened by development
French Run	Marginally Good	1	Reynoldsburg, Main Street	threatened by development
North Branch French Run	Excellent	4	Reynoldsburg	threatened by development
Swisher Creek	Good	1	Jefferson Township	threatened by development
<b>Walnut Creek and tributaries</b>				
Walnut Creek	Good	24	Canal Winchester	portions in Pickaway and Fairfield counties
Manns Run	Fair	2	Groveport, Rickenbacker Airport	mobile home park package plant
unnamed @ RM 15.5	Poor	1	Groveport, Rickenbacker Airport	
unnamed @ RM 15.6	Good	1	Groveport, Rickenbacker Airport	
Mud Run	Good	4	Lithopolis, SR 674	rural agricultural watershed
Big Run	Good	4	Lithopolis, SR 674	rural agricultural watershed
Georges Creek	Good	2	southeast Columbus / Pickerington	channelization and threats from land use changes
	Fair	7		
tributary to Georges Creek	Good	4	southeast Columbus / Pickerington	threatened by land use changes
	Fair	5		
Tussing Ditch	Good	1	Canal Winchester	

Waterway	Condition	Miles Rated	Nearby Community, landmark	Comments *
Sycamore Creek	Good	13	Pickerington	located in Fairfield County; Pickerington WWTP and smaller plants; threatened by land use changes
	Fair	1		
Gillete Run	Good	7	Carroll, SR 33	improved condition after WWTP upgrade
<b>Big Darby Creek and tributaries</b>				
Big Darby Creek	Excellent	6		threatened by suburban development
	Excellent / Good	7 / 4		threats from poorly run package plants, nutrients, unsewered areas
	Excellent	8		
	Excellent	13		mostly in Pickaway County; threatened by land use changes
Hellbranch Run	Very Good	4		threatened by development in headwaters
	Good	4		threatened by development in headwaters
	Fair	5		impacted by development
Clover Groff Ditch	Poor	9		past channel modification; land use changes
Hamilton Ditch	Fair / Poor	1 / 2		past channel modification; land use changes
Miles (percent) rated Excellent - 39 (18%) Miles (percent) rated Fair - 47 (22%) Miles (percent) rated Very Good - 4 (2%) Miles (percent) rated Poor - 13 (6%) Miles (percent) rated Good - 105 (49%) Miles (percent) rated Very Poor - 4 (2%) Miles (percent) rated Marginally Good - 3 (1%)				

\* Some comments derived from file records of problematic construction site practices.

### **3.03 Blacklick Creek - Watershed Description**

Blacklick Creek flows from its headwaters in western Licking, southern Delaware and northeast Franklin counties in a southerly direction, past the Village of Blacklick and through the City of Reynoldsburg before turning southwest and joining Big Walnut Creek at the Alum Creek confluence in southeast Franklin County. Blacklick Creek is approximately 31 miles long and drains an area of 61.3 square miles. The Blacklick Creek basin is comprised mainly of small headwater streams flowing into the mainstem. Blacklick Creek is located in the Eastern Corn Belt Plains (ECBP) ecoregion of Ohio. The gently rolling glacial till plain comprising the ECBP ecoregion is broken by moraines, kames and outwash plains. Local relief is generally less than 50 feet. Soils derived from glacial till materials contain substantial amounts of clay and soil drainage is often poor. Many of the smaller streams in the ECBP ecoregion have been channelized to assist soil drainage.

Within the drainage basin, Franklin County Metroparks has a number of holdings, including Blacklick Woods and Three Creeks metroparks. There are eight golf courses in the watershed, which include Winding Hollow Country Club, The Golf Club, Jefferson Golf and Country Club, New Albany Links, Blacklick Woods Golf Course, Turnberry Golf Course, Walnut Hill Golf Course and New Albany Country Club.

A mixture of rural residential lots (1-5 acres) and suburban housing development is the predominant and increasing land use in the study area. Agricultural land uses are present in the headwaters, but represent a relatively small portion of the total land use in the watershed. The main population centers in the watershed area are the cities of Columbus, Gahanna, Groveport, New Albany, Pataskala, Pickerington and Reynoldsburg. A map showing the watershed boundary and corporation limits is in Appendix 1 Fig. 4. Existing and historical populations of communities and census defined places located partially or entirely in the watershed can be found in Table 6.

Table 6. Total population of incorporated areas\* in the Blacklick Creek watershed.

Entity	Population		
	2000	1990	1980
Blacklick Estates	9,518	n.a.	n.a.
Village of Brice	70	109	93
Village of New Albany	3,711	1,621	409
City of Columbus	711,470	632,910	565,021
City of Gahanna	32,636	27,791	18,001
City of Groveport	3,865	2,948	3,286
City of Pataskala	10,249	3,046	2,284
City of Pickerington	9,792	5,668	3,917
City of Reynoldsburg	32,069	25,748	20,661

\*based upon 2000 and earlier Census figures. Population shown is entire population for incorporated area, not all of which is in the watershed.

As can be seen from the comparison of census counts, there has been an increase in population on the part of municipalities located in the watershed. Significant development is on-going in the county areas, particularly within Franklin and Fairfield. In excess of 1,000 acres is currently under residential construction, with associated commercial construction underway. Construction site erosion and streambank modification are the predominant types of nonpoint source (NPS) pollution in the study area. Other types of NPS pollution known or suspected include agriculture, on-site wastewater treatment and urban runoff.

Table 7 shows an approximate representation of the number of acres each entity in the watershed covers (incorporated and unincorporated).

Table 7. Land area in Blacklick Creek watershed by governmental entity.

Entity	Acreage	% of Watershed
City of Columbus	6,664	17
Jefferson Twp. (Franklin Co.)	6,367	16.2
City of Reynoldsburg	6,313	16.1
Jersey Twp. (Licking Co.)	4,608	11.7
City of Pataskala	3,566	9.1
Plain Twp. (Franklin Co.)	2,723	6.9
Etna Twp. (Licking Co.)	2,499	6.4
Madison Twp. (Franklin Co.)	2,179	5.5
Violet Twp. (Fairfield Co.)	1,445	3.7
Village of Groveport	1,434	3.7
Village of New Albany	962	2.5
City of Pickerington	406	1.0
Truro Twp. (Franklin Co.)	358	0.9
City of Gahanna	337	0.8
Monroe Twp. (Licking Co.)	203	0.5
Harlem Twp. (Delaware Co.)	100	0.3
Village of Brice	52	0.1

### 3.04 Blacklick Creek - Water Quality

Ohio EPA has employed biological, chemical and physical monitoring and assessment techniques (biosurvey) to determine: 1) the extent to which “use designations” assigned by the Ohio Water Quality Standards (WQS) are either attained or not attained; 2) if use designations assigned to a given water body are appropriate and attainable; and 3) if any changes in key ambient biological, chemical, or physical indicators have taken place over time, particularly before and after the implementation of point source pollution controls or storm water best management practices.

This biosurvey work was done on twenty-three miles of Blacklick Creek and its larger tributaries in 1996 and a Technical Support Document (TSD) was written in 1998 (Ohio EPA 1998). The survey included a total of 29 biological, chemical/physical and sediment stations, encompassing the mainstem from the headwaters (River Mile (RM) 23.0) to near the mouth (RM 1.4). Previous biosurveys of Blacklick Creek were conducted by Ohio EPA

in 1991, 1989, 1987 and 1986. Each of these efforts evaluated a portion, but not all, of the mainstem. The stream reach between RM 20.4 (Havens Road) and RM 16.5 (SR 16) was previously designated Exceptional Warmwater Habitat (EWH). The remaining segments (upper and lower) are designated Warmwater Habitat (WWH). The complete TSD is available on-line at our web site (see reference section). Aquatic life use attainment status for existing and recommended use designations in the 1996 TSD are presented in Appendix 7. Appendix 8 contains the current water quality standard use designations that became effective on March 29, 2001. These use designations were derived from the TSD.

A graphical evaluation of ambient biological performance in Blacklick Creek is presented in Appendix 1, Fig. 5.

The results from the 1996 biosurvey found 14.7 miles (64.8%) of Blacklick Creek in full attainment of existing aquatic life uses. Partial attainment was indicated for 3.6 miles (15.9%), while non-attainment was observed for the remaining 4.4 miles (19.3%). Impairment (partial and non-attainment) was limited to two river segments. The first extended from the WWH designated headwaters (RM 22.7), through the EWH reach, to Hill Road (RM 15.5). The second included the lower 1.8 miles. Within the headwaters (RM 22.4/22.7) both the fish and benthic macroinvertebrate communities performed at a fair level. As documented in a previous investigation (Ohio EPA 1992 unpublished), intermittent stream flow was again observed within the upper reaches of Blacklick Creek in 1996. This, coupled with failed on-site septic systems and a significant manure release further upstream, were the principal associated sources of aquatic life use impairment within this area. Apparently, livestock wastes were improperly applied to adjacent agricultural fields within the extreme headwaters of Blacklick Creek (Ohio Department of Natural Resources (DNR) 1996). Following an extended period of rainfall in mid-August, manure laden runoff was delivered to Blacklick Creek near RM 27.0<sup>1</sup>. Despite the lack of perennial flow and the stressors identified above, ambient water quality within the upper limits of the formal study area (RM 23.0) was generally good. At this station, dissolved oxygen (DO), nutrients, ammonia-N, solids and fecal bacteria were all found at acceptable levels. Only biochemical oxygen demand (BOD) was elevated. However, in response to citizen complaints regarding the manure release, additional water chemistry samples were collected further upstream near RM 27.0. Results from this effort indicated low DO, elevated nutrients and fecal bacteria contamination in the immediate area of the spill. Progressing downstream, into the EWH designated reach, community performance was markedly improved as stream discharge became continuous. However, all four sampling stations contained within this segment failed to support exceptional biological assemblages. Despite this, most stations did fully support WWH communities. The TSD recommended re-designation of the EWH segments of Blacklick Creek to WWH, based on their apparently natural inability to consistently support EWH.

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<sup>1</sup> Episodes of manure discharge from the Hendren Farms on Beech Road have continued and Ohio EPA is pursuing the issuance of an NPDES permit. See additional discussion in Section 6.

After meeting with the working group as a part of the plan update, Ohio EPA determined that more information about the existing point sources, stream bank conditions of the entire mainstem and a more current biosurvey was needed to develop an areawide waste treatment management plan. In June 2000, Ohio EPA performed another biosurvey and re-evaluated the wastewater treatment systems. In addition, Ohio EPA through a consulting firm obtained the Global Positioning System (GPS) locations of: 1) all discharge pipes, 2) tributaries, 3) obstructions and 4) stream bank conditions along the mainstem (see Appendix 9).

Ohio EPA sampled 13 Blacklick Creek mainstem and several tributary sites for biological attainment in 2000. As shown on the map, non-attainment of WWH biocriteria occurred in the upper mainstem of Blacklick Creek and Powell Ditch. The assessment of non-attainment was for all WWH biocriteria at Walnut Street (RM 27.1), SR 161 (RM 24.6) and upstream from Morse Road (RM 27.4 and 23.0). Biological index scores attained were in nonsignificant departure of all biocriteria at all nonmixing zone sites sampled between Havens Road (RM 20.4) and Hamilton Road (RM 2.6). Dysar Run, French Creek and North Branch French Creek appeared to have met WWH biocriteria, with Powell Ditch meeting only partial attainment of WWH biocriteria.

A comparison of the biocriteria scores obtained in 2000 with those of 1996, indicate that even with re-designation to WWH, the upper mainstem was still in non-attainment. Identified causes for non-attainment in this reach appear to be intermittent flow, redirection of storm water due to new housing developments, home aeration system discharge from old housing developments and manure laden farm field run-off from farms in the area. When farm field runoff is noted during surveys and inspections, Ohio EPA coordinates closely with Soil and Water Conservation District staff who provide technical assistance to farmers to ensure proper application occurs in the future.

The rest of the Blacklick Creek mainstem appeared to have slightly higher biological index scores than the previous survey in 1996. These results are tentative and based on preliminary examination of biological scores. A more detailed analysis of water quality in Big Walnut Creek is anticipated as part of the upcoming Total Maximum Daily Load (TMDL) report for this watershed.

The 1998 TSD did find that since 1986 significant improvements had occurred in the Blacklick Creek mainstem, mainly attributable to wastewater treatment plant upgrades that had taken place since 1986. It also found that Blacklick Creek is likely near the assimilative capacity needed to maintain the WWH use. Biological indicators (fish and macroinvertebrates) were frequently at, or just below, the minimum WWH thresholds (IBI, MIwb and ICI). These results suggest that additional stress would likely expand, significantly, the areas of modest impairment (partial and non-attainment) documented in 1996.

The 1998 TSD notes that an additional threat to the integrity of Blacklick Creek includes suburban development pressures. It noted that as measured by the frequency of General Storm Water Permits (GSP), development had increased substantially over the last four

years. These activities were most pronounced in the portion of the watershed contained in Franklin County. Within this area the issuance of GSPs had risen from an average of 2.5/year, prior to 1994, to 12.5/year in 1998. The deleterious effects of this intensive land use were noted to include: construction site runoff (primarily sediment), modification of the flow regime (increased runoff rates), riparian encroachment or removal and, at times, direct channel modification. The impacts to flow regime seen are two-fold: lower dry weather flows combined with higher wet weather flows. Collectively, these factors have been found to negatively impact the quality of surface water resources through the degradation of physical habitat (e.g., sedimentation, riparian removal and "flashy" hydroperiod) and lowering of chemical/physical quality of the water column itself (e.g., urban runoff, nutrients, lower summer flows and higher instream temperatures).

The 1998 TSD went on to state, "Ultimately, the maintenance of the WWH use and the recovery of impaired segments, is directly threatened by an anticipated increase of wastewater flows and land use changes, that will follow suburban development within the basin. To date, the WWTP upgrades have substantially advanced aquatic life use attainment in Blacklick Creek in comparison with pre-upgrade surveys. However, the ability of Blacklick Creek to safely continue to assimilate additional wastes without accruing environmental damage, or returning to its once degraded state, may be nearing capacity. Although a direct, clear and compelling link between the modest impairment documented in 1996 and effluents discharged by the WWTPs within the basin was not established, the conditions for granting future increases in effluent volumes should be conservative. Careful consideration must be given to the potential instream effects of additional pollutant loads if the improvements in Blacklick Creek are to be maintained into the future."

The 1998 TSD also observed, regarding land development impacts, that "every effort should be made to prevent and abate associated problems. Successful stream protection may be achieved through the implementation of construction site and storm water BMPs, the maintenance, or reestablishment, of permanent wooded riparian corridors on the mainstem and all Blacklick Creek tributaries and the avoidance of any direct channel modification to the mainstem or any Blacklick Creek tributary." Recent discussions with Agency water quality monitoring and assessment staff who have been assessing the watershed confirm that this continues to be a very important threat to water quality in the watershed, particularly in headwater stream watershed areas. These individuals have noted that unless the issues noted above are addressed in tributary streams, the mainstem of Blacklick Creek will decline in water quality beyond the point of full restorability.

