

Updating Lake County's Stormwater Utility Fee Credit Program



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Abstract

Stormwater utilities collect stormwater fees to maintain, replace, and upgrade their stormwater infrastructure and to comply with their Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) permits. Communities can offer discounts (fee credits) to their stormwater fees to property owners that take action to manage stormwater on their properties. Incentivizing installation of stormwater control measures helps accomplish the following objectives of the Lake Erie Protection and Restoration Plan: reduce nutrient and sediment loading to Lake Erie; reestablish more natural flow regimes to Lake Erie tributaries; reduce loading of toxins and other pollutants from businesses and households; identify and address gaps in green infrastructure in urban communities within the Lake Erie basin. Chagrin River Watershed Partners, Inc. (CRWP) assisted Lake County Stormwater Management Department (LCSMD) with updating the *Lake County Stormwater Utility Fee Credit Manual for Non-Residential Users*. Updates included: increasing the maximum fee credit to 50%, increasing maximum fee credit for stormwater control measures that improve water quality to 20%, simplifying application and reporting procedures, removing credit categories with difficult application and reporting requirements and low credit amount, and removing water quality and water quantity credits for stormwater control measures that are required by local or state stormwater regulations. CRWP also completed a literature review of Ohio stormwater utility fee credit manuals and other documents relevant to stormwater fee crediting, produced a summary of considerations for implementing a residential stormwater fee credit program, and generated a fact sheet.

Background

Formation of stormwater utilities and collection of stormwater fees is one mechanism that communities can use to maintain, replace, and upgrade their stormwater infrastructure and to comply with their Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) permits. Most stormwater utilities bill based on Equivalent Residential Units (ERUs), which is usually defined as the average amount of impervious surface on a residential parcel. Increases in impervious area result in more stormwater runoff that causes flooding, erosion, and water quality problems that communities need to address, so this system relates to the property owner's contribution to a community's stormwater management needs. Communities can offer discounts to their stormwater fees to property owners that take action to manage stormwater on their properties or help the communities meet their MS4 permit requirements. These discounts are known as stormwater fee credits.

Communities in the Lake Erie basin can use stormwater fee credits to incentivize the installation and maintenance of stormwater control measures that remove pollutants from stormwater runoff. Improving stormwater management in this fashion helps accomplish the following objectives of the Lake Erie Protection and Restoration Plan: reduce nutrient loading, especially dissolved reactive phosphorus, and reduce sediment loading to Lake Erie; reestablish more natural flow regimes to Lake Erie tributaries; reduce loading of toxins and other pollutants from businesses and households; identify and address gaps in green infrastructure in urban communities within the Lake Erie basin.

Chagrin River Watershed Partners, Inc. (CRWP) proposed to assist the Lake County Stormwater Management Department (LCSMD) in updating the *Lake County Stormwater Utility Fee Credit Manual for Non-Residential Users* and to research the potential implementation of a

fee credit program for residential users. The *Lake County Stormwater Utility Fee Credit Manual for Non-Residential Users* had not been updated since 2005. Prior to the updates, participation in the fee credit program was minimal. The need for an updated manual came about through increased membership in LCSMD by communities faced with rising stormwater management costs due to increased flooding and damage to structures, increased imperviousness and aging infrastructure. LCSMD provides access to resources that some municipalities cannot afford on their own. Since the 2005 revisions of the non-residential fee credit program, all Lake County communities that were Level 1 members (receiving limited stormwater management services) of LCSMD have upgraded their membership to Level 2 and now receive all of the stormwater services that LCSMD provides. Additionally, overall membership (all at Level 2) in Lake SMD has increased from 12 members to 17 members.

Methods

CRWP began this project by reviewing the existing *Lake County Stormwater Utility Fee Credit Manual for Non-Residential Users* and identifying proposed updates and questions for LCSMD staff.

On September 29, 2015, CRWP met with LCSMD to discuss the utility's goals for the credit manual update. At this meeting, CRWP learned that LCSMD wanted to remove fee credits for stormwater control measures that were required by state or local regulations from its fee credit manual. This information affected many of CRWP's initial ideas for improvement of the manual and limited the opportunity for the utility to take advantage of occasions when site owners are forced to consider stormwater management on their property and engage the services of a professional engineer. CRWP also learned that LCSMD was particularly interested in encouraging schools to use the education credits and that the only credits currently used were those for industries in compliance with an Industrial Stormwater Discharge NPDES Permit.

On November 19, 2015, CRWP discussed fee credit considerations with Jay Dorsey (then of Ohio Department of Natural Resources), including the impact of not crediting stormwater control measures that were required by state or local regulations. On December 9, 2015 CRWP e-mailed LCSMD information regarding other Ohio utilities' crediting of stormwater control measures that were required by state or local regulations and asked for confirmation that LCSMD wanted to make this change to its credit manual. LCSMD requested additional information about how other utilities credit required stormwater control measures and at what percentage, which CRWP provided on December 11, 2015. On February 10, 2016, CRWP sent draft credit manual updates to LCSMD for all sections except for the water quantity and water quality sections while CRWP awaited a response regarding crediting of required stormwater control measures. LCSMD confirmed its desire to remove credits for required stormwater control measures, and CRWP sent complete sent draft credit manual updates to LCSMD for staff review on April 1, 2016. On May 3, 2016, LCSMD staff notified CRWP that they were satisfied with the credit manual updates and requested a final version for legal review. CRWP sent LCSMD the final version of the credit manual on May 17, 2016. On December 16, 2016, LCSMD notified CRWP that the Lake County Prosecutor's Office had reviewed the manual and did not have any changes.

