

Appendix 9-3

208 Plan Prescriptions for  
Water Quality Protection  
within the Big Darby Creek Watershed

applicable to portions of:  
Champaign County  
Franklin County  
Logan County  
Madison County  
Pickaway County  
Union County

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## Introduction and Summary of Special Prescriptions for the Big Darby Watershed

### Background

The Big Darby Creek watershed is an important water resource in central Ohio and the entire Midwest. Natural resource professionals from private, public, and academic institutions are unanimous in citing the major streams in this watershed as among the most biologically diverse streams of their size in the Midwest. Big and Little Darby Creeks have been designated as State and National Scenic Rivers, and the watershed is known to provide habitat for several state and federally listed endangered species. Protecting this resource will require innovation and special consideration or requirements.

In the 2002 update of the Water Quality Management Plan for the Scioto River and Blacklick Creek (Central Scioto Plan Update; CSPU), section 5.02.02.03 described a special prescription (Darby prescription) for an area delineated as the Environmentally Sensitive Development Area (ESDA) which encompasses parts of the Hellbranch Run and Big Darby Creek watersheds in western Franklin County. The Darby prescription reads in part (emphasis added):

“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 setback restrictions are in place; 2) comprehensive stormwater 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 2002 CSPU required that an external advisory group (EAG) be formed to make recommendations concerning water quality in the ESDA. Representatives from municipalities within the ESDA, the Nature Conservancy, Darby Creek Association, The Ohio State University, and the Building Industry Association formed the EAG and issued a November 2004 report outlining recommendations related to riparian setbacks, stormwater management, and conservation development. The 2002 CSPU also charged the Director of Ohio EPA with the task of determining if the EAG recommendations protect water quality, and to update the CSPU with a set of criteria for riparian setbacks, stormwater, open space conservation and development.

Ohio EPA's Total Maximum Daily Load (TMDL) report for the Big Darby watershed and the development of the Darby Stormwater (SW) permit<sup>1</sup> helped to gage the sufficiency of the EAG recommendations to protect water quality. The Big Darby Creek TMDL report was approved by U.S. EPA on March 31, 2006. Approved TMDLs are part of the State's WQM Plan (see Chapter 2). The Darby SW permit was also finalized in 2006 and has been incorporated into subsequent renewals of the statewide general permit for stormwater discharges associated with construction activity. These documents provided additional context for the Agency to consider the EAG recommendations and to prepare the final special Darby prescriptions found in this appendix of the State's 208 Plan. In 2014, Ohio EPA conducted a biological and water quality survey in the Big Darby Creek watershed. Results indicate substantial recovery from impairments documented in the previous 2001 survey due, in part, to the special protections established in 2006.

#### Big Darby Accord Watershed Master Plan

In July 2004, ten local jurisdictions in western Franklin County formed the Big Darby Accord group to collaborate and develop a general land use plan capable of guiding development within the watershed in a manner that protects Big Darby Creek. Completed in July 2006, the Big Darby Accord Watershed Master Plan (or Big Darby Accord for short) recognizes and implements the stream setback provisions and land use restrictions called for in the TMDL report, the EAG report and the Darby SW permit.

#### Summary

The special Darby prescriptions for the protection of water quality in the Big Darby Creek watershed are presented in this appendix. They are necessary to protect the unique water quality and resource value of the Big Darby Creek in the face of development of the landscape. A summary of the Darby prescriptions is shown in Attachment A. Note implementation of some criteria are addressed in the Darby SW permit, and these are so indicated in Attachment A.

The 2006 State 208 Plan Appendix 9-3 included Darby prescriptions applicable only to the Franklin County portion of the watershed. The 2024 State 208 Plan Appendix 9-3 updates these Darby prescriptions and expands them to the Big Darby Creek watershed in Logan, Union, Champaign, Madison, and Pickaway Counties.

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<sup>1</sup> Throughout this appendix the shorthand phrase "Darby SW permit" refers to the Darby provisions within the General Permit for Discharges of Stormwater Associated with Construction Activity (OHC000006 and its renewals)

## **Areal Extent and Definition of Big Darby Creek Watershed**

The Big Darby Creek watershed covers 555 square miles of central Ohio just west of the Columbus metropolitan area (see Figure 1). Big Darby Creek originates in Logan County and flows more than 80 miles before joining the Scioto River near Circleville, Ohio. Portions of the following counties lie within the watershed: Champaign, Franklin, Logan, Madison, Pickaway, and Union.

The areal extent of the Big Darby Creek watershed for the purposes of this 208 Plan shall be the area designated by the United States Geological Survey as hydrologic unit codes (HUCs) 0506000119, 0506000120, 0506000121 and 0506000122 (see Figure 1) and any updates to these based on site specific information accepted by Ohio EPA. The Big Darby Creek watershed boundaries shown in Figure 1 are the best approximations that can be given with readily available information and will serve as the benchmark for an initial determination as to whether a particular parcel of land is subject to the special water quality Darby prescriptions in this appendix. Ohio EPA, an applicant for a permit, or a third party may present additional elevation data to demonstrate that surface or subsurface drainage from an area is either within or outside the Big Darby Creek watershed. A [GIS map](#) indicating areas protected by the Table 9-3 Darby prescriptions and by the Darby SW permit is available on the Ohio EPA 208 website.

Figure 1. The Big Darby Creek watershed. A more detailed map is located [here](#).