## **4 Wastewater Treatment Facilities, Home Sewage Treatment and Disposal Practices and Future Needs**

### **4.01 Description of Existing Municipal Systems**

#### 4.01.01 City of Columbus Jackson Pike WWTP

The Jackson Pike Wastewater Treatment Plant (WWTP) located at 2104 Jackson Pike is one of two treatment works serving the Columbus metropolitan area. Under the City of Columbus's "Project '88" and into the years beyond (1989-1992) substantial upgrades were made to the original facility that was built in 1937. In addition, as part of Project '88, a large interconnector sewer was constructed connecting the Jackson Pike WWTP with the Southerly WWTP, thus enabling some sewage flow to be diverted to the Southerly WWTP for treatment and allowing the Jackson Pike WWTP to maintain a high degree of treatment. It currently has an average design flow of 68 million gallons per day (mgd) during dry weather. A maximum wet weather flow analysis determined that the Jackson Pike WWTP could treat at least 70 mgd during "any condition flow," which is the maximum wet weather instantaneous flow the plant is expected to meet at all times. The ideal condition flow is to reflect the maximum wet weather treatment capabilities of the plant when everything is working at its best. The ideal condition flow was found to be 115 mgd. The Jackson Pike WWTP treats wastewater collected from areas of Columbus that are mostly located within the Interstate Route 270. This also includes most of the industrial indirect users. As per the Columbus 2001 Annual Pretreatment Report, both the Jackson Pike WWTP and the Southerly WWTP treat wastewater from 97 significant industrial users with 51 being federal categorical standard facilities. A renewal NPDES permit application has been submitted and is under review with issuance expected to occur in the winter of 2003. The plant discharges into the Scioto River at RM 127.1.

#### 4.01.02 City of Columbus Southerly WWTP

The Columbus Southerly WWTP is the other treatment works serving the Columbus metropolitan area. The Southerly WWTP was constructed in the mid-1960s with expansions in 1971 and 1987. The plant is located south of Columbus at 6977 South High Street, Hamilton Township, Franklin County. This WWTP is currently permitted to treat an average daily flow of 114 mgd and discharges treated wastewater to the Scioto River at RM 118.4. A renewal NPDES permit application has been submitted and is under review with issuance expected to occur in the winter of 2003.

The Southerly WWTP treats a majority of the sewered area in the Big Walnut Creek, Alum Creek and Blacklick Creek watersheds. Columbus has sized its sewers to eventually service the entire Blacklick Creek watershed, if agreements can be obtained with other political jurisdictions and other sewer service providers or through annexation. Wastewater from areas on the north and west sides of Columbus, areas outside of I-270, Grove City and excess flows from the Jackson Pike WWTP are also treated at the Southerly WWTP.

Columbus has agreements with several entities including New Albany, Reynoldsburg, Gahanna, Brice, Groveport and a portion of Delaware County to provide wastewater treatment service for the next 20 years.

#### 4.01.03 City of Columbus Collection System

The sewerage collection system for the city of Columbus consists of mainly separately sewered areas. Columbus, however, also has areas served by combined sewers. Additional description is provided below and in the biological and water quality survey of the middle Scioto River and Alum Creek (Ohio EPA 1999).

In separately sewered areas, wastewater is conveyed to the wastewater treatment plant through sanitary sewers while storm water is conveyed to area streams through storm sewers. In combined sewer areas, the wastewater and any storm water is directed to the wastewater treatment plant in one pipe. During some storm events, overflows of combined sewage and storm water (termed combined sewer overflows, or CSOs) are discharged from overflow structures in the collection system to local streams. Cities with CSOs are required to minimize overflows and protect water quality. U.S. EPA and Ohio EPA are currently reviewing a Long Term Control Plan developed by Columbus to meet the regulatory requirements for CSOs.

##### *Sanitary Sewer Overflows*

Sanitary Sewer Overflows (SSOs) are untreated sewage overflows from separately sewered areas. Discharges from SSOs are not authorized under the Clean Water Act. Columbus SSO locations are throughout its sanitary sewer collection system with 80% located in the older portions. These SSOs discharge directly to a storm sewer when infiltration and inflow from rain events surcharge the sanitary sewers. The sanitary sewer collection system has over 100 un-permitted sanitary sewer discharge points, which ultimately discharge to the Scioto River, Olentangy River and Alum Creek by way of storm sewers and ditches. The frequency of these discharges is unknown. A list of SSOs including the relief location, type of discharge and discharge location are provided in Appendix 10. The Columbus Sewer Maintenance Operations Center continues to investigate all suspected sanitary sewer relief locations. Ohio EPA and the City of Columbus have reached agreement on a comprehensive resolution to the SSO issues within the Columbus system. The agreement is set forth in a Consent Order which was public noticed for comment prior to being issued by the Franklin County Court of Common Pleas on August 1, 2002.

##### *Bypasses and Wet Weather Overflow Tanks*

Both the Columbus Southerly and Jackson Pike facilities have treatment bypass structures at the head of the treatment plant. These bypass structures provide no treatment, but prevent hydraulic overloading of the treatment facility or collection system during rainfall events. Hydraulic overloading may cause operational problems, reduce treatment efficiency or backups in the collection system (e.g., basement flooding). These structures are permitted outfalls in the NPDES permits with monitoring requirements so that the frequency and duration of sewage treatment bypassing is recorded. Obviously bypasses

are not desirable and sewer system and treatment plant capacity should be designed to minimize their occurrence. Recent examinations of monthly operating report data from each plant indicates that bypass outfalls at the Jackson Pike treatment facility are rarely used, but there has been an unacceptable pattern of routine discharges from the Columbus Southerly 002 bypass outfall. The Consent Order requires the City of Columbus to build the necessary infrastructure improvements to correct this problem.

There are presently two wet weather overflow structures in the Columbus sewer system that provide some degree of storage and treatment of wet weather flows. They are the Alum Creek Storm Tank Overflow ( Columbus Southerly permit outfall 006) and the Whittier Street Storm Tank Overflow (Jackson Pike WWTP permit outfall 018). There is also a monitored bypass at the Whittier Street structure (Jackson Pike WWTP permit outfall 019). Previous studies found by volume that the Whittier Street Storm Tank accounts for 90% of all CSO releases and that the Alum Creek Storm Tank ranks second with 7% (Ohio EPA 1986). These structures were designed in the 1930s to capture large amounts of pollutants in order to improve local surface water quality. The tanks act as temporary holding basins during small storm events, holding sewage until the levels in the interceptor sewers subside, or providing primary treatment prior to discharge when large storm events occur. Solids are retained in the tank and then returned to the WWTPs for treatment. The Consent Order requires the City of Columbus to build the necessary infrastructure improvements to improve the headworks of the Southerly facility as well as the interconnector sewer to ensure that high flows can be taken into the plant, and a tunnel that will provide storage capacity for additional flows.

#### *Combined Sewer Overflows*

There are a total of 34 permitted regulator discharges, relief structure overflows and storm tank overflows in the Columbus collection system that are CSOs. The main storm water tanks described in the previous paragraph and the other overflow points are listed in Appendix 10.

#### 4.01.04 Village of Canal Winchester

The Village of Canal Winchester owns and operates a 2.48 mgd wastewater treatment plant (WWTP). The facility is located at 410 Ashbrook Road in southeast Franklin County. The WWTP discharges to Walnut Creek at RM 24.20. The Village provides services to a rapidly growing community of about 3400 residents along with the Village of Lithopolis. The original WWTP was constructed around 1960 and was designed to handle an average flow of 0.33 mgd. The treatment system was upgraded and expanded in 1987 and in 1992. In 1996 and 1997 Ohio EPA issued permits to the Village allowing for expansion of the WWTP to meet Best Available Demonstrated Control Technology (BADCT) limitations. The expansion consisted of replacing the existing plant with a new treatment system and converting the old plant into sludge handling facilities. The NPDES permit expired on February 26, 2002 and is scheduled to be renewed in 2003.

#### 4.01.05      City of Pickerington

The City of Pickerington owns and operates an advanced WWTP, which discharges to Sycamore Creek. Wastewater flows have recently increased from an average daily flow of 1.5 MGD to 1.9 MGD. A permit modification request was submitted to Ohio EPA on September 12, 2000 to treat 3.5 mgd at the plant.

The facility received an NPDES permit from Ohio EPA on November 27, 1996 with an effective date of November 1, 1996. The permit expired on October 28, 2001. A public hearing was held on January 10, 2002 to consider the city's newest request to treat and discharge up to 3.5 mgd. The Agency has determined that this proposal would meet water quality standards for Sycamore Creek and does not conflict with the existing 208 Plan. A draft NPDES permit renewal that incorporates this increase was public noticed in April 2002. A public hearing on the draft permit was held on August 29, 2002. A final permit is expected to be issued shortly.

#### 4.01.06      Village of Carroll

The Village of Carroll owns a wastewater treatment works located on the east side of U.S. Route 33, just north of Winchester Road, Bloom Township, Fairfield County. The Village has contracted with the Fairfield County Utilities Department for the operation of the treatment and collection system. Service is provided to approximately 700 residents and small commercial entities within the Village limits. The facility is a two cell controlled discharge lagoon system designed to treat an average design flow of 0.038 MGD. The discharge point is to an unnamed tributary to Walnut Creek. The draft NPDES permit renewal was public noticed on April 19, 2002.

### **4.02 Description of Existing County and Regional Sewer Districts**

#### 4.02.01      Fairfield County, Tussing Road Water Reclamation Facility

The Tussing Road Water Reclamation Facility (WRF) is owned and operated by the Fairfield County Commissioners. The facility is located at 10955 Tussing Road in Violet Township, Fairfield County, Ohio. The discharge point is to Blacklick Creek at river mile 11.15. The Tussing Road WRF was originally constructed in 1976 as a semi-public facility with an average design flow capacity of 0.22 mgd. The plant was purchased by Fairfield County in 1987 and was upgraded in 1988 to an average daily flow capacity of 1.0 mgd. The county again upgraded the plant in 1991 to increase the capacity to 1.4 mgd and in 1994, Ohio EPA PTI approval was given for a 2.0 mgd plant expansion. In addition to the normal influent wastewater flows and loads, the county collects solids from several package treatment plants located outside the Tussing Road WRF service area. The service area encompasses approximately 6,490 acres in Violet Township, along with a small area of Pickerington.

The Tussing Road WRF is designed to treat an average daily design flow of 2.0 mgd. The current permit expires March 31, 2003. Fairfield County Board of Commissioners

submitted an NPDES permit modification request on May 7, 2001. The permit modification requests to upgrade the plant in several phases to 3.0 mgd to serve their customers through 2010. The NPDES permit will be processed upon receipt of a permit to install application for the wastewater treatment plant upgrade. The permit to install application was received on April 15, 2002 and is under review. A revised permit is expected in 2003. The plant has been designed for future expansion up to 5.0 MGD to serve customers through 2020.

#### 4.02.02      Fairfield County, Little Walnut Creek Water Reclamation Facility

The Little Walnut Creek Water Reclamation Facility (WRF) is owned and operated by the Fairfield County Commissioners. This advanced treatment works is located west of the intersection of Amanda Northern Road and Benadum Road in Violet Township, Fairfield County and discharges to Walnut Creek. The WWTP is designed to treat an average design flow of 0.75 mgd from residential, commercial and industrial waste. The NPDES permit renewal was issued on March 1, 2002. The WWTP has been designed for future expansion in 0.75 MGD increments up to 3.0 MGD to serve residences and businesses along the U.S. Route 33 corridor through 2020.

#### 4.02.03      Fairfield County, Huntington Hills Water Reclamation Facility

The Huntington Hills Water Reclamation Facility is owned and operated by the Fairfield County Commissioners. A new facility has been proposed to be located along Stemen Road, just west of Saylor Road in Violet Township, Fairfield County. The proposed facility is designed to treat an average design flow of 0.80 mgd. This advanced treatment works would discharge to Sycamore Creek, tributary to Walnut Creek. The NPDES permit for the increased flow was issued on March 1, 2002. The Ohio EPA issued the PTI for this new facility (i.e., Sycamore Creek Water Reclamation Facility) on November 29, 2001. Upon completion of construction of the new facility the existing Huntington Hills plant will be demolished.

#### 4.02.04      Franklin County, Century Acres

The Franklin County Commissioners own and operate the Century Acres WWTP, which is located at the east end of Greengate Drive in Madison Township, Franklin County. The facility is permitted to discharge 0.025 mgd directly to Big Run at RM 1.75, tributary to Walnut Creek. The NPDES permit for Century Acres expires on June 30, 2005.

#### 4.02.05      Franklin County, Oakhurst Knolls

The Franklin County Commissioners own and operate the Oakhurst Knolls WWTP, which is located on the east side of Norton Road in Pleasant Township, Franklin County. The facility is permitted to discharge 0.1 MGD directly to Hellbranch Run at RM 5.8. The NPDES permit for Oakhurst Knolls expires on June 30, 2005.

#### 4.02.06 Franklin County, Holton Park Estates

The Franklin County Commissioners own and operate the Holton Park Estates WWTP, which is located at the south end of Grove City at 1500 Holton Road in Jackson Township, Franklin County. The facility is permitted to discharge 0.005 mgd to an unnamed tributary of Grant Run. The Holton Park Estates WWTP is not under NPDES permit. Franklin County is in the process of submitting an application.

#### 4.02.07 Franklin County, Taylor Estates

The Franklin County Commissioners own and operate the Taylor Estates WWTP, which is located at 5940 Alice Drive., Plain Township, Franklin County. The facility is permitted to discharge a monthly average flow of 0.025 mgd to an unnamed stream, tributary to Rocky Fork Creek and Big Walnut Creek. The NPDES permit for Taylor Estates expires on March 31, 2005.

#### 4.02.08 Franklin County, Darbydale - a proposed facility

Malfunctioning onsite disposal systems and home aerators have been discharging raw and partially treated sewage to storm sewers and roadside ditches in the unincorporated community of Darbydale in Pleasant Township, Franklin County. While this community is within the Columbus FPA, it lies outside the area where service is expected to be provided by the City of Columbus within the next 20 years, and a proposed Darbydale facility service area has been established. (See Appendix 1, Fig. 9)

Directors Final Findings and Orders (DFFOs) were issued February 4, 2002 to the Franklin County Commissioners to correct the pollution problems. A 0.5 MGD advanced wastewater treatment plant (WWTP) that would discharge to an unnamed tributary of Big Darby Creek has been proposed by Franklin County. This WWTP is also expected to serve the three nearby mobile home communities and a school (described below). However, the City of Columbus may determine that it is technically and financially viable to construct the necessary trunk sewers and take the flow that is currently planned to be directed to the new Darbydale WWTP. As it stands now, the applications for NPDES and PTI permits (received by Ohio EPA on August 9, 2002) were returned to the County in October, along with a comment letter, due to incomplete information.