Throughout this project, CRWP reviewed Ohio stormwater utility fee credit manuals and credit guidance documents from agencies and non-profit organizations and shared relevant findings with LCSMD. This literature review was useful in justifying proposed changes to LCSMD's credit manual. CRWP anticipates that this literature review will also be useful to

other communities interested in establishing or updating a stormwater fee credit program. CRWP completed the literature review in January 2017. The non-residential portion of the literature review focused on Ohio stormwater utilities because several Ohio stormwater utilities have stormwater fee credit programs for non-residential property owners and these are the most relevant examples for Lake County and other Ohio communities in the Lake Erie basin. CRWP only identified one Ohio stormwater utility with a residential stormwater fee credit program, so CRWP included out-of-state utilities in that portion of the literature review. CRWP initially focused on residential stormwater fee credit programs in the Great Lakes, but broadened scope since relatively few residential stormwater fee credit programs were found in other Great Lakes states. CRWP used this literature review of residential stormwater fee credit programs to summarize considerations that would impact the feasibility of LCSMD instituting a residential stormwater fee credit program. CRWP also produced a fact sheet for LCSMD to use to educate its non-residential rate payers about the fee credit program.

Results & Discussion

Chagrin River Watershed Partners, Inc. (CRWP) assisted Lake County Stormwater Management Department (LCSMD) with updating its fee credit manual (Appendix A). Application and reporting procedures were simplified to increase participation. Maximum fee credit was increased from 30% to 50%. Maximum fee credit for installing and maintaining stormwater control measures that improve water quality was increased from 15% to 20%. The credit categories for “Other Non-Structural BMP” and “Integrated Non- Structural BMP Program” were removed because the credit amount (5% Other Non-Structural BMP and 15% for Integrated Non- Structural BMP Program) were too small to motivate businesses to pursue them, but the water quality benefit provided was not large enough to justify increasing the credit amount. Schools no longer need to provide employee stormwater education or post or distribute stormwater literature in order to receive education credits. Schools can now receive credit for allowing LCSMD, Lake County General Health District, or Lake Soil and Water Conservation District to offer lessons related to water quality to their students or using water curricula such as Project WET, Project Aquatic WILD, or GLOBE to educate students. At least 20% of the student body must receive education related to water quality, watersheds, or aquatic ecosystems using one of the above methods annually in order for the school or school district to receive credit.

Water quality and water quantity credits were changed to reflect that LCSMD is no longer interested in providing fee credit for stormwater control measures that are required by local or state stormwater regulations. Non-residential customers can now receive credit for retrofitting flood control basins to provide water quality treatment or by installing stormwater control measures that improve water quality on sites developed prior to 2003 (when state stormwater regulations began requiring water quality treatment of stormwater runoff). Quantity credit can be received for substantially reducing stormwater volumes through infiltration and/or rainwater harvesting or for exceeding local stormwater detention requirements. Applicants will only receive credit for rainwater harvesting systems if the system is allowed by the municipality or township in which the site is located. Quantity and quality credit amounts are determined by LCSMD on a case-by-case basis based on the benefits provided. CRWP will offer to co-present on the updates to LCSMD’s stormwater fee credits for non-residential users at LCSMD’s Annual Meeting in 2017.

CRWP reviewed the fee credit manuals of eleven Ohio stormwater utilities and five stormwater utilities outside of Ohio that have residential fee credit programs (Appendix B). Insights from crediting guidance documents and literature on funding green infrastructure were also included in this review. Maximum credit amounts ranged from 50% to 100%. Activities credited by Ohio stormwater utilities for non-residential property owners include: installation and maintenance of stormwater control measures designed to improve water quality, installation and maintenance of stormwater control measures designed to manage stormwater quantity, compliance with a stormwater industrial NPDES permit (these permits require actions that improve water quality), incorporation of water quality education into school curricula, public involvement or public education, private maintenance of sections of the MS4, brownfield reuse, and compliance with an agriculture conservation plan. The Northeast Ohio Regional Sewer District also offers residential property owners 25% credit for effectively implementing rain gardens, on-site-stormwater storage, impervious surface reduction, permeable pavement, or vegetated filter strips. CRWP will share the results of its literature review through a presentation at the Ohio Stormwater Conference on May 12, 2017. CRWP will also make this literature review available on its website.

LCSMD elected not to institute a residential fee credit program at this time. This decision was largely related to LCSMD's economical fee structure and the staff resources needed to implement a residential fee credit program. However, CRWP produced a summary of considerations for instituting a residential stormwater fee credit program in case they decide to pursue this option in the future (Appendix C).

CRWP also produced a fact sheet for LCSMD to use to educate its non-residential rate payers about the fee credit program (Appendix D). This fact sheet provides an overview of the credits available to non-residential property owners.

Conclusions

CRWP assisted LCSMD with updating the *Lake County Stormwater Utility Fee Credit Manual for Non-Residential Users* to encourage greater use of credits and align the credit manual with the current priorities of the stormwater utility. CRWP completed a literature review of Ohio stormwater utilities' credit programs and other stormwater fee crediting considerations. This material will be shared with communities in the Ohio Lake Erie basin at the Ohio Stormwater Conference and through CRWP's website. CRWP also summarized considerations for implementing a residential stormwater fee credit program, which may also be useful to other Ohio stormwater utilities. Communities can use this information to incentivize installation of stormwater control measures that will help improve water quality in Lake Erie and the streams that drain to it.