## Criteria 0 - Review of Central Sewer Line Projects

An important objective of the 208 Plan for the Big Darby watershed is to establish a clear set of environmental protection measures that should be in place to protect water quality and aquatic life as the watershed continues to face development pressure. Ohio EPA will review and act upon Permit-to-Install (PTI) applications for central sewer line projects and NPDES wastewater discharge permit applications within the watershed using the criteria in Appendix 9-3.

Preferred option - Site management standards within stream setback areas and other environmentally sensitive areas are necessary to protect the developing areas of the watershed. Local jurisdictions are expected to adopt the institutional control mechanisms described in criteria 1 to meet and implement the more specific site management criteria listed in criteria 2 and 3. Communities may choose to pursue “as protective as” site management standards. See criterion 5a regarding options on developing “as protective as” local regulations.

Central sewer line projects within the Big Darby Creek watershed will be reviewed and acted upon provided the Darby SW Permit is in effect and the local government jurisdiction(s) that will be served by the sewer line project have adopted the site recommended management criteria (see criteria 2 and 3), or alternative criteria that Ohio EPA considers to be “as protective as”. Once the existence of acceptable locally adopted implementation mechanisms are confirmed, Ohio EPA will approve central sewer line projects provided all engineering aspects of the project meet specifications and the land development project or projects associated with the sewer line extension have obtained coverage under the Darby SW Permit.

Alternative option - See criteria 5b, 6a and 6b regarding options in the absence of acceptable locally implemented regulations, or as an alternative to the technical design standards contained in the Darby SW permit. Central sewer line projects may be approved if the applicant makes acceptable provisions to put in place site management standards and technical design standards. An individual NPDES permit for discharge from construction activities may be necessary to implement this option.



## Criteria 1 - Adoption of Institutional Mechanisms

Based on the unique water quality of the Big Darby Creek watershed and development pressure in the watershed, the State 208 Plan calls upon all local political jurisdictions in this area to adopt the appropriate institutional mechanisms in their communities to comply with criteria 1a, 1b and 1c. Criteria 6 applies when local institutional mechanisms are not yet in place.

1a A political jurisdiction shall adopt at least one of the following institutional mechanisms to implement stream setback requirements and conservation area preservation requirements within the Big Darby Creek watershed prior to the extension of centralized sanitary sewer service:

1. watershed-based zoning;
2. subdivision zoning; stormwater and/or flood plain regulations; flood plain regulations;
3. council resolution; and/or
4. ordinances.

1b All political jurisdictions in the Big Darby Creek are strongly encouraged to have, to update and to use comprehensive land use planning to support zoning and other local regulations.

1c Institutional controls for riparian corridor protection should include a purpose statement with the following three elements:

1. maintain and improve biological diversity and aquatic life use designations;
2. achieve sediment, pollutant, and nutrient removal; and
3. maintain stream functionality.

Recommended language for the purpose statement is as follows:

*It is the goal of the control to establish riparian setback restrictions to maintain and improve biological diversity and aquatic life use designations, achieve sediment, pollutant, and nutrient removal, and maintain stream functionality.*

## Criteria 2 - Local Stream Setbacks and Associated Development Restrictions<sup>2</sup>

2a Applicable Streams - The local zoning regulation should, at a minimum, apply to the waters described here. Streams requiring protection under this section are perennial, jurisdictional ephemeral, or intermittent streams with a defined bed, bank, or channel. National Resource Conservation Service (NRCS) soil survey maps should be used as one reference and the presence of a stream requiring protection should also be confirmed in the field. A drainage way constructed for roadside drainage and generally parallel to a road shall not be considered a stream subject to these requirements unless the Director of Ohio EPA determines there are compelling reasons it should. Any other waters of the State that happen to generally parallel a road for any distance shall be considered a stream subject to these requirements.

Ohio EPA use the USGS hydrologic unit watershed boundaries shown broadly in Figure 1 as the benchmark for an initial determination of whether a land parcel within a county contains a stream subject to these requirements. Ohio EPA, an applicant for a permit, or a third party may present additional information that may be considered in making a final conclusion on whether a stream as defined above exists on the property.

2b Size of the Setback Distance - The local zoning regulation should, at a minimum, delineate stream setback distance using one of the following two methods:

1. The setback distance shall be sized as the greater of the following:
  - i. The regulatory 100-year floodplain based on FEMA mapping;
  - ii. A minimum of 100 feet from the top of the streambank on each side; or
  - iii. A distance calculated using the following equation:

$$W = 133DA^{0.43} \quad (\text{Equation 1, Appendix A})$$

where:

DA = drainage area (mi<sup>2</sup>)

W = total width of riparian setback (ft)

W shall be centered over the meander pattern of the stream such that a line representing the setback width would evenly intersect equal elevation lines on either side of the stream.

If the DA remains relatively constant throughout the stretch of interest, then the DA of the downstream edge of the stretch should be used.

Where there is a significant increase in the DA from the upstream edge to the downstream edge of the area of interest, the setback width shall

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<sup>2</sup> The context of presenting these criteria is with respect to local governments implementing stream setbacks. The Darby SW permit issued by Ohio EPA requires stream setbacks and has other requirements that apply throughout the entire watershed.

increase accordingly.