The Timberlake subdivision community (see Section 4.03.04) is under separate DFFOs and future agreements or DFFOS may require treatment at the new Darbydale facility or by the City of Columbus. To allow for either possibility, the Timberlake subdivision is an overlapping service area (Darbydale and City of Columbus).

#### *Community Gardens MHP*

This manufactured housing park is located at 6244 State Route 665, Pleasant Township, Franklin County and is served by a 0.03 mgd wastewater treatment plant. It currently receives the effluent from this development and Pleasant Acres MHP. It will be abandoned when connection to the Darbydale WWTP is accomplished in 2005. The new Darbydale

WWTP will be built on this property and discharge to the unnamed stream, tributary to Big Darby Creek.

*Pleasant Acres MHP*

This manufactured housing community is located at 6106 State Route 665, Pleasant Township, Franklin County and is served by a 0.03 mgd wastewater treatment plant. It will be abandoned when connection to the Darbydale WWTP is accomplished in 2005.

*Oak Hills MHP*

This manufactured housing community is located at 5965 Harrisburg-Georgesville Road, Pleasant Township, Franklin County and is served by a 0.069 mgd wastewater treatment plant with a discharge to Big Darby Creek. This treatment facility consistently violates its NPDES discharge permit. The discharge permit will be modified before 2005 to require connection to the Darbydale WWTP.

*Darbydale Elementary School*

A 7,500 gpd treatment works serving this South Western City School District facility is located at 7000 State Route 665, Pleasant Township, Franklin County. This permit will be modified by 2005 to require connection to the Darbydale WWTP.

4.02.09 Pickaway County - Scioto and Darby Townships

This area is directly adjacent to Franklin County and the proposed Columbus Metropolitan Facility Planning Area (*Columbus Metropolitan Facility Plan Update (CMFP)*, Malcolm Pirnie 2000). Portions of these townships near the villages of Harrisburg and Orient are within the existing Columbus FPA. Based on population density forecasts the *CMFP* update does not call for providing centralized sewers in the southwest corner of Franklin county (portions of Pleasant Township). However, there is a concentration of failing individual home sewage treatment and disposal systems (HSTDS) in the Village of Harrisburg which straddles the Franklin/Pickaway County line. The feasibility of wastewater service to this community should be evaluated in the planning described below.

Pickaway County drains into the Scioto Basin, with many of the incorporated communities operating their own municipal wastewater treatment systems. The Board of County Commissioners has the responsibility pursuant to Chapter 6117 of the Ohio Revised Code (ORC) to review and approve sanitary sewerage facilities in the county outside of any municipal corporation. The Board also has the authority to establish sanitary sewer districts and construct sanitary sewerage facilities for the purposes of preserving and promoting the public health and welfare.

The Pickaway County Commissioners hired MS Consultants to compile a planning document, entitled "Wastewater Treatment Study of Scioto and Darby Townships," dated July 28, 2000, with an addendum dated August 10, 2000. An additional study was compiled on April 4, 2001, specific to Darby Township improvements. The studies were initiated because of 1) water quality degradation in the Big Darby watershed as a result of discharges from several existing WWTPs in the planning area, 2) localized pollution

problems from failing on-site wastewater systems, 3) poor siting of HSTDS due to lot size, poor soil conditions, high ground water, etc. and 4) residential and commercial development being constrained due to the lack of public sewerage facilities.

The initial study identified wastewater treatment planning options for Darby and Scioto townships. The addendum recommended wastewater treatment options for Harrison Township based upon a recently-completed land use study for the township. Communities not covered by the study which own and operate their own regional WWTPs, in other portions of the county include Ashville, Circleville, South Bloomfield, Williamsport and New Holland. Unsewered communities include Darbyville and Tarlton. Other areas in the county are served by individual package plants or on-site HSTDS.

The study evaluated many alternatives for wastewater treatment and based upon public input, recommended two regional WWTPs. The existing Ohio Department of Rehabilitation and Correction Wastewater Treatment Facility in Orient will be expanded in phases, to serve existing and future development in Darby Township, Orient and the unsewered Village of Harrisburg. Design is expected to begin on these projects soon. The feasibility of a second plant near Commercial Point, to serve the remainder of Scioto Township is being evaluated. A schedule has not been developed for the Scioto Township improvements. Both plants would serve areas with failing on-site septic systems and eliminate smaller package plants.

#### 4.02.10 Jefferson Water and Sewer District - Wengert Road WWTP

The Jefferson Water and Sewer District (JWSD) owns and operates the Wengert Road WWTP, located on the south side of Wengert Road, Jefferson Township, Franklin County. The WWTP services various developments within the unincorporated areas of Jefferson Township. The facility discharges treated wastewater to an unnamed tributary to Blacklick Creek at RM 18.10.

Ohio EPA issued a permit to install in December 1988 for the 0.180 mgd extended aeration WWTP. The facility received an NPDES permit on June 13, 1995 which expired on June 27, 2000. Timely application has been made for a permit renewal.

Ohio EPA was notified on August 20, 2002 (letter from Theodore Boggs to Joseph Koncelik) that the JWSD and the City of Columbus entered into a long-term agreement for the treatment services for wastewater generated in the District's sanitary sewer area. Under the agreement, the District will continue to own, operate and maintain the collection sewers within this sanitary sewer area. Connection to the Blacklick Creek subtrunk sewer and routing of sewage to the City of Columbus is anticipated to occur within the next six to twelve months. The District's Wengert Road Plant and Windrush Plant (see next section) will continue to operate until this connection is completed.

#### 4.02.11 Jefferson Water and Sewer District - Windrush Creek Subdivision

The JWSD owns and operates the Windrush Creek wastewater treatment plant (WWTP). The WWTP is located on the south side of Windrush Lane, east of Taylor Station Road, Jefferson Township, Franklin County. The facility discharges to an unnamed stream, tributary to Rock Fork Creek and Big Walnut Creek. The facility was constructed in 1974 to provide wastewater service to 78 homes. The WWTP is a 0.040 mgd advanced treatment system. The 1997 renewal NPDES permit required that the Windrush Creek WWTP be abandoned and the wastewater be directed to the Wengert Road sewerage system. See Section 4.02.10 for an explanation of when the Windrush Creek plant will cease operation.

#### 4.02.12 Southwest Licking Community Water and Sewer District

The Southwest Licking Community Water and Sewer District (SLCWSD) maintains its own wastewater treatment plant (WWTP) at the corner of Refugee and Gale Roads, Harrison Township, Licking County. The plant discharges treated wastewater to the South Fork of the Licking River and is currently permitted for an average daily flow of 1.0 mgd. The facility received an NPDES permit on January 18, 1994 with an effective date of March 1, 1994. The permit expired on February 28, 1999. The plant continues to operate under this permit, while a permit renewal application is under review pending completion of project planning by SLCWSD. In June 2002 Ohio EPA approved a PTI for a design flow of 2.65 MGD that is expected to serve customers through 2010. A future plant expansion to treat between 4.0 - 4.8 MGD will be needed to serve the estimated growth within the District by 2020.

The service area is generally bounded by Morse Road in Licking County to the north, Dixon Road to the west, Palmer Road to the south and Gale Road to the east.

#### 4.02.13 Union County - Heritage Industrial Park

The Heritage Industrial Park, located off Industrial Parkway in the southeast corner of Jerome Township, Union County, is comprised of a mixture of light industrial and commercial facilities. The industrial park was originally constructed in 1989. Wastewater generated at the park was formerly treated through an 8,000 gpd wastewater treatment plant that discharged to the North Fork of Indian Run. The package plant, which was owned and operated by the Union County Commissioners, was abandoned in 1998 following construction of a force main/gravity sewer collection system along Industrial Parkway to convey the wastewater to Marysville for treatment.

#### 4.02.14 Union County - Jerome Industrial Park

The Jerome Industrial Park, located off Industrial Parkway in the southeast corner of Jerome Township, is comprised of a mixture of light industrial and commercial facilities. The industrial park was originally constructed in 1976. Wastewater generated at the park was formerly treated through a 20,000 gpd wastewater treatment plant that discharged to the Gordon Tri-County Ditch. This facility was owned and operated by the Union County

Commissioners and then abandoned in 1998 following construction of a force main/gravity sewer along Industrial Parkway to convey the wastewater to Marysville for treatment.

### **4.03 Description of Privately Owned Utilities**

#### 4.03.01 Ohio-American Water Company - Blacklick Estates WWTP

The Blacklick Estates Wastewater Treatment Plant (WWTP) is owned and operated by the American Water Works Company. The facility is located at 4010 Signal Road, Madison Township, Franklin County, Ohio.

In September 1994, Ohio EPA issued a permit-to-install (PTI) for major improvements to the Blacklick Estates WWTP. The facility received a National Pollutant Discharge Elimination System (NPDES) permit from Ohio EPA on June 27, 2000, with an effective date of August 1, 2000. The permit expires April 1, 2003. Final effluent is discharged directly to Blacklick Creek at RM 4.85.

The plant serves the Blacklick Estates subdivision, with 3,100 residential connections and has the capability to treat 1.2 million gallons per day (mgd) of wastewater.

#### 4.03.02 Ohio-American Water Company - Huber Ridge Subdivision

The wastewater treatment plant (WWTP) at the Huber Ridge Subdivision was constructed in 1962 then upgraded with additional treatment capacity and modernized equipment in 1994. The facility utilizes a lift station, comminutor, extended aeration, clarification, flow metering, chlorination and dechlorination. In addition, sludge-holding and aerobic digestion are operational and equipped with a belt filter press to dewater sludge. The plant has an average design flow of 1.03 mgd and discharges into Alum Creek. A renewal NPDES permit was issued to the Huber Ridge WWTP on June 29, 2001 with an effective date of August 1, 2002 and an expiration date of July 31, 2006.

#### 4.03.03 Ohio-American Water Company - Lake Darby Estates WWTP

The Lake Darby Estates WWTP is owned and operated by the American Water Works Company. The plant is located at 491 Hubbard Road, in Prairie Township, Franklin County. The plant is a 0.50 mgd extended aeration treatment system that includes tertiary pressure filters. The discharge is to Big Darby Creek. The NPDES permit expires on February 28, 2005.

#### 4.03.04 Cordell Regional Utilities, Timberlake Subdivision

A 50,000 gpd wastewater treatment plant serves this residential development and is located at 6675 Lambert Road, Pleasant Township, Franklin County. It discharges to Hellbranch Run, tributary to Big Darby Creek. Directors Final Findings and Orders issued by the Director of Ohio EPA in May 2002 require Cordell to construct new sewage collection system components (equalization basin, force main and metered pump/lift

station), to abandon the treatment system and eliminate the discharge to Hellbranch Run. Within three years the sewers will be connected to a centralized sewer system.

While this subdivision is within the Columbus FPA, it lies outside the area where service is expected to be provided by the City of Columbus within the next 20 years (See Appendix 1, Fig. 9). Central sewer service can be provided by the City of Columbus or, as summarized in the DFFOs and a Public Utilities Commission of Ohio report of investigation, the proposed Franklin County Darbydale facility (see Section 4.02.08) is another viable option. To allow for this possibility, the Timberlake subdivision is an overlapping service area (Darbydale and City of Columbus).

#### **4.04 Description of Industrial Wastewater Sources - Blacklick Creek**

##### 4.04.01 Columbus Steel Drum

Columbus Steel Drum is located at 1385 Blatt Boulevard in Gahanna, Franklin County. This facility reconditions and recycles 55-gallon steel drums. The industrial processes include heat oxidation, stripping, caustic washing, shot blasting and painting. All process wastewater is discharged to the Gahanna sanitary sewer system with treatment provided by Columbus. The NPDES permit for this facility is for the runoff discharged to an unnamed stream, tributary to Blacklick Creek at RM 17.8.

The facility received an NPDES permit from Ohio EPA on May 10, 2001 with an effective date of June 1, 2001. The permit expires May 31, 2006. In 2002, three separate referrals have been sent to the Attorney General's Office to address multiple violations at the facility.

##### 4.04.02 AEP Cooling Water

American Electric Power owns an operations and control center at 4500 South Hamilton Road in Groveport, Franklin County. The primary function of this facility is to monitor the generation, transmission and distribution of electricity. The facility uses well water to cool units in the operations center. The non-contact cooling water is then discharged to a 4 million gallon retention pond, where it is mixed with storm water collected at the facility then discharged to Blacklick Creek. The facility does not discharge water to Blacklick Creek continuously, but is able to discharge up to 0.576 mgd.

The facility received an NPDES permit on May 24, 2000 with an effective date of July 1, 2000. The permit expires June 30, 2005.

#### **4.05 Description of Other Wastewater Sources - Blacklick Creek**

Several small WWTPs are operating in the Blacklick Creek watershed without permits. The following discussion describes those sources and their status.

##### 4.05.01 Winding Hollow Country Club - Land Application System

The Winding Hollow Country Club, located at 6140 Babbit Road, New Albany, operates a sewage treatment plant with a spray irrigation system that serves the clubhouse facilities. Treated wastewater is land applied to golf course grounds and is not discharged to surface waters. Because the system is a non-discharging facility, an NPDES permit has not been issued as of this point in time.

#### 4.05.02 Modern Mobile Home Park

Modern Mobile Home Park, located at 8910 East Main Street, Etna Township, Licking County, has a sewage treatment facility consisting of a 3,600 gallons per day (gpd) extended aeration treatment plant. This facility is preceded by a trash trap and followed by dosing, surface sand filters and a chlorine contact tank. The plant discharges to an unnamed stream, tributary to Blacklick Creek and has the capability to serve twenty-six (26) mobile homes. The facility received a PTI on July 17, 1987.

An NPDES permit application was received in November 2000 and is still pending. Additional information was requested in April 2001 pertaining to alternatives for the plant and Ohio EPA is awaiting a response from the applicant.

#### 4.05.03 By-Willow Mobile Home Park

By-Willow Mobile Home Park (formerly known as the Main Mobile Home Park and Willison Trailer Park), located on 10 acres at 8450 East Main Street in Etna Township, Licking County, currently operates a sewage treatment plant. It consists of an extended aeration unit (aeration and clarification) followed by surface sand filters and discharges to an unnamed stream, tributary to Blacklick Creek. The plant serves twenty-two (22) mobile homes. Plans for the plant were originally approved by Ohio EPA in 1978 for a 3,850 gpd plant, serving 17 trailer spaces, a one-bedroom apartment and 10 employees. The NPDES permit requires the WWTP to be abandoned and tied into the Southwest Licking Community Water and Sewer District no later than February 2004.