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Lake County

Stormwater Utility Fee

Credit Manual

For Non-Residential Users

In Member Communities:

Concord Township
Eastlake
Fairport Harbor
Grand River
Kirtland
Kirtland Hills
Lakeline
Madison Township
Madison Village
Mentor-on-the-Lake
Painesville City
Painesville Township
Perry Village
Timberlake
Willoughby
Willoughby Hills
Willowick

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Stormwater Utility Fee Credit Manual

1.0 Background

1.1 Purpose

The Board of Lake County Commissioners has created a Stormwater Utility in order to provide stable and non-discriminatory funding for its stormwater management activities. Lake County provides stormwater related services to 17 member communities through its Stormwater Management Department. Member communities include: Concord Township, Eastlake, Fairport Harbor, Grand River, Kirtland, Kirtland Hills, Lakeline, Madison Township, Madison Village, Mentor-on-the-Lake, Painesville, Painesville Township, Perry Village, Timberlake, Willoughby, Willoughby Hills, and Willowick.

The impact of individual properties on the stormwater management system is quantified based primarily on the amount of impervious area on a parcel of property. The baseline Stormwater Utility Fee (Fee) does not take into account the value provided by some property owners that independently implement and maintain stormwater management practices that offset, to some extent, the impact of their developed property on the components of the stormwater drainage system, both natural and man-made.

Using a Fee Credit process, the County may make an adjustment to the Utility Fee paid by any non-residential customer that provides value-added stormwater management services that support and complement the County's stormwater management goals, which include compliance with Lake County Stormwater Management Department (LCSMD)'s Small Municipal Separate Storm Sewer Systems National Pollutant Discharge Elimination System (NPDES) permit.

This Stormwater Utility Fee Credit Manual ("Manual") describes the LCSMD Fee Credit Program. Award of Fee Credit is an administrative recognition of the value of a variety of significant stormwater management activities provided by non-residential customers.

Approved Credit applications will result in the reduction of an applicant's Fee for as long as the approved activities continue and accomplish their intended purposes. The per-parcel adjusted Fee may not be reduced below the residential customer Fee. Additionally, the maximum Fee Credit is 50% of the Fee. This Manual establishes

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eligibility criteria and application procedures to determine the proportional amount of Fee Credit due to providers of these benefits.

This manual does not address any Credits or incentives for residential customers. At a future date, the LCSMD may undertake the creation of an Incentive Program for residential customers who implement significant stormwater management practices in support of the LCSMD's stormwater management goals. Additionally, the LCSMD may develop a grant or cost-sharing program to fund demonstration projects for low-impact development or conservation site design.

1.2 Stormwater Management Overview

As Lake County grows and the area of impervious surface increases, the ability of land to absorb rain and snow melt decreases and the volume of stormwater and the rate at which it discharges increases. Urban activities also increase the potential for surface and groundwater pollution. Because of this, the County must thoughtfully and intentionally manage stormwater to:

- Reduce the potential for property damage by providing adequate conveyance of stormwater through constructed and natural pipes and channels,
- Address resultant increases in the discharge rates and volumes of stormwater, and
- Reduce pollutant loading and protect the quality of our water resources through stormwater treatment and pollution prevention activities.

Every County resident, business, and visitor uses and benefits from County stormwater management activities that achieve these objectives.

On behalf of its member communities, the LCSMD designed and implements a Stormwater Management Program ("SWMP") to address the permit requirements of Ohio's Phase II Stormwater Permit for Municipal Separate Storm Sewer Systems (MS4). The goal of the permit is to maintain and improve the chemical, biological, and physical health of the waters of the state. More information about this permit can be found on the LCSMD's stormwater website (www.lakecountyohio.gov/smd).

When the County adopted the funding mechanism for its stormwater management activities, the County took into account storm drainage system needs, NPDES MS4 permit requirements, and other relevant factors. Research has shown that the area of impervious surface on a property is directly related to the water quality, quantity, and conveyance impacts on the stormwater drainage system. Consequently, impervious surface is the most equitable factor to determine what an individual property owner's payment should be for the availability, use, benefit, and protection of the County's water resources.

Important stormwater management activities funded by the Fee include:

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- Planning and regulation development
- Regulation enforcement
- Response to citizen inquiries, violations reports, and complaints
- Education about pollution prevention techniques to improve stormwater quality
- Public participation opportunities
- Detection and elimination of illicit discharges to the stormwater system
- Storm sewer system mapping
- Grading and drainage plan review and approval
- Stormwater Pollution Prevention Plan review and approval
- Construction site inspection for proper erosion and sediment control
- Post-construction site inspection
- Water quality and quantity control structure construction
- Stabilization of highly erodible creeks and other drainageways
- Storm sewer, catch basin, and outfall inspection, maintenance, and replacement
- Street sweeping
- Materials management to reduce exposure to stormwater
- Record keeping and report preparation

All owners of developed property in LCSMD member communities are required by Resolution of the Lake County Board of Commissioners to pay Stormwater Utility fees that will be used to fund stormwater management activities.

1.3 Definitions

The following definitions are extracted from the Stormwater Rules and Regulations. Any changes to definitions adopted in future Stormwater Rules and Regulations amendments will take precedence over definitions cited in this Manual.

Credit - A conditional reduction in the amount of the Fee paid by an individual Non-Residential property owner based on the provision and continuation of an effectively maintained and operated Structural Stormwater Management Practice or the provision of a Non-Structural Stormwater Management Practice by a property owner, which system, facility, service, or activity reduces the LCSMD's cost of providing stormwater management services or System components according to the provisions of this Credit Manual.