2. Stream Restoration with 100 feet (each side) Riparian Setback.

Each stream segment within the proposed site boundaries can be assessed in accordance with Attachment B, Part 1. In the event the stream segment is classified as a “Previously Modified Low Gradient Headwater Stream”, the permittee has the option to restore the stream segment in accordance with Attachment B and include a 100-foot water quality setback distance from the top of the streambank on each side. In the event the stream segment exceeds the minimum criteria in Attachment B to be classified as a “Previously Modified Low Gradient Headwater Stream”, Attachment B may be considered on a case-by-case basis.

2c Permitted Uses - The local zoning regulation should, at a minimum, specify the following permitted uses within the stream setback distance. Uses that are passive in character (including, but not limited to, passive recreational uses, as permitted by federal, state and local laws, such as hiking, fishing, hunting, picnicking and similar uses) shall be permitted in stream corridor protection zones. Permitted uses are as follows:

1. Passive recreational activity. Unpaved public or private trails are included in this definition as a permitted use. Paved trails are a conditional use (see criteria 2d below). The following conditions apply to unpaved trails as a permitted use in the riparian setback:
  - a. Trail Surface: unimproved/earthen
  - b. Trail Width: minimum 3 feet, maximum 5 feet
  - c. No clearing of woody vegetation shall be permitted
  - d. Distance from edge of stream, minimum 125 feet (except spurs for river access)
  - e. River access points may be developed.
2. Removal of damaged or diseased trees.
3. Revegetation or reforestation.
4. Provided that disturbances due to construction are minimized and mitigated per the requirements in the Darby SW Permit, arterial streets are classified as a permitted use.
5. Provided that disturbances due to construction are minimized and mitigated per the requirements in the Darby SW Permit, installation and maintenance of public utilities is classified as a permitted use.
6. Disturbances of the riparian setback zone necessary to accomplish the uses described in paragraphs 2c1 to 2c5 are also authorized. However, all such disturbances shall be minimized, and any necessary disturbances shall be mitigated.

2d Conditional Uses - The local zoning regulation should, at a minimum, specify the following conditional uses within the stream setback distance. Conditional uses are activities that local zoning or other ordinances may permit after undergoing a review process that evaluates the extent of damage to the setback that the use may cause if the activity is permitted, and that provides for mitigation of that damage. The review process should also detail conditions under which a conditional use application will be denied. Conditional uses are as follows.

1. Streambank stabilization/erosion control work and/or large-scale stream channel and riparian setback restoration work, that are ecologically compatible and substantially use natural materials and native plant species where practical and available, is an approvable conditional use of the riparian setback. Providing that separate authority exists, such streambank stabilization erosion control, and stream channel restoration work shall be approved by the local jurisdiction or the Director of Ohio EPA. All streambank stabilization plans should provide long-term streambank protection. In reviewing this plan, the local jurisdiction or the Director of Ohio EPA may consult with representatives of the Ohio Department of Natural Resources, Division of Natural Areas and Preserves (ODNR DNAP); the Ohio EPA, Division of Surface Water; the local County Soil and Water Conservation District; or other technical experts as necessary. The local jurisdiction should provide language stating that erosion control measures be limited to the purposes of water quality protection, the prevention of flooding, or the protection of existing structures.
2. Construction of paved trails in the riparian setback to further passive recreation uses shall be an approvable conditional use. However, trails that become damaged due to natural erosion shall not be repaired but shall be moved upland or removed altogether. The following conditions shall apply to paved trails in the setback:
  - trail surface: (hard) asphalt or concrete
  - trail width: minimum 10 feet, maximum 12 feet
  - clearing width: maximum 20 feet (clearing not included as part of overall setback width)
  - distance from edge of stream: minimum 300 feet
  - river access points may be developed but must be unpaved
  - private trails should not have stream crossings, and crossings on public trails are a conditional use and will be permitted only if they are part of a comprehensive trail plan.
3. Unpaved trails as a component of a paved trail system may be necessary for Americans with Disabilities Act compliance. For an approvable conditional use in the riparian setback, those trails should have the following conditions:
  - Trail surface: (soft) compacted gravel
  - Trail width: minimum 5 feet, maximum 12 feet
  - Clearing width: maximum 20 feet (clearing not included as part of overall setback width)

- Distance from edge of stream: minimum 200 feet, unless developed as a river access point under 2c1e above.

4. A driveway or non-arterial roadway may be an approvable conditional use. A new crossing or new roadway for a street other than an arterial may be permitted to cross the stream corridor protection zone only in those circumstances when the parcel has no other existing access, when such crossing is necessary for public health or safety, or when the applicant can demonstrate that important ecological protection and ecological benefits are realized (such as saving a mature wood lot). In addition, the applicant must demonstrate that the new crossing or new roadway in the setback is necessary to achieve important ecological protection or maximizes ecological benefit. Such activity shall minimize disturbance to the riparian setback and shall mitigate any disturbances.

2e Prohibited Uses - The local zoning regulation should, at a minimum, specify the following prohibited uses within the stream setback distance.