#### 4.05.04 Previously Unidentified Point Source

The “stream walker” (see Appendix 9) identified a discharge pipe in Licking County, two miles from the Blacklick Creek headwaters. The pipe was discharging a reddish-brown substance, which was affecting 8-10 miles of Blacklick Creek downstream from its discharge point. Ohio EPA has visually inspected the discharge point 4 times since the discharge was noted and no evidence of discharge has been found since the initial occurrence. If a discharge is noted, sampling will be done to determine the source and action will then be taken to ensure the source is in compliance with federal and state regulations.

### **4.06 Home Sewage Treatment and Disposal, County Health Department Programs**

The following is a summary of how counties regulate home sewage treatment and disposal systems (HSTDS).

#### 4.06.01      Licking County

For subdivisions, the Licking County Health Department permits septic systems with leach fields on a minimum lot size of 1.6 acres; however, this size may not be adequate depending upon the soil type present. The health department also permits septic systems for individual lots that are 1 acre, exclusive of easements and right-of-way, under ideal soil conditions.

#### 4.06.02      Fairfield County

Under the Fairfield County Subdivision Regulations, a minimum lot size of 1 acre (43,560 sq. ft.) is required to install a HSTDS; however, with certain soil types, the county would not permit a HSTDS if the soil was not compatible with such a treatment system. Most areas within Fairfield County located within the Blacklick Creek watershed are either served by Fairfield County or Pickerington. The unsewered areas remaining in Violet Township are zoned residential with a minimum lot size requirement of 20,000 square feet for an R1-Residential zoning and 30,000 square feet for an R2-Residential zoning, not including streets and miscellaneous easement areas.

#### 4.06.03      Franklin County

The Franklin County Health Department's HSTDS program incorporates the use of alternative technology under the guidance of the Ohio Department of Health. Off-lot discharging systems are prohibited in proposed subdivisions. Installation of systems on hydric soils such as Pewamo or Kokomo is not allowed. A minimum individual lot size of 40,000 square feet under ideal soil conditions is required to install a HSTDS. The lot size may be required to be larger depending upon the soil type. The county encourages a minimum subdivision lot size of 2 acres (87,120 sq. ft.) where use of on-site treatment systems is planned. The Health Department has identified a number of areas in the Blacklick Creek watershed that have failing septic systems

#### 4.06.04      Delaware County

The Delaware County Health Department requires a minimum lot size of 1 acre, exclusive of easements and right-of-way where use of on-site treatment systems is planned. Depth to ground water or rock strata must be at least 4 feet below the bottom of the proposed system. On-lot sewage disposal systems are not permitted in severe soil conditions (as identified by the county Soil Survey). In addition, texture, structure and permeability of the soil must be suitable to provide internal drainage.

### **4.07 On-lot HSTDS in the Blacklick Creek Watershed**

Several portions of the watershed, particularly those in the uppermost and lower reaches as well as areas within the eastern boundaries, are not presently served by any centralized collection system (described herein as "undeveloped"). For the northeastern portion of the watershed, Licking County is responsible for addressing wastewater treatment issues. For

the uppermost portion of the watershed west of Licking County (except for a very small area in Delaware County) and the undeveloped lower watershed, Franklin County is the responsible entity.

The use of “home aeration units” with off-lot discharge to treat sewage from individual homes has been found to be rather extensive within the Blacklick Creek basin. There are approximately 75 aerators in Plain Township, 19 aerators in New Albany, 147 aerators in Jefferson Township, 68 aerators in Reynoldsburg, 12 aerators in Truro Township, 7 aerators in Brice, 48 aerators in Madison Township, 2 aerators in Columbus and approximately 350 aerators in Licking County.

Closely spaced home aerators or home aerator discharges to a common collector tile have been found to be the cause of nuisance conditions and water quality standards violations in many areas of Ohio.

In general, the older the aeration system, the more likely that it does not produce a good quality effluent. Newer model aeration units may provide better treatment, especially if devices for filtration and disinfection have been provided. Even with these additional controls, they may still not meet water quality standards. Franklin County has a program to inspect home aerators annually. Licking County inspects these systems on a complaint-basis.

The 1996 Blacklick Creek TSD lists home aerators as a contributing factor for non-attainment of water quality standards in the upper Blacklick Creek basin.

#### **4.08 Population Projections and Future Treatment Needs**

##### 4.08.01 Columbus Metropolitan Area

The 2000 census figures for Franklin County and Columbus are 1,068,978 and 711,470, respectively. No precise figure is available, but this range of population approximates the population presently served by centralized sewer systems in the Columbus Facility Planning Area. The *CMFP* update included a map of the areas expected to have population densities of two or more people per acre by the year 2020 based on forecasts supplied by MORPC (see Appendix 1, Fig. 2, denoted as “served, contracted and 20 year growth areas”). No equivalent future population figure was provided. The *CMFP* states that the City of Columbus will be able to meet this anticipated need with the existing wastewater treatment capacity at its two plants. However, some major collection system improvements are necessary to address an unacceptable pattern of plant bypasses at the Columbus Southerly facility and SSOs. See Section 4.01.03 for more discussion about the Columbus collection system. As described in more specific terms in Section 5.02, the treatment needs in some areas of the Facility Planning Area can also be met by other providers.

As summarized in Section 3 and covered in more detail in a report entitled *Biological and Water Quality Study of the Middle Scioto River and Alum Creek* (Ohio EPA 1999), there have been improvements to the sewage collection system that have reduced wet weather

overflows and the impacts on receiving waters. However, sewer system capacity at dry weather vs. wet weather conditions will continue to be a concern in light of the added sanitary flows associated with the anticipated growth. Refer to additional discussion in Section 4.01.03.

The MORPC *2025 Transportation Plan* (2001) contains recent population projections for local communities in Franklin County, Delaware County and portions of Licking and Fairfield counties (Appendix 11). This data shows that Columbus and many suburban communities should expect substantial growth in the next two decades. The total population growth of the MORPC study area by 2025 was estimated at 419,000. If the growth in communities outside of the Columbus Metropolitan Facility Planning Area is subtracted, a rough estimate of an additional 300,000 people in the Columbus FPA by the year 2025 is obtained. The majority of this population will need centralized sewer service.

The *Columbus Comprehensive Plan* (1993) contains this description of how the necessary infrastructure needs will be programmed and implemented.

“Sanitary sewer service will be programmed for Expansion Development Districts (or sub-districts) at such time as a plan for an appropriate level of capital improvements and service provision is in place. The service plan will include a full description of capital improvements and services needed to appropriately serve the area or any part or parts thereof, a timetable for implementing them, a budget and identification of a dependable source of financing. The capital improvements and services can be financed by the city, private interests, or a combination. Programming of sanitary sewer service to an expansion development district will represent an acknowledgment by the city of Columbus that a satisfactory level of facilities and services will be available. Such acknowledgment will require the passage of a specific Plan recommendation ordinance by City Council, taking into account the recommendations of the Development Department.”

The City of Columbus Planning Division maintains a web page that provides many of the planning documents for the city’s expansion districts (<http://www.columbusinfobase.org/>). This site also includes information on the city’s six-year Capital Improvements Program (CIP). The CIP is intended to provide a general framework for the city’s capital investment. This database, which includes maps and project information by planning area, supplies information about capital improvement projects for water and sewers.

#### 4.08.02      Blacklick Creek Watershed

Typical of the greater Columbus metropolitan area, growth and development has been proceeding rapidly in the Blacklick Creek watershed in recent years. While a number of areas within the watershed remain undeveloped, only the northeastern quadrant in Licking County (i.e., portions of Monroe Township) and the southeastern tip of Harlem Township (Delaware County) in the Blacklick basin are expected to remain rural. Based on MORPC projections (see Appendix 1, Figs. 6 and 7) the rest is expected to continue developing, though a few locations, most notably in southeast Columbus and the Jefferson Township

portion of Franklin County, are proposed for “cluster development,” which would also include large tracts of undeveloped “green space.” With this continued growth, as well as some water pollution problems attributable to inadequate and/or failing HSTDS, future sewer service will likely be needed in many currently undeveloped areas of the Blacklick watershed.

Based on MORPC projections by traffic zone of population growth and percent change in housing units between 2000 and 2020, both population and housing increases are projected throughout the watershed. However, the greatest increases are projected to occur in these portions of the watershed: 1) New Albany and surrounding unincorporated areas; 2) east of Gahanna in both unincorporated areas and areas within Columbus; 3) in Reynoldsburg and; 4) in Groveport, adjacent southeast Columbus and surrounding unincorporated areas. Please refer to Appendix 1, Figs. 7 and 8.

Central sewer service can be provided to most of the anticipated future development areas within the watershed simply by extending collection systems from existing sewer lines. In some instances, however, major new trunk sewer lines may be needed, such as those proposed to augment the existing, undersized City of Columbus’ Blacklick Trunk Sewer south of I-70 and to extend the Blacklick Trunk Sewer north from the Broad Street area to serve the future needs of New Albany, Plain Township and possibly Jefferson Township. The Blacklick Trunk Sewer has also been designed to transport the flows from existing WWTPs within the watershed, namely the Jefferson Water and Sewer District’s Wengert Road plant, Fairfield County’s Tussing Road WRF and, potentially, the Blacklick Estates WWTP - if these treatment facilities are abandoned - to Columbus’ Southerly WWTP. However, mutually satisfactory service agreements must be reached between Columbus and these other providers.

While many undeveloped areas within the watershed have only one sewer system to which they can feasibly connect, a few locations could be served by more than one existing system. These include much of Jefferson Township, which could be served by either the Jefferson Water and Sewer District or the City of Columbus (via sewers from Gahanna, Reynoldsburg, or Columbus) and the southwestern corner of Licking County, which could be served by either the Southwest Licking Community Water and Sewer District or the City of Columbus (via sewers from Reynoldsburg or Columbus). While Ohio EPA is aware of cluster HSTDS in the Blacklick Creek watershed, information is not available as to whether these systems are currently failing.

#### **4.09 Protecting Water Quality in Blacklick Creek**

As indicated in the earlier section of the report on existing water quality, growth and development within the watershed are seriously threatening and also causing degradation of, water quality in Blacklick Creek and its tributaries. Research from a number of streams in Ohio similar to Blacklick Creek suggests that a value between 40 - 60% urban land use represents an upper value beyond which it is highly unlikely that the Warmwater Habitat water quality standards can be maintained (Yoder, et. al., 2000). This is largely due to habitat alteration (i.e., physical changes to the stream and its tributaries, such as

channelization, culverting, streambank disturbance, etc., as well as removal of streamside riparian vegetation) and to changes in storm water runoff (i.e., increased flow amounts and intensity, leading to severe scouring and siltation and decreased stream recharge during low-flow periods). Changes in storm water run-off are due to “hardening” of the watershed caused by increased impervious surfaces (parking lots, roofs and roads) and increased pollutant loading from flushing of paved surfaces and storm water catch basins. Finally, although agricultural land use is on the decline in the watershed the potential for negative impacts on water quality have been documented.

Therefore, proactive steps to protect water quality in Blacklick Creek and other rapidly developing watersheds, should be a part of the region’s water quality management plan. The potential for negative water quality impacts can be avoided or minimized if the proper Best Management Practices (BMPs) are planned, installed and maintained whenever land development occurs. Another factor to consider is that, according to the 1998 Technical Support Document referenced earlier in this report, the mainstem of Blacklick Creek is at or near its capacity for assimilating pollutants from wastewater treatment plant discharges. In order to discharge additional wastewater into the mainstem of Blacklick Creek, either additional pollution controls will be needed for existing discharges, or new discharges will need to meet more stringent effluent limits than is currently the case with existing wastewater treatment facilities. Lastly, the remaining farming operations in the watershed should receive any necessary technical assistance from local SWCD offices or the Ohio Department of Agriculture to ensure that proper BMPs are installed to reduce pollution and improve stream habitat conditions.

#### 4.09.01      Headwater streams

The Blacklick Creek basin is comprised mainly of small headwater streams flowing directly into Blacklick Creek. There are approximately 14 headwater streams in the Blacklick basin and, of the seven that have been briefly investigated, at least six are of rather high quality and need special protection. Also, as mentioned under the description of existing water quality earlier in the report, headwater streams in the watershed are being threatened by development impacts to the extent that the loss of integrity of these streams will prevent the Blacklick Creek mainstem from fully attaining its water quality standards.

Ohio EPA is currently investigating means of further protecting these headwater streams. In the Ohio EPA fact sheet “Clean Rivers Spring from Their Source: The Importance & Management of Headwater Streams”, which focuses on streams in watersheds with less than a square mile of drainage area, it states that there is a wide range of activities that can result in the degradation of primary headwater streams. Smaller streams tend to be more susceptible to the direct effects of nonpoint sources of pollution than larger streams. This may be partly because primary headwater streams form the principal boundary between land and water resources. They collect water, sediment, energy, chemicals and other inputs from the surrounding land which then flow into larger streams. Hydro-modification (activities that result in habitat degradation such as channelization and riparian vegetation removal) is the leading source of impairment and is the origin of habitat degradation, nutrients and silt found in smaller streams and the larger streams into which they flow.

At this time, it appears that only two governmental entities - Licking County and Jefferson Township (Franklin County) - within the Blacklick Creek basin actually have regulations or land use policies providing some protection for these small headwater streams.

The easiest way to aid in protecting these headwater streams is to preserve their riparian buffer. This includes eliminating channelization or culverting of existing streams and ensuring stream flows are not diminished throughout the watershed.

Another factor which needs to be considered in planning future wastewater collection and treatment facilities in the watershed is the importance of maintaining an adequate hydrologic flow regime within the watershed. Blacklick Creek and its tributaries will lose ground water recharge as construction and development brings about an increase in impervious surfaces. The maintenance of stream flows through such means as direct wastewater discharges, ground water recharge via wastewater effluent spray irrigation systems and post construction BMPs at development sites that promote ground water infiltration of runoff should be evaluated.

## 5 Wastewater Management Agencies and Implementation Measures

Once Ohio EPA updates the 208 plan for the Central Scioto Basin and it is adopted, certified and submitted to U.S. EPA for approval, the designated management agencies, their facility planning area boundaries and/or service areas and the identified wastewater management options, become part of the Water Quality Management Plan. Ohio EPA's decisions concerning NPDES permits, permits to install and State Revolving Fund loans for wastewater treatment must be consistent with the Water Quality Management Plan. State Water Quality Management Plans are to identify management agencies and their implementation measures to carry out the plan. This section of the Central Scioto Water Quality Management Plan Update does this for the wastewater treatment needs in the Columbus metropolitan area.

### 5.01 Columbus Facility Planning Area

The initial Columbus Metropolitan Facilities Plan for wastewater management was submitted by Columbus in 1976 and updated in 1984. The narrative and accompanying supporting maps submitted by the City of Columbus in November 2000 constitute the latest Columbus Metropolitan Facilities Plan Update and its goal is to address regional wastewater management needs through 2020.