Developed - Real property that has been altered from its natural state by the addition to or construction of impervious area on all or part thereof.

Equivalent Residential Unit (ERU) – 3,050 square feet of impervious area.

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Impervious Area - A surface area that is altered, in conjunction with the removal of vegetation, and compacted or covered with material that is resistant to the infiltration of water, including but not limited to, most conventionally surfaced streets, roofs, sidewalks, patios, driveways, parking lots, and any other oiled, graveled, graded, compacted, or other surface which impedes the natural infiltration of stormwater. May also be referred to as impervious cover or impervious surface.

LCSMD (Lake County Stormwater Management Department) - The Stormwater Management Department Division of the Lake County Department of Utilities, its employees, agents, and/or assignees, and the Lake County Sanitary Engineer, its employees, agents, assistants, and assignees.

Non-Residential Property - All property other than undeveloped parcels and Residential parcels, including their commonly owned areas.

Nonstructural Stormwater Management Practice - Stormwater runoff control or treatment method that uses natural processes to control runoff and/or reduce pollution levels.

Property Owner - Any partnership, corporation or any person who alone or jointly and severally with others, either as tenants in common or otherwise has:

- a. Legal title to any real property or building, with or without accompanying actual possession thereof; or
- b. Has charge, care or control of any building as owner or agent of the owner, or as executor, executrix, administrator, administratrix, trustee, or guardian of the estate of the owner.

Any such partnership, corporation or person representing the actual owner shall be bound to comply with the provisions of this chapter to the same extent as if they were the owner.

Residential Development - That which is created primarily to house people, including the residential dwellings as well as all attendant portions of the development including lawns, driveways, sidewalks, garages, and access streets. Residential development includes single family, multi-family, apartments, and trailer parks.

Site – The entire area included in the legal description of the land on which the land development activity occurs.

Storm Sewer System or Stormwater Management Facility - A system of storm and surface water management facilities including, but not limited to: drains, inlets, catch basins, storm sewers, manholes, outfalls, channels, ditches, drainage easements, retention and detention basins and ponds, infiltration facilities, or any other constructed or natural features utilized to convey and/or treat surface water, stormwater or snowmelt.

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Stormwater Utility Fee (“Fee”) - The Fee levied on developed Residential and Non-Residential parcels pursuant to the creation of the Stormwater Utility so as to assist in implementing the LCSMD Stormwater Management Program.

Stormwater Management Program (“Program”) A comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system (Ohio EPA, NPDES permit OHQ000003)

Structural Stormwater Management Practice – Any constructed facility, structure, or device that provides storage, conveyance, and/or treatment of stormwater runoff.

Undisturbed / Undeveloped property - Real property that has not been altered from its natural state by dredging, filling, removal of trees and vegetation or other activities which have disturbed or altered the topography or soils on the property.

Water - For the purposes of stormwater management, water means stormwater, surface water or snowmelt.

1.4 Utility Fee Structure

The Fee levied by LCSMD is based on the area of impervious surface on a parcel of land. The base unit is 3,050 sq. ft. of impervious area. This value represents one (1) Equivalent Residential Unit (ERU).

All residential units are charged the base Fee of one (1) ERU. The base fee or one (1) ERU rate is \$3.50/month. Nonresidential properties are charged a base Fee calculated by dividing the impervious surface on the subject property by the impervious surface in one ERU and multiplying the result by the base rate.

When calculating the impervious area for a non-residential property, the effective areas shown in Table 1 must be used.

Table 1. Impervious Effective Area Factors

Surface	Effective Area Factor
Roof	1.0
Asphalt	1.0
Concrete	1.0
Gravel	0.75

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1.5 Utility Fee Calculation

Utility fees are calculated according to the following formula:

$$\text{Fee} = \frac{(\text{impervious area in sq. ft.}) \times (\text{effective area factor}) \times (\text{Rate})}{\text{ERU sq. ft.}}$$

For example, for a parcel with 30,500 square feet of impervious area, with 5,000 sq. ft. of the impervious area as gravel would be charged the following baseline Fee:

$$\text{Fee} = \frac{(25,500)(1.0)(\$3.50/\text{ERU}/\text{month}) + (5,000)(0.75)(\$3.50)}{3,050 \text{ sq. ft. (ERU)}} = \$33.57/\text{month}$$

This represents a Utility Fee of \$402.79 annually.

Chapter

2

Stormwater Utility Fee Credit Manual

2.0 Credit Structure Overview

2.1 Restrictions

- a. No public or private property shall receive Credit to offset Fees for any condition or activity unrelated to the LCSMD's stormwater management services.
- b. No Credit will be applied to any parcel that reduces the Fee to an amount less than one Equivalent Residential Unit Fee.
- c. Credits will not be given for drainage easements.
- d. Credits outlined in this Manual will be given for non-residential parcels only.
- e. Credit shall only be given for that portion of the Utility Fee paid by the property owner.
- f. Credit will not be granted for stormwater management practices that meet minimum requirements of state stormwater permits or local stormwater regulations, but Credits will be granted if stormwater management practices exceed minimum requirements or are installed on properties developed before stormwater management was required.