1. Construction within the riparian setback zone is a prohibited use. This restriction applies to new construction and does not apply to existing residential structures and associated appurtenances.
2. Dredging and filling is a prohibited use in the riparian setback zone.
3. Motorized vehicles shall be a prohibited use, except for emergency vehicles when necessary for public health and safety.
4. There shall be no disturbance of natural vegetation in the riparian setback zone at any time during development on the remainder of the site, except for: 1) such conservation maintenance that the landowner deems necessary to control noxious weeds (as defined by ODNR, DNAP); 2) such plantings as are consistent with these regulations; 3) the passive enjoyment, access and maintenance of lawns and landscaping on existing parcels; and 4) such plantings as are necessary to implement a properly designed and permitted stream restoration project. If natural vegetation does not exist, replanting is required with native vegetation in accordance with a plan approved by the local jurisdiction.
5. Parking lots in the riparian setback are a prohibited use. There shall be no parking lots or other human made impervious cover. Exceptions may be appropriate for trails approved under the conditional use provision (2d2).
6. The riparian setback shall not be used for the application and/or spraying of wastewater treatment plant residuals.

2f Delineation of the Riparian Setback - The boundary of the setback is required to be clearly delineated on plans and prominently displayed in the field prior to development. No later than the end of construction, the applicant shall permanently

delineate the stream corridor protection zone in an aesthetically harmonious manner, such that the location of the zone is apparent to the casual observer and that permits access to the zone.

2g Replacement of Damaged Trails - Trails located within the stream setback distance that are damaged shall not be rebuilt but shall be removed or moved upland.

Ohio EPA believes the intent of criteria 2g should be to move trail segments damaged by water erosion to a more suitable location. As with trails installed under the conditional use provision, any necessary and appropriate changes to the specific trail design and trail replacement specifications should be debated and adopted by local jurisdictions.

2h Inspection of the Riparian Setback - Periodic inspections of riparian setbacks are required of the local jurisdiction. Each jurisdiction should define how often such inspections will be conducted.

### **Criteria 3 - Preservation of Conservation Areas**

Primary conservation areas are defined as areas that must be conserved. Secondary conservation areas are defined as those areas that should be conserved to the extent feasible. The categories for primary and secondary conservation areas are listed below along with the preferred set of permitted, conditional and prohibited uses. If circumstances within specific local communities are such that these conservation areas and uses prove unworkable then alternative proposals under the “as protective as” criteria 5 can be submitted.

Ohio EPA can foresee possible scenarios where an overall environmental benefit on a regional or watershed basis might be possible through the mitigation work done pursuant to Section 404/401 permits for land with small, isolated pockets of low-quality wetlands or marginal habitat for threatened and endangered species. Similarly, the land application of treated wastewater on some categories of conservation areas could be appropriate in some locations if there are sufficient regulations, modern design techniques, and operational safeguards in place.

3a Primary Conservation Areas - The following elements should be considered as primary conservation areas and must be preserved:

1. All land area within the setback distance from streams defined by criteria numbers 2a and 2b;
2. Slopes which include NRCS designated Highly Erodible Land (HEL) plus a 50-foot setback from the top of the slope;
3. Wetlands as defined by the Army Corps of Engineers or the Ohio EPA;
4. Populations of endangered or threatened species as defined by either the

state or federal government; and

5. Healthy forests defined as having 50% or more tree canopy cover of at least one contiguous acre.

3b Secondary Conservation Areas - The following elements should be considered as secondary conservation areas:

1. Existing healthy forests less than one contiguous acre;
2. Other significant natural features and scenic viewsheds; and

3c Conservation Requirements for Infiltration - The Big Darby Creek watershed TMDL report and the Darby SW permit provide for the management of stormwater such that a shallow ground water recharge rate target is maintained. Conservation areas shall be managed such that this recharge rate is maintained or improved.

3d Permitted Uses - The local zoning regulation should, at a minimum, specify the following permitted uses within the conservation areas of new development:

1. Passive recreation;
2. Removal of damaged or diseased trees;
3. Revegetation and reforestation;
4. New arterial streets (if disturbances due to construction of arterial streets are minimized and mitigated); and
5. Disturbances necessary to accomplish the permitted uses described in this criterion. However, all such disturbances shall be minimized and mitigated.

3e Conditional Uses - The local zoning regulation should, at a minimum, specify the following conditional uses within conservation areas. Conditional uses are activities that local zoning or other ordinances may permit after undergoing a review process that evaluates the extent of damage to the conservation area the use may cause if the activity is permitted, and the proposed mitigation of that damage. The review process should also detail conditions under which a conditional use application will be denied.

Conditional uses include:

- Streambank stabilization (includes the conditions listed under criteria 2d1);
- Erosion control measures (includes the conditions of criteria 2d1);
- Paved trails (includes the conditions of section criteria 2d2); and
- Stormwater best management practices.

3f Prohibited Uses - The local zoning regulation should, at a minimum, specify the following prohibited uses within the conservation areas of new development:

1. Construction of structures;
2. Dredging and filling;
3. Motorized vehicles;
4. Disturbance of natural vegetation;
5. Parking lots; and
6. Application or spraying of wastewater treatment plant residuals.

3g Ownership - Development plans should indicate which of the following are planned to be utilized to protect the conservation areas:

1. Homeowners' associations/condominium associations;
2. Political jurisdictions; and
3. Third party land trusts.

3h Permanent Protection - Conservation easements are an acceptable form of permanent protection if enforcement of the easement is undertaken by one of the ownership options listed in criteria 3g.

3i Contiguity - Conserved areas shall adjoin any neighboring areas of protected areas, and non-protected natural areas that would be candidates for inclusion as part of a future area of protected space.

3j Design and Review - The following principles should be specifically included in local zoning or other ordinances:

1. Identify areas to be conserved;
2. Identify areas for location of homes;
3. Placement of roads and other infrastructure; and
4. Drawing of lot lines.