The facility planning boundary contained in the *Columbus Metropolitan Facility Plan Update (CMFP, Columbus Metropolitan Facility Planning Area (Columbus Metropolitan Facility Plan Update (CMFP), Malcolm Pirnie 2000) November 2000)* is hereby incorporated into the Central Scioto Water Quality Management Plan update. In addition to the City of Columbus system, Canal Winchester, Pickerington, Jefferson Township Water and Sewer District, Southwest Licking Community Water and Sewer District, Union County, Fairfield County and Ohio-American Water Company also provide service within the FPA. Each of these centralized systems has identified the area for which each expects to provide service within the next twenty years. The composite of those service areas is shaded yellow on the Columbus Metropolitan Facilities Plan Update base map. (Appendix 1, Fig. 2). Based on the information in these plans, each of the current service providers has been designated to serve the current and future service areas (see Section 5.02). The facility planning boundary and the service areas for each community are shown in Appendix 1, Fig. 9. See Sections 4.02.08 and 4.03.04 for narrative descriptions of overlapping areas not depicted in Appendix 1, Fig 9. The provisions made in the *CMFP* regarding on-site treatment of wastewater from new development in areas where central sewers are not presently available have been modified slightly and appear in Section 5.01.01 and Appendix 15.

The revised FPA boundary and the service areas delineated in this plan replace the previous boundaries identified in the 208 plan for the Scioto River Basin. Current service providers have lead responsibility for sewer planning within their established services areas subject to the optional procedures described in Section 5.03. The designated management agencies identified in Section 5.02 are allowed to restrict the wastewater treatment alternatives available in their current and future service areas. The restrictions imposed by these providers in their respective service areas are described in Section 5.02.

In overlapping service areas, as set forth in Section 5.02, the available wastewater treatment alternatives will be based upon any option made available by any one of the designated service providers to that area. Ohio EPA encourages the elimination of the overlapping service areas in future updates to the Water Quality Management Plan. If two POTWs compete for the same customers, the duplication of service could be cost prohibitive, could result in plant operation problems, or both. In addition, expansion of existing plant capacities based on customers located in overlapping service areas could result in excess capacity that may never be utilized.

Where two or more service providers have overlapping service areas, Ohio EPA will review and act upon approvable permit applications for extending sewer collection into the overlap area on a first come, first served basis. Applicants are hereby cautioned that hastily prepared and incomplete applications will not be accepted by Ohio EPA. The date for consideration relative to first come/first served shall be the date when the Agency takes receipt of a complete set of plans and specifications that leads to an approvable permit.

#### 5.01.01 New development with on-lot Sewage Treatment and Disposal

While the majority of the Columbus Metropolitan Facility Planning Area already has central sewers and more central sewers will be built in the future, the CSPU also addresses the situation of new development in areas without immediate access to central sewers. As mentioned above, for large scale developments the designated management agencies may restrict the wastewater treatment alternatives available in their current and future service areas (see Section 5.02). Home building on individual lots and small subdivisions will continue to be regulated through the appropriate local health department review and approval of on-lot disposal systems (see Section 4.06). Pursuant to existing regulations (Ohio Administrative Code (OAC) 3701-29-03(B)) HSTDS for new subdivisions can be installed only when, as determined by the local health departments and Ohio EPA, a central sewage system is impracticable or inadvisable. Under the CSPU, home building on individual lots and small subdivisions may continue to employ HSTDS provided that: 1) a central sewage system is impracticable or inadvisable; and, 2) that lot size, soils and other factors such as overall housing density in the area support the conclusion that sanitary and water quality conditions are not threatened by failed HSTDS. Ohio EPA will continue to make case by case determinations on this matter and inform health departments and those seeking to develop new subdivisions. When replacing failed HSTDS the first choice will always be to connect to central sewers if they are available, or alternatively, to install a new on-lot disposal system; however, if these options prove infeasible, then a replacement system that discharges off-lot will be allowed if approved by the local health department and compliant with standards set forth in OAC 3701-29.

Wastewater generated by commercial and institutional establishments will continue to be regulated by Ohio EPA under the permit to install program set forth in ORC 6111.44 et. seq. and OAC 3745-31. Appendix 15 provides guidance relative to the system specifications the Agency is likely to consider approvable in the Columbus Metropolitan Facility Planning Area. Adherence to this guidance allows continued development of modestly-sized commercial and institutional establishments, ensures that these

establishments have adequate sewage treatment and disposal facilities, and that such development connects to central sewers when they become available.

## **5.02 Designated Management Agencies**

Within the Columbus Facility Planning Area being adopted in this CSPU there are nine distinct sewer service areas (service areas), some of which have overlapping territory (see Appendix 1, Fig. 9). Eight governmental jurisdictions and one private utility company are responsible for planning and providing sewage collection and treatment as described in this section. In addition, the Village of Carroll is a designated management agency which owns a municipal wastewater facility within the Fairfield County, Little Walnut service area (see Sections 4.01.06 and 5.02.04). Note that DMA responsibilities and special provisions described for the Southwest Licking Community Water and Sewer District and Union County (Sections 5.02.08 and 5.02.09, respectively) are applicable within the Columbus FPA portions of their legally established sewer district boundaries.

Responsibility for sewage collection systems (installation, repair and routine maintenance) rests with the nine primary DMAs and within the Columbus service area, several additional contract communities (see Section 5.02.04). Local health departments approve sewage treatment and disposal systems for individual homes and, within the Franklin County portion of the FPA, the Franklin County Board of Health requested recognition as a Designated Management Agency for this role.

### 5.02.01 Canal Winchester Area

#### *5.02.01.01 Service provided*

This area is currently served by centralized sewers operated by the Village of Canal Winchester. Wastewater collected in the Village of Canal Winchester shall be conveyed to Canal Winchester's existing and/or future publicly owned treatment works for treatment and discharge. Except for territory that overlaps with another service provider, Canal Winchester has the lead responsibility for sewer planning within the Canal Winchester service areas (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03. For overlapping service territory, Canal Winchester may also provide services in identified expansion areas on a non-exclusive basis.

Because the Village of Canal Winchester system provides service to the Village of Lithopolis, the designated management agency assignment given to the Village of Lithopolis in the 1993 State Water Quality Management Plan Certification is no longer appropriate (see Appendix 4).

Such service shall continue unless or until Canal Winchester desires to connect its system to the City of Columbus sewer system or another centralized sewer system serving a watershed inside the Facilities Planning Area boundary. Such connection shall occur in a manner that is mutually agreeable to both systems.

#### *5.02.01.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the Village of Canal Winchester sewer system when the Canal Winchester system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

The Village of Canal Winchester has determined that all new development in its service area will be served through connection to, or expansion of, the existing centralized sewage collection and treatment system. The Village will not consider or build new wastewater treatment facilities designed to serve individual or small clusters of new development. This applies to conventional WWTPs (e.g., package plants) that discharge to a receiving stream and to alternative “non-discharging” systems that land apply treated effluent. Either option, in the view of the responsible DMA (Canal Winchester), leads to unwanted growth patterns, because such treatment systems result in high density development in the outlying reaches of the service area and that can place undue stress on other necessary services. Furthermore, land application alternatives have limitations posed by hydric soils and the DMA believes such systems could be prone to operational difficulties.

#### 5.02.02 City of Columbus and Satellite Collection Systems

##### *5.02.02.01 Service provided*

All areas within the Facilities Planning Area boundary may at some point in the future be served by the City of Columbus sewer system. With the exception of those areas particularly enumerated elsewhere in Section 5.02, Columbus has the lead responsibility for sewer planning within the FPA subject to the optional procedures in Section 5.03. All service areas within the Columbus service area that do not overlap with another service area shall be served exclusively by extending sanitary trunk sewers and branch sewers into the area, subject to the optional procedures in Section 5.03. Wastewater collected from the Columbus service area shall be conveyed to either the Jackson Pike or Southerly Wastewater Treatment facilities or any future wastewater treatment plant owned and operated by the City of Columbus for treatment and discharge.

##### *5.02.02.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the City of Columbus sewer system when the Columbus system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing non-centralized wastewater treatment systems may continue to operate with existing

sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

The City of Columbus has determined that all new development in its service area will be served through connection to, or expansion of, the existing centralized sewage collection and treatment system. The City will not consider or build new wastewater treatment facilities designed to serve individual or small clusters of new development. This applies to conventional WWTPs (e.g., package plants) that discharge to a receiving stream and to alternative “non-discharging” systems that land apply treated effluent. Either option, in the view of the responsible DMA (City of Columbus), leads to unwanted growth patterns, because such treatment systems result in high density development in the outlying reaches of the service area and that can place undue stress on other necessary services. Furthermore, land application alternatives have limitations posed by hydric soils and the DMA believes such systems could be prone to operational difficulties.

#### *5.02.02.03 Environmentally Sensitive Development Area (ESDA)*

This area is particularly sensitive to negative impacts from development because it is located within the Darby Creek watershed (a State and National Scenic River system) and because of the presence of extensive hydric soils and minimal slope. Of particular concern is the potential for wastewater and storm water pollution that would come without properly controlled growth. Creation of the Environmentally Sensitive Development Area (ESDA) is consistent with the 1993 Columbus Comprehensive Plan’s provision for an Environmental Conservation District. Other recent events that illustrate the recognition and community-based desire to address these problems are the 2002 Hellbranch Watershed Forum Cooperative Agreement and the City of Columbus Hellbranch Overlay (zoning ordinance 0856-02).

Unplanned and uncontrolled growth poses a threat to the Darby Creek watershed and the unique biodiversity of its aquatic and prairie land ecosystem. It is recognized that some future development of this area will occur. While the City of Columbus will ultimately provide centralized service within a portion of it, as described in Section 5, no service whatsoever shall be provided within the ESDA until the following conditions are met for the area to be served: 1) riparian buffer restrictions are in place; 2) comprehensive storm water management planning has occurred; 3) conservation development restrictions are in place which involve the concept of clustering development to preserve tracts of open space, including farmland; and 4) adequate public facilities, including roadways, exist or are planned to support any proposed development. The geographic extent of the ESDA is shown on a map in Appendix 1, Figure 2.

The City of Columbus will convene an External Advisory Group (EAG) composed of diverse stakeholders within the ESDA. This EAG will operate using a process based on the Ohio

Environmental Protection Agency EAG model. The EAG will be tasked with studying and recommending criteria or standards by which fulfillment of each protective condition could be measured. The non-binding recommendations will be forwarded to the Director of the Ohio EPA and the Director of Public Utilities for the City of Columbus.

At least all of the following stakeholders, having commented upon the draft Columbus Metropolitan Facilities Plan Update, will be invited to participate in this process: Brown Township, Norwich Township, Pleasant Township, Prairie Township, the City of Hilliard, the City of Grove City, Franklin County, Franklin County Soil and Water Conservation District, Metroparks, the Building Industry Association of Central Ohio, the Nature Conservancy, Darby Creek Association, Ohio Environmental Council and Central Ohio Sierra Club, as well as other interested stakeholders. Other organizations that will be contacted and invited include the Franklin County Board of Health, Darby Creek Watershed Joint Board of Supervisors, Ohio State University Extension, Ohio DNR and Ohio EPA. The City of Columbus will provide information and staff to the EAG. The City of Columbus will retain ultimate authority for all operational decisions relating to its municipal utilities. The Director of Ohio EPA will determine if the EAG recommendations are sufficient to protect water quality and will update the CSPU accordingly. The City of Columbus will convene the EAG no later than February 1, 2003 and shall conclude its work and submission of recommendations no later than 18 months after convening, unless an extension of time is granted by the Director of Ohio EPA

#### *5.02.02.04 Contract Communities or Satellite Collection System DMA roles*

The City of Columbus and numerous other governments have entered into contractual agreements for water and sewer services. While these areas are within the Columbus sewer service area and wastewater treatment is provided at the Columbus facilities, the majority of these communities own the collection sewers within their jurisdictions and perform sewer maintenance. A recent Consent Order between Columbus and Ohio EPA identified these satellite collection systems (see Table 8). During the public comment period on the CSPU, two municipal communities requested to be recognized as Designated Management Agencies responsible for their respective collection systems. The cities of Gahanna and Grove City are so recognized as DMAs in Table 8. Future updates to the CSPU will examine which other satellite collection systems should also be DMAs for sewage collection.

Table 8. Central Ohio suburban communities that were listed as satellite collection systems in Exhibit 1 of the Consent Order (City of Columbus and Ohio EPA), plus the governmental entities that have agreed to become Designated Management Agencies (DMA) for sewer collection system maintenance within the Columbus service area.

Satellite Collection Systems	DMA, Local Governmental Department responsible for sewer maintenance	sanitary sewer lines (miles)
Bexley	no - assess in next update	not available
Brice	no - assess in next update	not available
Dublin	no - assess in next update	not available
Gahanna	Yes - Water and Sewer Division	159.8
Grandview	no - assess in next update	not available
Grove City	Yes - Public Service	82.3
Groveport	no - assess in next update	not available
Hilliard	no - assess in next update	not available
Lockbourne	no - assess in next update	not available
Jefferson Water & Sewer District *	Yes - Jefferson Water & Sewer District	not available
Marble Cliff	no - assess in next update	not available
Minerva Park	no - assess in next update	not available
New Albany	no - assess in next update	not available
Obetz	no - assess in next update	not available
Reynoldsburg	no - assess in next update	not available
Shawnee Hills	no - assess in next update	not available
Upper Arlington	no - assess in next update	not available
Urbancrest	no - assess in next update	not available
Westerville	no - assess in next update	not available
Whitehall	no - assess in next update	not available
Worthington	no - assess in next update	not available
Franklin County Areas **	no - assess in next update	not available

\* not listed as satellite collection systems in Consent Order

\*\* The Franklin County areas are: Briarbank, Briarwood Hills, Forest Ridge, Franklin County Landfill, Franklin County Model Landfill, Hamilton Meadows, Linclon Village / New Rome, Ridgewood Estates, Timberbrook, Village Park, Windsong, Worthington Hills, Young Estates

### 5.02.03      Fairfield County - Tussing Road Service Area

#### *5.02.03.01*    *Service provided*

This area is currently served by centralized sewer operated by the Fairfield County Water and Sewer District. Wastewater collected in this portion of Fairfield County shall be conveyed to Fairfield County Water and Sewer District's existing and/or future publicly owned treatment works for treatment and discharge. Planning and design work is underway to redirect a portion of the Tussing Road service area to the new Sycamore Creek Water Reclamation Facility. Fairfield County has the lead responsibility for sewer planning within the Tussing Road service area (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03. Ohio EPA has committed to further discussions with Fairfield County regarding the lock-in of the service area<sup>2</sup>.

Such service shall continue unless or until the sewer district desires to connect its system to the City of Columbus sewer system. Such connection shall occur in a manner that is mutually agreeable to the City of Columbus and the sewer district.