2.2 Terms

- a. Credits will only be applied if requirements outlined in this Manual are met, including, but not limited to: on-going maintenance, guaranteed right-of-entry for inspections, and submittal of annual reports.
- b. Credits will be defined as percent (%) reductions applied as a Credit adjustment to the Fee calculation equation.
- c. Credits are additive for each Credit category described in Sections 2.3 – 2.9, to a maximum of 50% of the Utility Fee.
- d. As long as the stormwater management practices are functioning as approved (as demonstrated by annual reports and LCSMD inspections), the Credit reduction will be applied to the Fee. If the approved practice is not functioning as approved or is terminated, the Credit reduction will be canceled and the Fee will return to the baseline calculation. Once the Credit reduction has been canceled, a customer may not reapply for Credit for a period of 12

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- months and only if the deficiency has been corrected, as determined by LCSMD inspection. (See Section 5 for more details.)
- e. Credits will be applied retroactively for the first year of the program, and the next billing cycle for the applications received after that.
 - f. Documentation of stormwater management practice maintenance must be submitted to LCSMD annually to continue receiving credit.
 - g. Credit application preparation may require the assistance of a licensed Professional Engineer. For applications requiring a Professional Engineer, up to a 10% additional credit will be available in each category during the first year the credit is applied for. Applicants must provide documentation verifying these expenses.

2.3 Education Credit

One of Lake County Stormwater Management Department's goals, which relates to its Public Involvement and Public Education requirements through its NPDES permit, is to provide and promote public education related to stormwater issues and management. Therefore, public or private schools and school districts (K-12) may receive credit for educating students about water quality, watersheds, and aquatic ecosystems. Schools may fulfill this requirement by coordinating with Lake County Stormwater Management Department, Lake County General Health District, or Lake Soil and Water Conservation District to offer lessons related to water quality to their students. Schools choosing this option must contact Lake County Stormwater Management Department by September 1st to schedule programming for that academic year. Alternatively, schools may use water curricula such as Project WET, Project Aquatic WILD, or GLOBE to educate their students about water quality and aquatic ecosystems. At least 20% of the student body must receive education related to water quality, watersheds, or aquatic ecosystems using one of the above methods annually in order for the school or school district to receive credit. Schools must submit annual reports documenting their educational program to receive credit.

Maximum Credit for this category is 15%. (See Option 1 in Appendices)

2.4 NPDES Industrial Stormwater Permit Credit

The Ohio Environmental Protection Agency (EPA), requires certain types of industrial facilities to obtain and comply with an NPDES Industrial Stormwater General Permit (OHR000005 and its successors) to manage and monitor stormwater runoff from industrial sites. Other industries with Individual Industrial NPDES Permits have their stormwater management regulated through Parts IV, V, and VI of those permits. Industrial facilities in compliance with the Industrial Stormwater General Permit or an Individual Industrial Permit with stormwater provisions are eligible for a 15% Credit.

Enclosure of a copy of the facility's NPDES permit, Stormwater Pollution Prevention Plan, and most recent annual report to Ohio EPA must be included with the credit

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application. The industrial facility must submit a copy of its annual report to Ohio EPA to LCSMD each year to continue to receive this Credit.

Maximum Credit for this category is 15%. (See Option 2 in Appendices)

2.5 Water Quality Credit

LCSMD encourages the use of stormwater management practices that improve water quality. Permeable pavement and green roofs will not be counted as impervious surfaces in stormwater fee calculations. If property owners install these structural stormwater management practices, they may request a recalculation of their stormwater Fees.

Properties are eligible for water quality Credits when they include a stormwater management practice that exceeds state or local requirements. This includes adding a stormwater management practice designed to improve water quality to a property developed prior to 2003 or retrofitting a stormwater management practice intended for flood control to provide water quality improvement. Credits will be awarded at the discretion of LCSMD staff based on the water quality improvement capability of the stormwater management practice and the volume treated. Credits may be granted for rain gardens, bioretention, permeable pavement, infiltration basins or trenches, sand filters or other media filters, constructed wetlands or pocket wetlands, wet extended detention, and retrofits to dry extended detention. New stormwater management practices should be designed according to the latest edition of *Rainwater and Land Development, Ohio's Standard for Stormwater Management, Land Development and Urban Stream Protection* or equivalent manual as approved by LCSMD and as indicated in the Ohio EPA General Construction Permit No. OHC000004 or its successors. Other water quality structural stormwater management practices will be considered on a case-by-case basis. Plans and design calculations are required for consideration of Credits for all stormwater management practices. A qualified, licensed professional engineer shall prepare these plans and design calculations and shall include an estimate of percent pollutant removal capabilities along with a schematic design of the proposed system. The property owner must submit data prepared by a qualified, licensed professional engineer that quantifies and demonstrates the achievement of water quality goals. This documentation may include testing, modeling, design, and/or construction data that substantiates the water quality treatment being claimed.

LCSMD will grant Credits up to 20% for water quality improvement. Credits for on-site stormwater facilities shall be generally proportional to the benefit that such systems have on complementing or enhancing the water quality benefit to the LCSMD's stormwater management system. In order to receive Credit, property access, adequate and routine facility maintenance, and annual reporting must be provided by the property owner to the LCSMD to verify that the stormwater management practice is providing its intended benefit. The actual percentage

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received will be determined through an evaluation of the system benefits provided at the time stormwater leaves the customer's property. Stormwater management practices may provide a single benefit or a combination of benefits, in which case credits will be additive. Property owners considering making stormwater improvements are encouraged to contact LCSMD to discuss potential crediting of stormwater management practices.

Maximum Credit for this category is 20%. (See Option 3 in Appendices)

2.6 Stormwater Quantity Credit

Site owners may apply for Fee Credit for substantially reducing stormwater volumes through infiltration and/or rainwater harvesting or for exceeding local stormwater detention requirements. Applicants will only receive Credit for rainwater harvesting systems if the system is allowed by the municipality or township in which the site is located. Nonresidential customers may receive Credit if they demonstrate that their structural stormwater management practices manage stormwater from their immediate property and from additional upstream drainage areas. LCSMD may reduce the Credit awarded if structural stormwater management practices or impervious surfaces on the property encroach into riparian or wetland buffers.