3k Management - The applicant for development shall submit a plan for management of conservation areas and common facilities that maximizes ecological function of the conservation area, has been prepared by a qualified person or entity, and provides at a minimum the following:

1. Allocates responsibility and guidelines for the maintenance of the conservation area and operation of any facilities located thereon, including provisions for ongoing maintenance and for long-term capital



improvements;

2. Estimates the costs and staff requirements needed for maintenance and operation of, and insurance for, the conservation area and outlines a means by which such funding will be obtained or provided;
3. Provides for any changes to the plan to be approved by the local governing body; and
4. Provides for enhancement of the plan.

In the event the party responsible for maintenance of the conservation area fails to maintain all or any portion in reasonable order and condition, the appropriate governing body may pursue responsibility for its maintenance through whatever legal means are at its disposal.

#### **Criteria 4 – Comprehensive Stormwater Management**

The EAG identified the need for comprehensive stormwater management to minimize the impact of runoff and land development so that the health of the Big Darby Creek watershed is improved and maintained. The Big Darby Creek watershed TMDL report established groundwater recharge and stream setback recommendations that are implemented as requirements in the Darby SW permit. These requirements encourage the use of innovative development practices such as Low Impact Design but can still be achieved by conventional stormwater BMPs. Local jurisdictions are encouraged to adopt institutional mechanisms that require sustainable development and smart growth planning to achieve both high quality developments and strong protection of the Darby watershed.

#### **Criteria 5 - Options for “as protective as” Local Regulations and Individual Projects**

5a Alternative Local Regulations - The water quality protection criteria listed under criteria 2 and 3 provide local communities and developers a consistent set of guidelines upon which to adopt local community development and building standards in the Big Darby Creek watershed that are protective of water quality. Some communities may adopt the criteria exactly as recommended by the EAG and reported here. However, we recognize that local jurisdictions may develop slightly different standards that are just as protective as the ones listed here. Therefore, any jurisdiction may ask the Director of Ohio EPA to consider a deviation from adopting these exact criteria. Such requests must provide sufficient evidence regarding its ability to be “as protective as” what is listed here. Furthermore, before submitting the request to the Director, the local jurisdiction must provide public notification and public involvement in developing the proposal.

5b Alternative Performance Criteria for Individual Projects - It is the Agency’s intention that the water quality protection criteria listed under criteria 2 and 3, and the requirements included in the Darby SW Permit, will apply to the majority of permitting

situations in the watershed. However, we recognize there may be situations where the specific requirements are not well suited to a particular development site. In such situations the permit applicant may elect to develop a project proposal designed to be “as protective as” the criteria set forth here.

The mechanism to pursue this option is to apply for an *individual NPDES stormwater construction permit*. The applicant must submit an Environmental Site Management Plan (ESMP) as part of the Stormwater Pollution Prevention Plan. The ESMP must describe riparian corridor preservation and mitigation activities, describe the water quality performance targets, describe the methods that will be employed to measure site performance and resulting water quality, and describe the steps to be taken, if necessary, to modify the site design and or practices to attain the performance targets.

The ESMP must include an acceptable mitigation plan if there must be deviation from stream setback distances (criteria 2b), conservation area protection (criteria 3a, 3b), infiltration and groundwater recharge requirements (criteria 3c, 4), or the loading targets for phosphorus and total suspended solids found in the Big Darby Creek TMDL report. The benchmark for achieving the “as protective as” status for individual projects is demanding because of the unique resource and the uncertainty about how the system will respond. Therefore, the default benchmark for “as protective as” is a 3 to 1 ratio of land conserved as stream setbacks or conservation areas for each linear foot or acre of land removed from the stream setback or conservation areas conservation, respectively. This mitigation must occur within the Big Darby Creek watershed.

The ESMP must include a site specific “as protective as” demonstration using, at a minimum, these performance criteria:

1. Setbacks - Post development land use shall be protective of the flood plain. Where necessary to intrude into the flood plain to achieve the purposes of the project, off site mitigation within the same Watershed Assessment Unit (12-digit HUC scale) shall be included in the plan at a rate substantially greater than the level of intrusion into the flood plain, or an alternative flood plain protective measure approved by the Director.
2. The post development storm hydrograph shall be the same or improved (reduced peak flows) compared to the pre-development hydrograph of runoff from the site.
3. Post development infiltration shall equal or exceed pre-development infiltration.
4. Post development pollutant loadings for total phosphorus and TSS shall be minimized to the greatest extent feasible. The overall design and post development management plan for the site shall achieve the most restrictive of the following pollutants loadings targets:
  - a. For un-managed lands (forest, brush, or farmland that has been fallow for 5 or more years), post-development pollutant loadings shall be no more than pre-development pollutant loadings;

- b. Total phosphorus loading rate less than or equal to 0.1 kg/acre/year; and
- c. TSS loading rate less than or equal to 6 kg/acre/year.

The values listed in b and c are derived from the allocations found in the Big Darby Creek TMDL report. These values may be revised with Ohio EPA approval if the Agency updates TMDL loading calculations and allocated loads. The ESMP must include a monitoring program to document attainment of these targets.

## **Criteria 6 - Options for Projects when Local Regulations are Absent**

This section describes the conditions under which an applicant may submit site development plans to Ohio EPA for review and approval in the absence of appropriate requirements adopted at the local level.