#### *5.02.03.02*    *Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the Fairfield County Water and Sewer District sewer system when the system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

While acknowledging that providing service through its main centralized system is typically preferred, Fairfield County has decided to retain the flexibility to consider and allow service to new development in its service area by means other than connection to the existing centralized sewage collection and treatment system. However, the Ohio EPA has taken a position that no spray irrigation systems and other land application systems will be permitted in the Columbus Metropolitan Facilities Planning Area until Ohio EPA establishes specific rules for the regulation of the land application of treated sewage (see Section 5.03.05).

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<sup>2</sup> A set of seven facility planning documents was submitted to Ohio EPA on March 29, 2002 and are currently under review.

## 5.02.04 Fairfield County - Little Walnut Service Area / Carroll Service Area

### *5.02.04.01 Service provided*

This area is currently served by centralized sewer operated by the Fairfield County Water and Sewer District. The Village of Carroll owns a wastewater treatment and collection system that serves approximately 700 residents within its corporate limits and has contracted the operation of these facilities to Fairfield County. Wastewater collected in all other areas of the Little Walnut service area is currently conveyed to Fairfield County Water and Sewer District's existing publicly owned treatment works, the Little Walnut Regional Water Reclamation Facility, for treatment and discharge. Fairfield County has the lead responsibility for sewer planning within the Little Walnut service area (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03. Ohio EPA has committed to further discussions with Fairfield County regarding the lock-in of the service area<sup>3</sup>.

Such service shall continue unless or until Fairfield County desires to connect its system to the City of Columbus sewer system or another centralized sewer system serving a watershed inside the Facilities Planning Area boundary. Such connection shall occur in a manner that is mutually agreeable to both systems. Wastewater collected in this area through future conveyance systems shall be conveyed to either Fairfield County Water and Sewer District's, Pickerington's, or Canal Winchester's existing or future wastewater treatment plants.

### *5.02.04.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to a centralized wastewater treatment system when such system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

While acknowledging that providing service through its main centralized system is typically preferred, Fairfield County has decided to retain the flexibility to consider and allow service to new development in its service area by means other than connection to the existing centralized sewage collection and treatment system. However, the Ohio EPA has taken a position that no spray irrigation systems and other land application systems will be permitted in the Columbus Metropolitan Facilities Planning Area until Ohio EPA establishes

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<sup>3</sup> A set of five facility planning documents was submitted to Ohio EPA on March 29, 2002 and are currently under review.

specific rules for the regulation of the land application of treated sewage (see Section 5.03.05).

#### 5.02.05 Jefferson Water and Sewer District

##### *5.02.05.01 Service provided*

A portion of this area is currently served by the centralized sewer system operated by the Jefferson Water and Sewer District. Wastewater collected in this area is currently conveyed to Jefferson Township Water and Sewer District's existing publicly owned treatment works for treatment and discharge. Ohio EPA has committed to further discussions with JWSD regarding the lock-in of a service area<sup>4</sup>. Such service shall continue to the existing and/or future publicly owned treatment works unless or until the sewer district desires to connect its system to the City of Columbus sewer system. Such connection shall occur in a manner that is mutually agreeable to the City of Columbus and the sewer district.

Section 4.02.10 describes a recently signed contract agreement that will lead to the abandonment of the District's two wastewater treatment facilities and the connection to the City of Columbus. The District will retain ownership and maintenance of the collection systems (see Table 8, Section 5.02.02.04). The contract includes a defined sewer service area that is hereby incorporated in the CSPU (see Appendix 1, Figure 10). Wastewater collected in this area through future conveyance systems shall be conveyed to the City of Columbus' existing or future wastewater treatment plants. All sources of domestic sewage from homes and small businesses outside of the service area in Appendix 1, Figure 10, but within the boundaries of the Jefferson Water and Sewer District, have these options: 1) providing treatment with Franklin County approved HSTDS or on-lot commercial systems approved by Ohio EPA, or 2) obtaining sewer service from Columbus or its contract communities. Under Ohio EPA's authority to investigate unsanitary conditions and order corrective action, the Jefferson Water and Sewer District could be ordered to abate the pollution. Section 11(b) of the contract between the District and the City of Columbus states that the sewer service boundaries shall be reviewed upon a showing of good cause, including but not limited to, a request from the Ohio EPA or the Health Department. If any such revisions to the District's sewer service area are made they shall, upon agreement of the City of Columbus, the District and Ohio EPA, be considered an update to the CSPU.

##### *5.02.05.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the Jefferson Water and Sewer District sewer system or the City of Columbus sewer system, directly or through a

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<sup>4</sup> An *Updated Detailed Facilities Plan for Wastewater Management in Jefferson Township, Ohio*, April 2002, was submitted to Ohio EPA on April 26, 2002. Review of this material is on hold based on the contractual sewer service agreement between Columbus and the District.

contracting municipality, when either system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

#### 5.02.06      Ohio-American Water Company

##### *5.02.06.01 Service Provided*

Ohio-American Water Company (formerly Citizen Utility Company of Ohio) owns and operates three wastewater treatment facilities in the Columbus Metropolitan Facility Plan Area that serve the residential subdivisions of Blacklick Estates, Lake Darby Estates and Huber Ridge. Ohio-American Water Company has the lead responsibility for operation and maintenance of the sewer collection system and the wastewater treatment systems in place at these subdivisions. Such current service shall continue unless or until the utility desires to connect its system to the City of Columbus sewer system. Such connection shall occur in a manner that is mutually agreeable to the City of Columbus and the Ohio-American Water Company.

#### 5.02.07      Pickerington Area

##### *5.02.07.01 Service provided*

This area is currently served by centralized sewers operated by the City of Pickerington. Wastewater collected in the City of Pickerington shall be conveyed to Pickerington's existing and/or future publicly owned treatment works for treatment and discharge. Except for territory that overlaps with another service provider, Pickerington has the lead responsibility for sewer planning within the Pickerington service area (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03. For overlapping service territory, Pickerington may also provide service in identified expansion areas on a non-exclusive basis. Fairfield County Utilities currently provides sanitary sewer services within the corporate boundary of the City of Pickerington. Fairfield County will continue to serve those areas currently served within the corporate boundary.

Such service shall continue unless or until Pickerington desires to connect its system to the City of Columbus sewer system or another centralized sewer system serving a watershed inside the Facilities Planning Area boundary. Such connection shall occur in a manner that is mutually agreeable to both systems.

##### *5.02.07.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the Pickerington sewer

system when the Pickerington system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

The City of Pickerington has determined that all new development in its service area will be served through connection to, or expansion of, a centralized sewage collection and treatment system. The City will not consider or build new wastewater treatment facilities designed to serve individual or small clusters of new development. This applies to conventional WWTPs (e.g., package plants) that discharge to a receiving stream and to alternative “non-discharging” systems that land apply treated effluent. Either option, in the view of the responsible DMA (City of Pickerington), leads to unwanted growth patterns, because such treatment systems result in high density development in the outlying reaches of the service area and that can place undue stress on other necessary services. Furthermore, land application alternatives have limitations posed by hydric soils and the DMA believes such systems could be prone to operational difficulties.

#### 5.02.08 Southwest Licking Community Water and Sewer District

##### *5.02.08.01 Service provided*

A portion of this area is currently served by a centralized sewer system operated by the Southwest Licking Community Water and Sewer District (SLCWSD). Wastewater collected in this area is currently conveyed to SLCWSD’s existing publicly owned treatment works for treatment and discharge. The District has the lead responsibility for sewer planning within its established service area (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03.

Such service shall continue to the existing and/or future publicly owned treatment works unless or until the sewer district desires to connect its system to the City of Columbus sewer system. Such connection shall occur in a manner that is mutually agreeable to the City of Columbus and the SLCWSD. Wastewater collected in this area through future conveyance systems shall be conveyed to either SLCWSD’s or the City of Columbus’ existing or future wastewater treatment plants.

##### *5.02.08.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the SLCWSD sewer system or the City of Columbus sewer system when either sewer system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with

existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

The SLCWSD has determined that all new development in its service area will be served through connection to, or expansion of, the existing centralized sewage collection and treatment system. The District will not consider or build new wastewater treatment facilities designed to serve individual or small clusters of new development. This applies to conventional WWTPs (e.g., package plants) that discharge to a receiving stream and to alternative “non-discharging” systems that land apply treated effluent. Either option, in the view of the responsible DMA (SLCWSD), leads to unwanted growth patterns, because such treatment systems result in high density development in the outlying reaches of the service area and that can place undue stress on other necessary services. Furthermore, land application alternatives have limitations posed by hydric soils and the DMA believes such systems could be prone to operational difficulties.

#### 5.02.09      Union County

##### *5.02.09.01 Service provided*

The unincorporated areas of Union County are currently served by individual sewage disposal systems or public sanitary sewers owned by the Union County Sewer District. This area is also included in a service contract between the City of Columbus and the City of Dublin. Union County and the cities of Dublin and Columbus have joint responsibility for sewer planning within the Union County portion of the Columbus FPA (Appendix 1, Fig. 9), subject to the optional procedures described in Section 5.03.

Wastewater collected in the Union County public sanitary sewers is currently conveyed to the City of Marysville for treatment and discharge to Mill Creek. Such service shall continue until such time as Union County selects a different means for treating its wastewater. If Union County desires to convey its wastewater to the City of Columbus for treatment, such conveyance and treatment shall occur in a manner that is mutually agreeable to the City of Columbus and Union County.

Wastewater collected in this area through future conveyance systems shall be conveyed to either the City of Marysville or some other publicly owned wastewater treatment plant designated by the Union County Sewer District through Union County Sewer District conveyance systems or the City of Columbus’ existing or future wastewater treatment plants.

##### *5.02.09.02 Other Provisions or Restrictions*

Existing (developed) commercial, industrial, institutional and residential properties within the area that are currently served by properly permitted and operating non-centralized wastewater treatment systems, shall be required to connect to the Union County Sewer

District sewer system or the Columbus sewer system when either sewer system is extended to within 200 feet of the serviced structure. Until centralized sewers are within 200 feet of the existing serviced structure, such existing (developed) properties may continue to operate with existing non-centralized sanitary facilities so long as those facilities are properly permitted for existing flows by the appropriate health department and/or the Ohio EPA. These provisions do not define or replace any applicable requirements under Chapters 3745-31 and 3745-33 of the Administrative Code for permits to install and NPDES permits, respectively. The flows to such existing non-centralized sanitary facilities, however, may not be expanded or increased.

While acknowledging that providing service through its main centralized system is typically preferred, Union County has decided to retain the flexibility to consider and allow service to new development in its service area by means other than connection to the existing centralized sewage collection and treatment system. However, the Ohio EPA has taken a position that no spray irrigation systems and other land application systems will be permitted in the Columbus Metropolitan Facilities Planning Area until Ohio EPA establishes specific rules for the regulation of the land application of treated sewage (see Section 5.03.05).

#### 5.02.10 Franklin County Board of Health

The Franklin County Board of Health (FCBH) has the legal authority and obligation to review and permit the home sewage treatment and disposal systems (HSTDS) for one, two and three family dwellings in Franklin County. The Board and staff have demonstrated leadership in the areas of assessing unsanitary conditions caused by failing HSTDS, working to find solutions and establishing sound criteria for the installation of new systems. The FCBH submitted a letter of comment on the draft CSPU and requested that the Board of Health be named as the Designated Management Agency relative to HSTDS. In addition to carrying out its legal obligations for the review and permitting of HSTDS, the FCBH has indicated its intention to prepare and submit a 20-year plan to protect watersheds from the impacts of HSTDS. The focus will be in areas of Franklin County not likely to be serviced with central sewers in the immediate future and will include the long-range correction plan for upgrading failed systems.

### **5.03 Other Options and Protocol to Revise the Plan**

#### 5.03.01 Modifications to the Facility Planning Area and Service Areas

Current service providers have lead responsibility for sewer planning within their established service areas. However, the Columbus FPA and service areas established in the preceding sections are subject to the optional provisions described below. Ohio EPA must approve all future changes to the FPA boundary or service areas. Ohio EPA must also approve all new FPAs or service areas. Changes that are based upon the options described in this section will be effective on Ohio EPA approval and will be reflected in the next plan update.

### 5.03.02      Opting out of a service area

As stated, current service providers have primacy (i.e., lead responsibility) for sewer planning in those areas designated in Section 5.02, but that primacy is not absolute. A request of an applicant to opt out of a recognized FPA or service area is open to consideration. Each application will be evaluated using the process discussed in this section.

In cases where central sewers are needed to comply with an Ohio EPA order to resolve an existing water quality problem, the designated service provider's primacy standing would be dependent on its ability and willingness to proceed with the sewer extensions and capacity upgrades if necessary. If the designated service provider is not prepared or is not able to proceed in a timely manner, the applicant for change can request a redrawing of, or Ohio EPA can redraw the FPA or service area boundary.

An applicant can petition the Ohio EPA to opt out of a service area. The petition must contain information that establishes all of the following:

- a) that the existing service provider for that service area is unprepared or is unwilling to extend service to the challenged area, or that they have conditions that are unacceptable to the applicant community or entity;
- b) that an alternative sewerage plan exists that protects the environment and that the alternative plan is technically achievable, economically justifiable and supported by the affected local government(s)<sup>5</sup> with jurisdiction over the area; and
- c) that the proposed DMA has the legal authority to act.

If the petition is consistent with all other aspects of the Water Quality Management Plan, it can result in a change being made to the existing FPA and/or designated future service areas in favor of the petitioner.

The designated service provider(s) identified in the *CMFP* which control the service area in question may object to the applicant opting out. Objections will be sustained if the designated provider can demonstrate any of following:

- a) that system affordability or financial viability of designated service provider(s) identified in the *CMFP* would be negatively impacted by the suggested change. Demonstrations of economic harm need to show that established federal guidelines for wastewater treatment affordability will not be met by the designated service providers identified in the *CMFP* if the application for change is allowed to proceed;

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<sup>5</sup> County government endorsement would be necessary and presumed to exist in situations where the applicant is a ORC 6119 county sewer district.

- b) that system efficiency, defined as the ability of designated service provider(s) identified in the *CMFP* to meet its NPDES permit limitations, would be compromised by the suggested change;
- c) the change would result in a violation of a condition of a Section 201 Facilities Construction Grant received through the U.S. EPA or a provision of a State Revolving Fund Loan administered by the Ohio EPA; or
- d) the designated service provider(s) identified in the *CMFP* commits to comparable service for the area.

Ohio EPA will provide for a meeting with all affected parties in an attempt to effect a consensus agreement. When consensus cannot be reached, Ohio EPA will hear all viewpoints and render a decision. Ohio EPA's action on such requests will constitute an update to the Water Quality Management Plan as far as future consistency reviews are concerned in the challenged area.