Credits for quantity control by stormwater management practices will be based upon hydrologic data, design specifications, and other pertinent data supplied by qualified, licensed professional engineers on behalf of property owners. Credits for on-site stormwater facilities shall be generally proportional to the benefit that such systems have on complementing or enhancing the water quantity benefit to LCSMD's stormwater management system. Property access, adequate and routine facility maintenance, and annual reporting must be provided by the property owner to the LCSMD to verify that the stormwater management practice is providing its intended benefit in order to receive Credit reduction as applied to the Fee calculation equation. Property owners considering making stormwater improvements are encouraged to contact LCSMD to discuss potential crediting of stormwater management practices.

Maximum Credit for this category is 20%. (See Option 4 in Appendices)

2.7 Sample Fee Recalculation

Stormwater management practices may provide a single benefit or a combination of benefits, in which case credits will be additive. The Credit options have a maximum additive credit capacity of 50%. In cases where 50% Credit is achieved, the minimum

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per parcel Fee is the equivalent residential unit Fee. As an example of how a Fee Credit would be applied, imagine a parcel that receives the following Credits:

1. NPDES Industrial Stormwater Permit Credit	15% (max 15%)
2. Education Credit	0% (max 15%)
3. Water Quality Credit	10% (max 20%)
4. <u>Stormwater Quantity Credit</u>	<u>10% (max 20%)</u>

OPTIONS 1-4 CREDIT SUBTOTAL 35%

To determine the example Fee, assume the parcel has 30,500 square feet of impervious area. The baseline Fee calculation would be as follows:

$$\text{Fee} = \frac{(\text{impervious area in sq/ ft.}) \times (\text{Rate})}{\text{ERU sq. ft.}}$$

$$\text{Fee} = \frac{(30,500)(\$3.50/\text{ERU}/\text{month})}{3,050 \text{ sq. ft. (ERU)}} = \$35.00/\text{month}$$

Assuming documentation has been provided to prove that all the Program criteria described in the Manual have been and continue to be met, this example customer would receive a 35% Credit adjustment, changing the equation to:

$$\text{Fee} = \frac{(30,500)(\$3.50/\text{ERU}/\text{month})(1-.35)}{3,050 \text{ sq. ft. (ERU)}} = \$22.75/\text{month}$$

This is a savings of \$12.25 per month, which represents an annual savings of \$147.00 for each year the Program criteria are met.

Chapter

3

Stormwater Utility Fee Credit Manual

3.0 Application Procedures

A property owner seeking a Fee Credit must comply with the procedures outlined in this Manual and must submit a Fee Credit application (provided in Appendix A). All information necessary for the LCSMD Director or designated agent to make a determination must be supplied as outlined in the Manual and the Credit application. Failure to comply with the procedures outlined in the Manual will result in a denial of the Credit application.

In cases requiring a hydrologic analysis, a qualified professional engineer registered in the State of Ohio must prepare and certify the documentation provided to verify the hydrologic benefit.

Chapter

4

Stormwater Utility Fee Credit Manual

4.0 Review Process and Credit Implementation

The LCSMD Director or designated agent will review Credit applications within sixty (60) days of receipt of a complete application that contains the information necessary for determination of the applicant's eligibility for a Credit. A determination of the Credit value will be mailed to the applicant and the tax bill will be adjusted accordingly for the following year.

Adjustments of Fees shall be made retroactive for the time period that the service was in place, but for no more than the previous year billing cycle (based on the date the complete Credit application is received by the LCSMD).

Appeals of Credit decisions may be made to the Drainage Engineer by sending a formal written Request for Appeal of Stormwater Credit Determination. If the Drainage Engineer awards an alternate Credit determination, adjustments of Fees shall be made retroactive for the time period that the service was in place, but for no more than the previous year billing cycle (based on the date the complete Credit application is first received by the LCSMD).

Questions on the Credit policy may be directed to the LCSMD at (440) 350-5900.

Stormwater Utility Fee Credit Manual

5.0 Enforcement Policy

The LCSMD reserves the right to review the application for accuracy and/or inspect and review documentation and stormwater management practices confirming the provision of their function at any time. If, after its review or inspection, the LCSMD finds the application to be inaccurate or the projected level of service is not being provided or continued, the customer will be notified in writing and given 45 days to correct the deficiency. The property owner must provide written documentation to the LCSMD Director within 45 days of the original notice by the LCSMD that the stormwater management practice is being provided or continued as agreed in addition to such evidence as the LCSMD Director reasonably requires showing that the deficiency has been corrected. If, in the opinion of the LCSMD Director, the deficiency is not satisfactorily corrected, the Fee Credit attributable to the deficiency will be terminated on the following billing cycle and will remain in effect for a minimum of 12 months. Reapplication for Fee Credit will not be reviewed until the delinquent stormwater management practice has been adequately reinstated for three continuous months and evidence of the corrections has been provided with the reapplication.

Annual reports will be required every January 30th to document service provision for the preceding calendar year. If the reports are incomplete or are not submitted to the LCSMD by the required date, the property shall be considered to be in non-compliance with the Credit Program requirements. Non-compliant properties will lose the Credit benefit and the Fee Credit suspension will remain in effect for a minimum of 3 months and will not be reinstated until the complete annual report is received with documentation that the program is being implemented as intended.