6a All Permits Must be Approved Before Commencing Construction - All necessary permits must be approved before commencing earth disturbing activity. These permits include, but are not limited to:

1. coverage under the Darby SW Permit;
2. Permit-to-Install (PTI) for sewer installation;
3. 401 water quality certification, if applicable;
4. NPDES direct discharge permit, if applicable; and
5. approval from ODNR, DNAP, if applicable.

6b Environmental Site Management Plan (ESMP) - The Stormwater Pollution Prevention Plan (SWP3) required under the construction stormwater general permit shall be expanded to be an ESMP. This plan should include all the requirements from the stormwater permit plus the ESMP must provide information that explains and demonstrates how the project will comply with criteria 2a through 2h and 3a through 3k in the absence of locally enacted regulations. The applicant may choose to prepare an ESMP following criteria 5b in lieu of meeting some or all the requirements found in criteria 2 and 3. The targeted Agency review time for reviewing the expanded SWP3/ESMP submitted by the applicant will be 45 days, the same as in the general permit.

## **Criteria 7 - Recommended Naturalizing Riparian Areas and Improved Conservation Practices for Agricultural and Undeveloped Lands**

Undeveloped land within the Big Darby Creek watershed is primarily row crop agriculture with some forested and open brush land. Although a healthy riparian corridor exists along some segments of Big and Little Darby creeks and their larger tributaries, expansion and retention of natural (wooded and prairie) riparian vegetation is needed. This along with implementation of agricultural best management practices, is essential to the health of the watershed. A naturally vegetated setback system along all perennial streams should include wetlands, steep slopes, and the most frequently used portion of the floodplain, in some cases including the 100-year mapped flood plain.

Where agricultural practices occur in proximity to streams (i.e., the distances set forth in criteria 2b), landowners and local policy makers should focus on a long-term decision-making process to manage runoff from intensive agricultural production activity in a manner that allow slowing, capture, and treatment of agricultural runoff before reaching streams where feasible. Development of voluntary, locally developed Nonpoint Source Implementation Strategies (NPS-IS) at the HUC-12 watershed assessment unit scale provides an opportunity for strategic planning, prioritization, and allows projects identified in the plans to be eligible for funding through state and federal nonpoint source grant programs. Additional information on NPS-IS is available here: <https://epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/9-element-nps-is-tools>.

Recommended agricultural practices can be found in the Ohio Nonpoint Source Management Plan available at: [https://epa.ohio.gov/static/Portals/35/nps/2019-NPS\\_Mgmt\\_Plan.pdf](https://epa.ohio.gov/static/Portals/35/nps/2019-NPS_Mgmt_Plan.pdf). The plan includes upland management strategies, riparian management and restoration strategies, and high-quality water protection strategies.

### **Criteria 8 - Installing Clay Check Dams along Sewer Trenches**

A cut off dam of native clay or impervious soil shall be placed across and along the sanitary sewer trench as necessary to retard and resist the movement of ground water through the trench granular bedding or backfill material. The dams shall be carefully compacted and shall be 6 feet in thickness as measured along the service center line and shall be constructed against the undisturbed trench sides from the sub-grade or bottom of the stone foundation, whichever is lower, to the limit of 36 inches over the top of the pipe. Dams shall be placed where storm sewers or water lines cross sanitary sewers, and upstream from the main line sewer connection.

<b>Attachment A.</b> <b>Summary of the special Darby prescriptions in the Big Darby Creek watershed. See the text of Appendix 9-3 for additional information about each of the numbered criteria.<sup>1</sup></b>			
General Category	Purpose and Benefit	Criteria (Number & Short Title) Brief Explanation	Method of Implementation Required for <sup>2</sup> :
Review of central sewer line projects	To ensure that new projects on central sewers have appropriate measures in place to protect the Big Darby Creek watershed	<p><i>0 - Review of Central Sewer Line Projects</i></p> <p>Clarifies hierarchy of responsible jurisdiction to act on criteria:</p> <ul style="list-style-type: none"> <li>• 1, 2a - 2h, and 3a -3k; or</li> <li>• 1 and 5b; or</li> <li>• 6a and 6b</li> </ul>	<p><i>Ohio EPA action on Permit-to-Install (PTI) applications</i></p> <p>Construction of new sewers, including small cluster or community systems with land application of wastewater; does <u>not</u> cover individual Home Sewage Treatment Systems.</p>
Local government adoption of institutional mechanisms	To achieve institutional acceptance and implementation mechanisms at the local governmental level	<p><i>1 - Adoption of Institutional Mechanisms</i></p> <p>Use zoning, stormwater and/or flood plain regulations, council resolutions, and/or ordinances as the means to enforce provisions covered in criteria 2 and 3, or alternatively “as protective as” measures pursuant to criteria 5a</p>	<p><i>Local government action</i></p> <p>Development projects on central sewers authorized by a PTI (see criteria 5 and 6 for alternatives)</p> <hr style="border-top: 1px dashed black;"/> <p><i>Implementation optional</i></p> <p>Local government action recommended but not required.</p>