#### 5.03.03 Lock-in of Service Areas

A current or proposed service provider can "lock-in" its service area, thereby preventing anyone from utilizing the opt out procedures discussed above. This optional step may be pursued by a service provider through preparing and submitting for review and approval a detailed facility plan that sets forth a specific sewer service analysis. This document should include an indication of where and when sewers would be built in an area and commitments to serve the area according to a plan and schedule based upon 20-year population projections. An outline of the content of such a facility planning document is set forth in Appendix 12. If this option is pursued, Ohio EPA will promptly notify the service provider of any deficiencies in their proposal.

It is important to note that territory cannot be "locked in" for future service under this mechanism unless the consent of the local government jurisdiction is obtained (see Appendix 12, item 6.3). Consent will be needed from the affected township, the affected sewer district if one exists and the County. However, in the event that land is annexed to a municipality, the annexation law and other applicable legal authorities will determine whether and how such annexed land is serviced.

Item 6.4 in Appendix 12 provides benchmarks for the assessment of the service provider's financial condition. Ohio EPA's decision relative to the lock-in of service areas will consider the positive and negative financial impacts all affected DMAs.

For overlapping service areas, Ohio EPA will review and act upon facility plans for locking in a service area on a first come, first served basis, meaning that once documents are submitted, the first entity that has its facility plan approved by Ohio EPA will obtain the service area "lock-in". Once such a facility plan is submitted and found to be sufficient to lock-in a service area, Ohio EPA will update the 208 plan to reflect this information. Applicants are hereby cautioned that hastily prepared and incomplete applications will not

be accepted by Ohio EPA. The date for consideration relative to first come/first served shall be the date when the Agency takes receipt of a complete set of plans and specifications that leads to an approvable permit. In addition, the requirement that the applicant must have the consent of local jurisdictions to lock-in territory should discourage applicants from hastily preparing applications.

The Jefferson Water and Sewer District, Fairfield County, Licking County and New Albany indicated at the time the draft plan was released (May 2002) that they have facility planning and other planning documents that they intend to submit for Ohio EPA's consideration.

#### 5.03.04 Areas Designated as "On-Site Systems Only"

Townships are granted the ability to maintain the rural character of territory within their political jurisdiction. Several townships have comprehensive plans that include zoning mechanisms designed to accomplish their desired growth patterns. If the Board of Township Trustees has established zoning that controls the density of development, the township may petition Ohio EPA to recognize in the 208 plan zoning that restricts wastewater treatment options to individual on-site systems in the township or a portion thereof. By identifying the areas that have no plans for sewer extensions in the next 20 years, jurisdictions notify all landowners of the need for them to plan for the installation and maintenance of on-site systems. In areas where sanitary sewers are likely to be extended, repair and maintenance of problematic on-site systems may be warranted instead of total system replacement. In all cases, landowners are provided notice by the 208 update to consult with local government officials before proceeding with their wastewater plans. Ohio EPA's recognition in the 208 plan of areas designated as "on-site systems only" should not be construed as an endorsement of the use of on-site septic systems for any particular area, but rather the Agency is simply reflecting the land use planning that has already occurred.

Several conditions must be met in order to designate an area as "on-site systems only." The county health department or other applicable health department responsible for managing on-site systems must authorize their use in the area specified in the petition. This authority must not approve HSTDS that discharge to surface waters or storm sewers. The provisions of ORC 6111 and OAC 3701-29-02 (L&M) that require connection to sanitary sewers when they become available must be complied with. The designation of an area as "on-site systems only" applies once granted as long as Ohio EPA does not mandate sewers under ORC 6117.34 if a water quality problem is demonstrated.

Once any area is designated as "on-site systems only" it will be removed from the future service area for the specified service provider designated under the *CMFP*.

Townships could decide to petition the Agency again in the future to switch from "on-site systems only" back to allowing central sewers if they so desire. Furthermore, the "on-site systems only" provision would immediately cease to be in effect when a parcel of land so classified is annexed to a municipality. At that point the sewer service becomes the

responsibility of the municipality and such service would be provided pursuant to the *CMFP* update and the 208 plan.

The “on-site systems” only provision, if used in conjunction with a sound township comprehensive plan, will be most effective if municipalities, counties and townships can agree upon the master land use plan set forth in the local comprehensive plan.

#### 5.03.05 Land Application of Treated Sewage

Sewage treatment and disposal systems that land apply all or a portion of the treated effluent can be a sound technology and, in certain circumstances, the technology may be the most cost-effective and environmentally sound wastewater treatment option. The generalized design of land application systems involves a centralized sewage collection system (from multiple homes or commercial/institutional establishments), the treatment and disinfection of the wastewater by proven technologies, storage of the effluent if needed and finally, the application of the treated wastewater to the land surface (typically crop land or golf courses). When these systems are designed, sited, operated and maintained appropriately, they can result in zero discharge to waters of the state, which is environmentally beneficial. In most cases the design of these systems can achieve complete or nearly complete plant or crop uptake of the nutrients present in the wastewater. When sited and operated properly they represent progressive resource stewardship by virtue of their water reuse and reclamation.

Ohio EPA has received a large amount of input as to whether such systems should be an available wastewater treatment option within the Columbus Metropolitan Facilities Planning Area. After review of these comments, Ohio EPA believes that legitimate concerns have been raised regarding the permitting of spray irrigation systems and other land application systems within the Columbus Metropolitan Facilities Planning Area and that additional regulations are needed to better control the operation and maintenance of such systems. Therefore, with two exceptions for pending applications<sup>6</sup>, which will be reviewed and acted upon based upon their technical merit, no land application of treated sewage will be permitted in the Columbus Metropolitan Facilities Planning Area until Ohio EPA establishes specific rules for the regulation of the land application of treated sewage. Ohio EPA will propose and adopt these rules by November 2003.

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<sup>6</sup> An *Updated Detailed Facilities Plan for Wastewater Management in Jefferson Township, Ohio*, April 2002, was submitted to Ohio EPA on April 26, 2002. This facility, if built, would land apply treated sewage. Review of this material is on hold based on the contractual sewer service agreement between Columbus and the District and the anticipated withdrawal of the PTI application. An application for the land application of treated sewage from the club house facility at the Landings at Rickenbacher golf course was received on July 10, 2002 (PTI # 01-10141). Review of this material is ongoing and approval is expected shortly.

## **6 Storm Water Management Agencies and Implementation Measures**

### **6.01 Addressing Water Quality Threats in the Rapidly Developing Watersheds**

The water quality analysis performed on the Blacklick Creek watershed identified intermittent flow, failing septic systems, manure laden farm field run-off from farms in the area and redirection of storm water due to new housing developments as identified causes for non-attainment within the watershed. See Section 3.04 for more details.

The Agency has already begun to address impairment that has occurred as a result of manure laden farm field run-off from farms in the area. When farm field run-off is noted during surveys and inspections, Ohio EPA coordinates closely with Soil and Water Conservation District staff who provide technical assistance to farmers to ensure proper application occurs in the future. After another release of manure into Blacklick Creek in September 2002 Ohio EPA has initiated the process to issue an NPDES permit for Hendren Farms. This will require a manure management plan and adequate controls to prevent future discharges of manure to waters of the state.

The Agency is also equipped to address unsanitary conditions that result from failing septic systems. Ohio EPA can mandate sewers under ORC 6117.34 if unsanitary conditions are demonstrated.

The most serious threats to water quality in the Blacklick Creek and other rapidly developing watersheds are impacts from storm water runoff, impervious land surfaces and stream habitat alterations. The lower segments of Blacklick Creek are at or near Warmwater Habitat attainment, but the upper reaches are already stressed and are located in a rapidly developing area. Continued construction activities and the conversion of land use from rural to suburban/commercial will degrade Blacklick Creek and its tributaries via siltation, habitat alteration and desiccation. Information from across the state indicates that attainment of Warmwater Habitat standards is seriously threatened when land use patterns in a watershed approach the level of 40 to 60 percent urban land use (see Section 4.09).

Unlike instances of manure run-off and failing septic systems, impairment from construction can be permanent in nature. Long after the construction phase of a development project is completed the impacts on runoff and infiltration remain and the cumulative effects of many development projects alter the base hydrology of the stream. Storm flows become higher and channels are eroded creating siltation problems; the stream flow maintained during drought periods becomes lower as shallow ground water infiltration is eliminated. Poor construction practices can harm stream water quality through direct channel modifications, reductions of shallow water ground water infiltration and the removal of riparian vegetation. The latter feature, natural or well-managed stream corridors, are important to filtering sediment, preventing thermal impacts and maintaining nutrient balances. The installation and maintenance of proper construction and post construction BMPs can mitigate adverse impacts. Pursuing an enforcement action after storm water violations have already occurred (i.e., a failure to install and maintain good post

construction BMPs) is inadequate because the water quality impacts have already occurred and are difficult to correct. Therefore, linkage between permit issuance and compliance with storm water regulations is appropriate. The 208 program contemplates the need to identify threats to water quality and react to them.<sup>7</sup> The technical data presented in Section 3.04 of this document provides the support that the water quality threat posed by storm water run-off needs to be addressed in the Blacklick Creek watershed.

During development of the Phase II storm water program, Ohio EPA determined that the program needed to address the issues associated to with rapidly developing watersheds. Two general storm water permits have been proposed, one general storm water permit that covers most areas in Ohio and an alternative general permit to protect streams within rapidly developing watersheds. Below is a general description of the program, regulations and permits.

#### 6.01.01 MS4 General Permits

Pursuant to the Clean Water Act, U.S. EPA issued Phase II Storm Water regulations requiring small Municipal Separate Storm Sewer Systems (MS4s) within urbanized areas, as defined by the U.S. Bureau of the Census, to apply for NPDES permit coverage by March 10, 2003. The small MS4 program addresses a select group of MS4s that serve populations less than 100,000 in urbanized areas and those that have or may have the potential to negatively impact surface water quality as a result of their discharges. An MS4 permitting program already exists for those serving populations of more than 100,000.

As a delegated NPDES permitting authority, Ohio EPA is responsible for implementing the Storm Water Phase II regulations. Ohio EPA has elected to issue two general permits for small MS4s. Both permits were issued as draft actions in July of 2002 and pending the review of public comments, should become effective in no later than December 2002. One of the draft permits is a baseline permit and the second is an alternative general permit for MS4s within rapidly developing watersheds. Both permits are very similar to a model general permit for MS4s developed by U.S. EPA in 2002. The difference between Ohio EPA's two general permits is the compliance deadline for implementation of construction and post-construction requirements. The baseline permit allows five years, whereas the alternative permit shortens this time period. Ohio EPA developed the alternative general permit to protect streams within areas that we believe are at high risk of impairment as a result of urban growth.

Applicants must submit a plan for their local storm water management program by March 10, 2003. The basic content for what a phase II storm water management plan is presented in Appendix 13 of this document.

The general permit for MS4s located within rapidly developing watersheds was intended for watersheds that are at particular risk from suburban growth. These are all moderate-

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<sup>7</sup> See 33 U.S.C. 1288(b)(2)(H); CWA Section 208(b)(2)(H).

sized streams that, when last surveyed, were supporting the Warmwater Habitat (WWH) use in at least a portion of their length. The build-out of land within these watersheds is occurring rapidly. If the percentage of land surface converted to impervious features (roofs, roads, parking lots, etc.) approaches that found in typical "urban" settings, the evidence is quite strong that the stream will no longer attain the WWH use. Therefore, this permit requires expedited implementation of local measures that promote innovative post-construction best management practices (BMPs), such as storm water infiltration techniques and riparian set backs and is clearly needed to restore the degraded segments of these streams and prevent the further loss of aquatic life use. Also, the expected intensity of construction activity also poses a higher risk of stream habitat damage caused by increased erosion, siltation and storm hydrograph alterations. Therefore, the permit requires accelerating local efforts that will promote and monitor compliance with sound construction site BMPs that address these risks.

Attributes considered in selection of watersheds were: 1) a significant portion of the streams still in full or partial attainment of aquatic life use designation; 2) evidence of increasing stress on water quality, habitat and aquatic life caused by land surface disturbances (construction activity and impervious surfaces); and 3) high rates of forecasted population growth within a significant portion of the watershed and the high probability of high density development occurring within the next several years. Of the twelve watersheds addressed by the permit, ten are found on the 2000 305(b) Report and/or the 1998 303(d) List as "impaired" or "threatened" by urban runoff and development. The remaining two watersheds were determined to be "at risk" from urban development by Ohio EPA staff. The watersheds and MS4 jurisdictions within the Columbus Metropolitan Facility Planning Area that were identified and are subject to the rapidly developing watershed MS4 general permit are listed in Table 9.

The City of Columbus will continue to be covered under its phase I storm water permit issued May 25, 2000, which addresses post construction BMPs in Part III, page 7. Under this provision of the existing permit, Columbus will begin mandatory post construction BMP implementation when adjacent phase II communities are required to implement similar post construction measures.

## **6.02 Meeting Future Needs, Implementation Measures**

Any entity that is in violation of the storm water regulations should not be able to exacerbate those violations through additional activities within its jurisdiction that do not comply with the law. The PTI regulations require the Director to determine that issuance of a PTI will not result in a violation of any applicable laws [see OAC 3745-31-05(A) (2)]. In the context of the storm water program, MS4 communities are required by law to apply for permit coverage and then implement their storm water management plan for the six minimum control measures within the time frame set in the applicable general permit. Non-compliance with the storm water regulations and permits will be deemed a conflict for purposes of the "no conflict reviews" performed under ORC 6111.03(J)(2) as well as non-compliance with the requirement set forth in OAC 3745-31-05(A)(2).

For purposes of no conflict reviews performed under ORC 6111.03(J)(2) and PTI reviews under OAC 3745-31-05(A)(2), entities will be deemed to have met or be meeting these requirements upon submission of a complete storm water management plan by March 10, 2003. Because of the greater threat to water quality, MS4 community storm water management plans in rapidly developing watersheds will receive priority review by Ohio EPA program staff to ensure timely notification of any deficiency in these plans. All MS4 communities will be deemed compliant with storm water regulations provided they have submitted the required storm water management plan on time and, if notified by Ohio EPA of any deficiencies, have corrected the problem. A notice of deficiency received on a submitted plan will trigger status as a non-complier for purposes of conformity reviews. Such status will be maintained until the deficiencies are resolved. In addition, failure to adhere to the implementation schedule proposed in the storm water management plan will trigger non-complier status. Such status will be maintained until the required actions specified in the implementation schedule have been performed.

Even where phase II storm water requirements are in place, the storm water regulations provide that a private applicant for a PTI will still need to obtain coverage under an NPDES permit for the storm water discharges associated with construction activity ("construction storm water permit"). A private applicant may still seek PTI coverage for development and construction activities in areas where a community is not in compliance with the storm water regulations. In those instances, the private applicant will need to get coverage under an individual construction storm water permit or alternate general construction storm water permit that addresses the impairment issues specific to the watershed. If an individual storm water permit has been issued, or coverage under the alternate general permit has been obtained, the PTI for that development and construction activity would not be in conflict with the 208 plan.