Once the Credit reduction has been canceled, a customer may not reapply for that particular Credit for a period of 12 months and then only if the deficiency has been corrected, as determined by LCSMD inspection. It will be the responsibility of the customer to prove the stormwater management goals are met prior to the Credit being reissued.

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APPENDIX A
Credit Application

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Lake County Stormwater Management Department

Stormwater Credit Application

(Please Type or Print)



Check One:

- This is the first application for Credit for this property.**
- This is a reapplication for renewed Credit after a Credit suspension.**

If this is a first application, please address all questions and provide documentation that stormwater management practices will be in place within 60 days of submitting this application. Existing stormwater management practices will require proof of implementation, while new stormwater management practices will require the submittal of implementation plans.

If this is a reapplication for renewed Credit after a Credit suspension, please complete Part I and provide all Options listed in Part II that were suspended. Evidence that the deficiency resulting in the Credit suspension was corrected for *at least three months prior to reapplication* must be attached to the reapplication.

PART I. GENERAL INFORMATION

1. Customer Contact Information:

Name/Title _____

Company _____

Address _____

Phone _____ E-mail _____

2. Property Parcel ID #(s): _____

3. Property Address/Description: _____

4. Authorized Representative (if applicable) Contact Information:

Name/Title _____

Address _____

Phone _____ E-mail _____

NOTE: Please provide specific responses to the following questions, using additional pages if necessary, to provide a complete and comprehensive application.

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Option 2. NPDES Industrial Stormwater Permit Credit

1. Attach a copy of your NPDES Industrial Stormwater Permit or Individual Industrial NPDES Permit.
2. Attach a copy of the Stormwater Pollution Prevention Plan for your facility.
3. Attach a copy of your facility's most recent annual report to Ohio EPA.

For Office Use Only

Option 2. NPDES Industrial Stormwater Permit Credit Awarded

_____ %
(15% max)

(date)

(initials)

APPENDIX A

Option 3. Water Quality Credit Application

Please attach the following items to show that the property meets the Fee Credit criteria. If applying for Credit for multiple stormwater management practices, please attach additional required sheets.

1. Site Plan(s) showing:
 - Property location with parcel boundaries
 - Impervious areas (IA)
 - Description, location, size and design features of stormwater management practice(s)
 - Location of any streams, wetlands, ponds, or other water bodies on the property
 - Topography and drainage boundaries for stormwater management practices and their associated % discharges
 - Drainage discharge locations to off-site properties (natural and constructed), water bodies, or stormwater conveyance systems

2. Stormwater management practice plans and design calculations including:
 - Total Site Area = _____ acres
 - Soil map unit(s) on the site and any additional information about the soils
 - Drainage Area (DA) to stormwater management practice = _____ acres
 - Area of impervious surface draining to stormwater management practice = _____ acres
 - Runoff Coefficient = _____

3. Water Quality Volume (WQ_v) calculations
The WQ_v shall be equivalent to the volume of runoff from a 0.75 inch rainfall and shall be determined according to one of the two following methods:
 - Calculate using the following equation and tables:
$$WQ_v = C * P * A/12$$

Where:
WQ_v = water quality volume in acre-feet
C = runoff coefficient appropriate for storms less than 1 inch (C = 0.858i³ – 0.78i²+ 0.774i +0.04 or use Table 1)
P = 0.75 inch precipitation depth
A = area draining into the stormwater management practice in acres

Table 1. Runoff Coefficients based on Land Use

Land Use	Runoff Coefficient
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5

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Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acres)	0.3
Open Space and Recreational Areas	0.2

Where land use will be mixed, the runoff coefficient should be calculated using a weighted average.

4. Maintenance plan and schedule for stormwater management practice(s)
5. Authorization for LCSMD staff to enter the property as needed to inspect the stormwater management practice(s).
6. Any additional information that you would like LCSMD to consider when calculating water quality credit for stormwater management practice(s).

For Office Use Only

Option 3. Water Quality Control Credit Awarded

_____ %
(max 20%)

(date)

(initials)

APPENDIX A

Option 4. Stormwater Quantity Credit Application

1. Please attach the following items to show that the property meets the Fee Credit criteria. If applying for Credit for multiple stormwater management practices, please attach additional required sheets.

- Site Plan(s) showing:
 - Property location with parcel boundaries
 - Impervious areas (IA)
 - Description, location, size and design features of stormwater management practice(s)
 - Location of any streams, wetlands, ponds, or other water bodies on the property
 - Topography and drainage boundaries for stormwater management practices and their associated drainage areas (including off-site areas that stormwater management practices capture runoff from)
 - Drainage discharge locations to off-site properties (natural and constructed), water bodies, or stormwater conveyance systems
- Stormwater management practice plans and design calculations including:
 - Total Site Area (TA) = _____ acres
 - Site Drainage Area (DA) to Stormwater Management Practice (SMP) = _____ acres
 - Percent Run-off to SMP = $DA / TA \times 100 =$ _____ %
 - Soils information

2. For the flow generated on-site that is routed through this stormwater management practice, show your calculations for pre- and post-development run-off rates based on design storm events and published average run-off coefficients for the land use applicable to this property or a stormwater model. Use a format similar to that shown below.