<b>Attachment A.</b> <b>Summary of the special Darby prescriptions in the Big Darby Creek watershed. See the text of Appendix 9-3 for additional information about each of the numbered criteria.<sup>1</sup></b> <span style="float: right;"><b>(page 2 of 5)</b></span>			
<b>General Category</b>	<b>Purpose and Benefit</b>	<b>Criteria (Number &amp; Short Title) Brief Explanation</b>	<b>Method of Implementation Required for<sup>2</sup>:</b>
Setback distances from streams	To establish minimum required setback distances from streams to limit development in this sensitive zone and protect water quality by providing, among other things the following water quality benefits: <ul style="list-style-type: none"> <li>• active flood plain to provide for sediment export</li> <li>• infiltration of surface runoff to support stream base flows</li> <li>• filtration of runoff</li> <li>• shading of the stream to help reduce stream temperatures and control algal growth</li> </ul>	<p><i>2 - Local Stream Setbacks and Associated Development Restrictions</i></p> <p>2a Applicable Streams 2b Size of the Setback Distance</p> <p>Applies to all stream channels, but does not apply to channels built for roadway drainage Based on TMDL, EAG recommendations and final Darby Stormwater permit:</p> <ul style="list-style-type: none"> <li>• Default setback distances calculated with equations based upon the most up-to-date stream geomorphology research, with the added requirements of:                             <ul style="list-style-type: none"> <li>• 100 foot per side minimum</li> <li>• the regulatory 100-year flood plain</li> </ul> </li> <li>• Option to build w/i 100-year flood plain of entrenched ditches if stream mitigation and 100-foot setback implemented</li> </ul>	<p>Ohio EPA Darby SW Permit</p> <p>All construction activity involving the disturbance of 1 acre or more of land. (Agricultural practices are exempt; construction associated with new drainage ditches or maintenance of existing ditches may be covered)</p>
Development restrictions associated with stream setbacks	To ensure land within setback area is properly cared for and permanently protected from uses or activities that could compromise the water quality benefits conveyed by land in the setback zone	<p><i>2c Permitted Uses</i></p> <p><i>2d Conditional Uses</i></p> <p><i>2e Prohibited Uses</i></p> <p><i>2f Delineation of the Riparian Setback</i></p> <p><i>2g Replacement of Damaged Trails</i></p> <p><i>2h Inspection of the Riparian Setback</i></p>	<p><i>Local government Action or Ohio EPA action on PTI applications</i></p> <p>See criteria 1 or criteria 6</p> <hr/> <p><i>Implementation optional</i></p> <p>Local government action recommended but not required</p>

<b>Attachment A.</b> <b>Summary of the special Darby prescriptions in the Big Darby Creek watershed. See the text of Appendix 9-3 for additional information about each of the numbered criteria.<sup>1</sup></b> <span style="float: right;"><b>(page 3 of 5)</b></span>			
<b>General Category</b>	<b>Purpose and Benefit</b>	<b>Criteria (Number &amp; Short Title) Brief Explanation</b>	<b>Method of Implementation Required for<sup>2</sup>:</b>
Preserve conservation areas in land to be developed.	To establish conservation area requirements to maintain native vegetation and preserve the environmental service the conservation areas provide.	<b>3 - Preservation of Conservation Areas</b> <b>3a Primary Conservation Areas</b> <b>3b Secondary Conservation Areas</b>  Plans for conservation areas within an individual development, or contained in a comprehensive land use plan adopted by local government, shall consider 5 specific landscape elements as primary conservation areas that must be conserved, and 3 landscape elements as secondary conservation areas to be conserved where feasible	Local government Action or Ohio EPA action on PTI applications  See criteria 1 or criteria 6
			Implementation optional  Local government action recommended but not required
Development restrictions associated with conservation areas and management of infiltration on conserved space.	To ensure conservation areas are properly cared for and permanently protected from unacceptable uses or activities; to ensure sound management practices that will minimize runoff and promote the infiltration of runoff and the recharge of shallow ground water aquifers that maintain stream flows	<b>3c Conservation Requirements for Infiltration</b> <b>3d Permitted Uses</b> <b>3e Conditional Uses</b> <b>3f Prohibited Uses</b> <b>3g Ownership</b> <b>3h Permanent Protection</b> <b>3i Contiguity</b> <b>3j Design and Review</b> <b>3k Management</b>	3c - Ohio EPA Darby SW Permit; others - Local government action  See criteria 1
			Implementation optional  Local government action recommended but not required

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<b>General Category</b>	<b>Purpose and Benefit</b>	<b>Criteria (Number &amp; Short Title) Brief Explanation</b>	<b>Method of Implementation Required for<sup>2</sup>:</b>
Comprehensive stormwater management through: <ul style="list-style-type: none"> <li>• increased controls on stormwater runoff through the NPDES General Permit for Stormwater Associated with Construction Activity (referred to here as the Darby SW Permit)</li> <li>• low impact and smart growth development standards through local institutional mechanisms</li> </ul>	To establish stream setback distances, erosion control measures, sediment and nutrient reduction practices, water retention basins, and runoff infiltration strategies in an NPDES permit issued for construction activities.	<b>4 - Comprehensive Stormwater Management</b> <ul style="list-style-type: none"> <li>• Imposes required stream setback distances, see criteria 2b</li> <li>• Sediment controls during construction include larger sediment storage volumes, an effluent quality maximum target of 45 mg/l TSS and monitoring</li> <li>• Post construction controls include added storm flow retention methods and ground water infiltration practices</li> </ul>	Ohio EPA Darby SW Permit  Any construction activity that disturbs 1 acre or more of land surface  <i>Local government action</i>  Recommended but not required
Alternative “as protective as” performance criteria adopted by local governments	To provide a mechanism to deviate from the requirements in criteria 2a through 2h and 3a through 3k while still protecting water quality	<b>5 - Options for “as protective as” Local Regulations and Individual Projects</b> <b>5a Alternative Local Regulations</b>  In lieu of following criteria 2 and 3, local jurisdictions may choose to develop “as protective as” criteria in a public forum and request Ohio EPA to approve their use for projects within that jurisdiction	<i>Local government action</i>  Optional
Alternative “as protective as” performance criteria for individual projects	To provide a mechanism to deviate from the requirements in criteria 2a through 2h and 3a through 3k while still protecting water quality	<b>5b Alternative Performance Criteria for Individual Projects</b> <ul style="list-style-type: none"> <li>• Permit applicant develops a project proposal designed to be “as protective as” and achieving the performance criteria</li> <li>• Applicant submits proposal in Environmental Site Management Plan with permit application</li> </ul>	<i>Individual NPDES permit application for stormwater associated with construction activity</i>  Optional