### **6.03 Resources to Assist the Development of Storm Water Management Plans**

The following information sources are available and contain a wide array of potential methods to address a variety of storm water management issues at the local community level.

*Darby Creek Watershed Stormwater Management Strategies and Standards (FMSM Engineers, Inc. 2001).*

Prepared by Fuller, Mossbarger, Scott, and May, Inc. in conjunction with the Center for Watershed Protection and the Darby Creek Watershed Task Force this report sets out 22 model development principles customized for the Darby watershed. Many of the principles reduce the negative impacts of impervious land surfaces and provide protection of stream corridors. Although the work was specifically customized to the Darby watershed much of the material can serve as an excellent technical resource for the development of a community storm water management plan, including the construction and post construction BMPs.

*Rapid Watershed Planning Handbook - A comprehensive Guide for Managing Urbanizing Watersheds (CWP, October 1998)*

Provides an eight point for developing effective watershed plans. It was specifically designed to cover the basics and provide a means to implement a plan within a short time frame.

*Better Site Design: A Handbook for Changing Development Rules in your Community (CWP, August 1998)*

This document provides a framework for adapting local development rules to more closely conform to with ideal model development principles that protect the aquatic environment from adverse storm water impacts.

See Section 8.0 for complete citations for these documents and information on how to obtain copies. A large number of additional resources are also available through the Center for Watershed Protection.

## **6.04 Management Agencies for Storm Water**

### 6.04.01 General Responsibilities

The designated management agencies for storm water control will implement the six minimum control measures and put in place programs that result in the installation and maintenance of BMPs pursuant to phase I and phase II of the NPDES storm water permit program. Ohio EPA has identified specific watersheds in the Columbus metropolitan area known to be at an especially high risk from the impacts associated with development and storm water management practices. These areas will receive special attention in the upcoming issuance of MS4 general permits (see Section 6.01.01).

### 6.04.02 Designated Management Agencies

Table 9 lists all the DMAs for storm water management in the Columbus FPA. Administrative rules now being finalized (OAC 3745-39) will specify whether storm water management plans must be carried out in the entire governmental jurisdiction listed, or only the in the portion of jurisdiction that lies within the urbanized area as defined via the U.S. census figures.

Table 9. Designated Management Agencies for storm water in the Columbus Facility Planning Area and identification of the watersheds within the Columbus Metropolitan FPA known to be at an especially high risk from the impacts associated with development and storm water management practices.

<b>Governmental Jurisdiction</b>	<b>Listed by U.S. EPA* and covered by draft general permit OHP000001</b>	<b>Rapidly Developing Watershed covered by draft general permit OHP100000</b>
Municipalities		
Bexley (City)	yes	none
Blacklick (Village)	no	Blacklick Creek
Brice (Village)	yes	Blacklick Creek
Columbus (City)	phase I permit	Blacklick Creek Hellbranch Run Rocky Fork
Dublin (City)	yes	none
Gahanna (City)	yes	Blacklick Creek Rocky Fork
Grandview Heights (City)	yes	none
Grove City (City)	yes	none
Groveport (Village)	yes	Blacklick Creek
Hilliard (City)	yes	Hellbranch Run
Marble Cliff (Village)	yes	none
Minerva Park (Village)	yes	none
New Albany (Village)	no	Blacklick Creek Rocky Fork
New Rome (Village)	yes	none
Obetz (Village)	yes	none
Pataskala (Village) / Lima Township	no / yes	Blacklick Creek Sycamore Creek
Pickerington (Village)	no	Blacklick Creek Sycamore Creek
Reynoldsburg (Village)	yes	Blacklick Creek
Riverlea (Village)	yes	none
Upper Arlington (City)	yes	none
Urbancrest (Village)	yes	none

<b>Governmental Jurisdiction</b>	<b>Listed by U.S. EPA* and covered by draft general permit OHP000001</b>	<b>Rapidly Developing Watershed covered by draft general permit OHP100000</b>
Valleyview (Village)	yes	none
Westerville (City)	yes	none
Whitehall (City)	yes	none
Worthington (City)	yes	none
Delaware County	yes	Blacklick Creek Rocky Fork
Delaware County Townships		
Genoa	yes	none
Harlem	yes	Rocky Fork
Orange	yes	none
Franklin County	yes	Blacklick Creek Hellbranch Run
Franklin County Townships		
Blendon	yes	none
Brown	yes	Hellbranch Run
Clinton	yes	none
Franklin	yes	none
Hamilton	yes	none
Jackson	yes	none
Jefferson	yes	Blacklick Creek
Madison	yes	Blacklick Creek
Mifflin	yes	none
Norwich	yes	Hellbranch Run
Perry	yes	none
Plain	yes	Blacklick Creek Rocky Fork
Pleasant	yes	Hellbranch Run
Prairie	yes	Hellbranch Run
Sharon	yes	none
Truro	yes	Blacklick Creek

<b>Governmental Jurisdiction</b>	<b>Listed by U.S. EPA* and covered by draft general permit OHP000001</b>	<b>Rapidly Developing Watershed covered by draft general permit OHP100000</b>
Washington	yes	none
Fairfield County	yes	Blacklick Creek Sycamore Creek
Fairfield County Townships		
Bloom	no	none
Greenfield	no	none
Liberty	no	none
Violet	yes	Blacklick Creek Sycamore Creek
Licking County	yes	Blacklick Creek Sycamore Creek
Licking County Townships		
Etna	yes	Blacklick Creek Sycamore Creek
Monroe	yes	Blacklick Creek
Jersey Twp	no	Blacklick Creek
Union County Township		
Jerome	no	none

\* Appendix 6 of Preamble - Governmental entities located fully or partially within an urbanized area. Federal Register Vol 64, No. 235 p. 68812; Community would need to seek coverage under draft permit number OHP100000.

## **7 Effluent Limitations**

Effluent limitations, including water quality based effluent limitations, are a part of water quality management plans (40 CFR 130.6(c)). Table 10 is a list of all NPDES permit holders within the Columbus FPA. Appendix 14 contains the effluent limits for these NPDES permit holders.

Table 10. A list of NPDES permit holders located within the Columbus FPA.

Entity	Major Facility Type	County	Receiving Stream	O E P A Number
Lake of the Woods Water Co.	water treatment	Delaware	Hoover Reservoir	4IV00950
Nissan North, Inc.	sanitary	Delaware	Olentangy River, UT	4PX00012
Bloom-Carroll Local School Distri	sanitary	Fairfield	Walnut Creek, SS	4PT00000
Carroll, Village of	sanitary	Fairfield	Walnut Creek, UT	4PS00015
Huntington Hills Water Reclamation	sanitary	Fairfield	Sycamore Creek	4PG00027
Little Walnut Sycamore Water Recl	sanitary	Fairfield	Walnut Creek	4PJ00101
Pickerington, City of	sanitary	Fairfield	Sycamore Creek	4PB00017
Tussing Road WWTP	sanitary	Fairfield	Blacklick Creek	4PU00004
Ultrak Inc.	sanitary	Fairfield	Walnut Creek, UT	4IN00162
AC Humko	food processing	Franklin	Olentangy River	4IH00001
Agg Rok Materials	sand & gravel	Franklin	Scioto Big Run	4IJ00020
Alton Campground	sanitary	Franklin	Big Darby Creek	4PX00041
American Aggregates Corp.	sand & gravel	Franklin	Scioto River & Scioto River	4IJ00016

American Aggregates Corp.	sand & gravel	Franklin	Scioto River	4IJ00015
ASARCO	industrial runoff	Franklin	American Ditch	4IN00017
Ashland Petroleum Company	petroleum storage	Franklin	Scioto River, UT	4IN00011
Battelle Memorial Institute	research	Franklin	Olentangy River	4IN00012
Bellaire Mobile Home Park	sanitary	Franklin	Marsh Run	4PV00103
Big Walnut Sand & Gravel, Inc.	sand & gravel	Franklin	Big Walnut Creek	4IJ00105
Blacklick Estates WWTP	sanitary	Franklin	Blacklick Creek	4PU00002
BP Exploration & Oil Inc.	petroleum storage	Franklin	Dry Run, SS	4IN00027
Buckeye Steel Castings, Inc.	foundry	Franklin	Kian Run	4IN00043
Canal Winchester, Village of	sanitary	Franklin	Little Walnut Creek	4PB00012
Capital Resins Corp.	cooling, runoff	Franklin	Kian Run, SS	4IF00011
Carter's Mobile Home Park	sanitary	Franklin	Big Run, UT	4PV00108
Celestica Corporation	cooling	Franklin	Big Walnut Creek, UT	4IC00006
Century Acres	sanitary	Franklin	Big Run	4PA00010
Certified Oil Company	GW cleanup	Franklin	Alum Creek, UT	4IN00052
CITGO Petroleum Corporation	petroleum storage	Franklin	S. Fork Indian Run, UT	4IN00048

Columbus QCB Inc.	runoff	Franklin	Blacklick Creek, UT	4IN00108
Columbus Southern Power Co.	noncontact cooling	Franklin	Blacklick Creek	4IN00147
Columbus, City of	water plant	Franklin	Big Walnut Creek	4IW00031
Columbus, City of	sanitary	Franklin	Scioto River	4PF00000
Columbus, City of	sanitary	Franklin	Scioto River	4PF00001
Columbus, City of	water treatment	Franklin	Big Walnut Creek	4IW00018
Columbus, City of	storm	Franklin	waters of the state	4PI00000
Community Gardens MHP	sanitary	Franklin	Big Darby Creek, UT	4PV00015
Countryside MHP	sanitary	Franklin	Hayden Run	4PY00006
Cypress Wesleyan Church WWTP	sanitary	Franklin	Clover Groft Ditch	4PT00115
Darby Dan Farms	sanitary	Franklin	Big Darby Creek	4PR00000
Darbydale Elementary School	sanitary	Franklin	Big Darby Creek, UT	4PT00105
Decorative Surfaces International	cooling water, runoff	Franklin	Olentangy River, SS	4IN00107
Delille Oxygen Company	cooling water	Franklin	Scioto River, SS	4IF00010
Dublin Rd. Water Trmt. Plant	water treatment	Franklin	Scioto River	4IW00030
Enchanted Acres MHP	sanitary	Franklin	Scioto River	4PH00005

Equilon Enterprises LLC	petroleum storage	Franklin	Scioto River, UT	4IN00049
Equilon Enterprises LLC	petroleum storage	Franklin	Dry Run	4IN00062
Evans Adhesive Corporation	cooling water	Franklin	Olentangy River, SS	4IN00099
Franklin International, Inc.	cooling water, runoff	Franklin	Scioto River	4IN00105
G.F.S. Chemicals, Inc.	chemical	Franklin	Scioto River, SS	4IE00006
Huber Ridge Subdivision	sanitary	Franklin	Alum Creek	4PU00000
Huber Ridge Water Treatment Facil	water treatment	Franklin	Alum Creek	4IY00042
Lake Darby Estates	sanitary	Franklin	Big Darby Creek	4PU00001
Leo Yassenoff Jewish Center Camp	sanitary	Franklin	Hoover Reservoir	4PR00004
Marathon Ashland Petroleum LLC	petroleum storage	Franklin	Scioto River	4IN00020
Marathon Ashland Petroleum Terminal	petroleum storage	Franklin	Dry Run	4IN00065
Martin Mariette Materials - Marble	sand & gravel	Franklin	Scioto River	4IJ00005
Midwest Terminal Company	petroleum storage	Franklin	Dry Run	4IN00056
National Electric Coil	cooling water	Franklin	Olentangy River	4IS00012
Oak Hills MHP	sanitary	Franklin	Big Darby Creek	4PV00008
Oakhurst Knolls Subdistrict	sanitary	Franklin	Hellbranch Run	4PH00000

ODOT Office of Aviation Fueling F	petroleum storage	Franklin	Olentangy River, UT	4IN00177
Ohio Air National Guard	runoff	Franklin	Big Walnut Creek, UT	4IN00180
Ohio State University	cooling water	Franklin	Olentangy River	4IN00189
Olen Corporation, The	sand & gravel	Franklin	Big Darby Creek	4IJ00022
Pleasant Acres Mobile Home Park	sanitary	Franklin	Big Darby Creek, UT	4PV00101
Pleasant View Middle School	sanitary	Franklin	Hellbranch Creek, SS	4PT00106
Ponderosa Mobile Home Park	sanitary	Franklin	Scioto River, UT	4PV00011
Ramada Inn South	sanitary	Franklin	Scioto River, UT	4PS00003
Rickenbacker Port Authority	runoff	Franklin	Big Walnut Creek, UT	4IN00085
S & S Aggregate	sand & gravel	Franklin	Big Walnut Creek	4IJ00023
Solid Waste Authority of Central	landfill	Franklin	Grant Run, UT	4IN00072
State of Ohio Adjutant General's	airport	Franklin	Big Walnut Creek, UT	4IN00178
Sunoco Inc R & M Columbus Terminal	petroleum storage	Franklin	Scioto River, UT	4IN00021
Sunsprout Farms of Central Ohio	food process	Franklin	Olentangy River, UT	4IN00051
T. Marzetti Company	dairy	Franklin	Scioto Big Run, SS	4IN00057
Taylor Estates	sanitary	Franklin	Rocky Fork Creek, UT	4PA00011

Techneglas, Incorporated	television mfg	Franklin	Scioto River	4IN00032
Thorn Apple Country Club	sanitary	Franklin	Clover Groff Ditch	4PX00029
Timberlake Subdivision	sanitary	Franklin	Hellbranch Run	4PU00003
Timken Company, The	cooling/storm	Franklin	Olentangy River, SS	4IS00018
Wengert Road WWTP	sanitary	Franklin	Blacklick Creek, UT	4PQ00000
Westerville, City of	water treatment	Franklin	Alum Creek, UT	4IW00150
Windrush Wastewater Treatment Fac	sanitary	Franklin	Rocky Fork Creek, UT	4PQ00001
Worthington Hills	water treatment	Franklin	Olentangy River	4IW00021

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Biological and Water Quality Study of Mason Run, 1996. Ohio EPA, 1998. \*

**How to obtain referenced documents:**

The documents denoted with an asterisk (\*) are available through the Ohio EPA web site:  
[http://www.epa.state.oh.us/dsw/document\\_index/psdindx.html](http://www.epa.state.oh.us/dsw/document_index/psdindx.html)

Publications of the Center for Watershed Protection (CWP) can be obtained through the following web site:

<http://www.cwp.org/index.html>

The following document is available in a CD format from the Ohio EPA:

FMSM Engineers, Inc. 2001. Darby Creek Watershed Stormwater Management Strategies and Standards, 2001. Prepared by Fuller, Mossbarger, Scott, and May, Inc. in conjunction with the Center for Watershed Protection and the Darby Creek Task Force. FMSM Engineers, Inc., Columbus, OH. January 2001.

All other documents must be obtained by contacting library sources or the primary author of the document.