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General Category	Purpose and Benefit	Criteria (Number & Short Title) Brief Explanation	Method of Implementation Required for <sup>2</sup> :
<p><b>Attachment A.</b>  <b>Summary of the special Darby prescriptions in the Big Darby Creek watershed. See the text of Appendix 9-3 for additional information about each of the numbered criteria.<sup>1</sup></b> <span style="float: right;"><b>(page 5 of 5)</b></span></p>			
General Category	Purpose and Benefit	Criteria (Number & Short Title) Brief Explanation	Method of Implementation Required for <sup>2</sup> :
Project reviews in the absence of locally adopted regulations	To address how development projects with central sewers may be reviewed by Ohio EPA in situations where local communities have not adopted local regulations addressing criteria 1 through 3 (any or all of the criteria in these categories)	<p><i>6 - Options for Projects when Local Regulations are Absent</i>  <i>6a All Permits Approved Before Commencing Construction</i>  <i>6b Environmental Site Management Plan (ESMP)</i></p> <ul style="list-style-type: none"> <li>• Permit applicant develops a project proposal designed to meet the criteria set forth</li> <li>• Project plan submitted to Ohio EPA for approval as part of an expanded stormwater pollution prevention plan</li> </ul>	<p><i>Individual NPDES permit application and approval for stormwater associated with construction activity</i></p> <p>Required for approval of Permit-to-Install for any central sewer line project within a community in the Franklin County portion of the Darby watershed that has not adopted the necessary institutional mechanisms called for in criteria 1</p>
Riparian land use practices for agricultural and undeveloped land	To promote appropriate land use practices on agricultural land within the riparian zone to improve water quality	<p><i>7 - Recommended Riparian Land Use Practices for Agricultural and Undeveloped Land</i></p> <p>Education and outreach aimed at landowners and farmers with voluntary acceptance of appropriate land use practices within riparian zone</p>	<p><i>State and local resource agencies</i></p> <p>Not required; voluntary adoption of best management practices</p>
Sewer trench specifications	To reduce “export” of ground water from the immediate watershed by limiting movement through the gravel sewer trench beds, thereby increasing shallow ground water recharge of streams	<p><i>8 - Installing Clay Check Dams along Sewer Trenches</i></p> <p>All sanitary sewer lines shall be installed with clay dams at specified intervals, as well as where the sanitary sewer crosses storm sewers and water lines</p>	<p><i>Ohio EPA review of Permit To Install applications</i></p> <p>Approval of central sewer line projects</p>

<sup>1</sup> Ohio EPA encourages local governments throughout the entire watershed to implement the requirements listed here.

<sup>2</sup> Most of these criteria apply when the property or land in question is developed (LD = land development). The criteria are not applicable to land that has already been developed for housing, commercial or industrial uses, except in situations where Ohio EPA believes an existing site needs regulation under an individual NPDES stormwater permit. Criteria 7 applies to undeveloped land (UDL).

## **Attachment B – Stream Restoration Option under Darby SW Permit**

### **Part 1 Stream Assessment**

This assessment will determine if a stream is considered a previously channelized, low-gradient headwater stream (a drainage ditch may be a natural stream that has been channelized and can be restored) which would be applicable for stream restoration in lieu of protecting a setback as per Criteria 2.b.1.i.

In the event the assessment of the stream, meets all the criteria listed below, restoration (provided 401/404 permits are authorized) as depicted in Part 2 of this attachment, may be a means of reducing the setback distance required by Criteria 2.b.1.i.

Previously channelized low-gradient headwater streams (drainage ditches) shall for the purposes of this permit be defined as having all the following characteristics:

- Less than 10 square miles of drainage area
- Low gradient and low stream power such that despite their straightened and entrenched condition incision (downcutting) is not evident
- Entrenched, entrenchment ratio < 2.2
- Straight, sinuosity of the bankfull channel < 1.02

### **Part 2 Restoration**

Restoration shall be accomplished by any natural channel design approach that will lead to a self-maintaining reach able to provide both local habitat and watershed services (e.g. self-purification and valley floodwater storage).

- Construction of a floodplain, channel, and habitat
- Floodplain excavation necessary to promote interaction between stream and self-forming floodplain
- Include a water quality setback of 100 feet from centerline of stream on each side.

The primary target regardless of design approach shall be the frequently flooded width, which shall be maximized, at 10 times the channel's self-forming width. Five times the self-forming channel width may still be acceptable particularly on portions of the site if greater widths are achieved elsewhere.