Pre-Development (Q_{pre}) run-off for DA to SMP = _____ cfs

Post-Development (Q_{post}) run-off without SMP for DA to SMP = _____ cfs

Post-Development (Q_{post}) run-off with SMP for DA to SMP = _____ cfs

% Run-Off Rate Red. Calc. = $\frac{(Q_{post} \text{ without SMP} - Q_{post} \text{ with SMP}) \times \% \text{ run-off through SMP}}{Q_{post} \text{ without SMP} - Q_{pre}}$

% Reduction = _____ %

3. For rainwater harvesting, provide information regarding rainwater storage volume, rainwater uses, and usage rate.

4. If seeking credit for exceeding stormwater detention requirements for flood control, provide relevant information to substantiate this claim including storage capacity of

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stormwater management practice relative to design storms and peak discharge requirements, release rate of water stored, and drainage area to stormwater management practice relative to property size.

5. Maintenance plan and schedule for the stormwater management practice(s).

6. Authorization for LCSMD staff to enter the property as needed to inspect the stormwater management practice(s).

Option 4. Stormwater Quantity Credit Awarded

_____ %
(max 20%)

(date)

(initials)

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The application packet should consist of the completed application form and a copy of all necessary documentation, including the applicable site plans that will allow for a complete review of the site and existing stormwater management practices. Incomplete applications will not be processed.

Submit the application, plans, and calculations to:

Lake County Stormwater Management Department
125 East Erie St.
Painesville, OH 44077

Signature of Owner

Date

Signature of Licensed Professional Engineer
Providing Hydrologic Evaluation

Date

Summary Credit Calculation

FOR OFFICE USE ONLY

OPTIONS 1-4 (WITH MAXIMUM ADDITIVE CREDIT CAPACITY = 50%)

- | | |
|--|-----------------|
| 1. Education Credit | _____ (max 15%) |
| 2. NPDES Industrial Stormwater Permit Credit | _____ (max 15%) |
| 3. Water Quality Credit | _____ (max 20%) |
| 4. Stormwater Quantity Credit | _____ (max 20%) |

OPTIONS 1-4

CREDIT TOTAL _____ (max 50%)

Professional Credit = _____% (must supply appropriate invoices)

Fee Credit Adjustment Factor = $1 - (\% \text{ credit}/100) =$ _____

NOTE: The minimum per parcel Fee = Residential Fee

(date)

(initials)

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Annual Report Forms

APPENDIX A

Lake County Stormwater Management Department

Stormwater Annual Report

(Please Type or Print)



Annual reports will be required every January 30th to document service provision for the preceding calendar year. If the reports are incomplete or are not submitted to the LCSMD by the required date, the property shall be considered to be in non-compliance with the Credit Program requirements. Non-compliant properties will lose the Credit benefit and the Fee Credit suspension will remain in effect for a minimum of 3 months and will not be reinstated until the complete annual report is received with documentation that the program is being implemented as intended.

PART I. GENERAL INFORMATION

1. Customer Contact Information:

Name/Title _____

School _____

Address _____

Phone _____ E-mail _____

2. Date _____

3. Property Parcel ID #(s): _____

4. Property Address/Description: _____

5. Authorized Representative (if applicable) Contact Information:

Name/Title _____

Address _____

Phone _____ E-mail _____

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PART II. CREDIT INFORMATION

Option 1. School Stormwater Education Credit

Classes educated by Lake County Stormwater Management Department (LCSMD), Lake County General Health District (LCGH), or Lake Soil and Water Conservation District (SWCD)

Teacher Name	Grade	Agency Presenting	Date(s)	# Students	School

Classes educated using Project WET, Project Aquatic WILD, or GLOBE curricula

Teacher Name	Grade	# Students	School	Curricula Used	Lessons	Dates

I hereby certify that the information provided in this application is true.

Signature of administrator or teacher _____

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Option 2. NPDES Industrial Stormwater Permit Credit

Attach a copy of your facility's most recent annual report to Ohio EPA.

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Option 3. Water Quality Credit

1. Attach a copy of the maintenance plan for the stormwater management practices.
2. List all maintenance performed on stormwater management practices and dates work was completed.

3. Provide information on who performed maintenance activities.

4. Attach a minimum of 4 current photographs that show inlets and outlets to the stormwater management practice(s) and its/their overall condition.

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Option 4. Stormwater Quantity Credit

1. Attach a copy of the maintenance plan for the stormwater management practices.
2. List all maintenance performed on stormwater management practices and dates work was completed.

3. Provide information on who performed maintenance activities.

4. Attach a minimum of 4 current photographs that show inlets and outlets to the stormwater management practice(s) and its/their overall condition.

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PART III. REPORT PREPARATION

1. Contact Information for person completing report:

Name/Title _____

Address _____

Phone _____ E-mail _____

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Chagrin River Watershed Partners, Inc. received funding from the Lake Erie Protection Fund (www.lakeerie.ohio.gov) to help LCSMD update the credit manual and produce this publication. The LEPF is supported by tax-deductible donation and voluntary contributions of Ohioans who purchase a Lake Erie license plate featuring the Marblehead lighthouse, Toledo Harbor lighthouse, or Lake Erie life preserver.

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Stormwater Utility Literature Review

Overview

Formation of stormwater utilities and collection of stormwater fees is one mechanism that communities can use to maintain, replace, and upgrade their stormwater infrastructure and to comply with their Municipal Separate Storm Sewer (MS4) National Pollutant Discharge Elimination System (NPDES) permits. Most stormwater utilities bill based on Equivalent Residential Units (ERUs), which is usually defined as the average amount of impervious surface on a residential parcel (Campbell 2013). Other stormwater utilities charge customers flat fees or link stormwater fees to water usage or on the amount of runoff generated from a residential parcel for a given design storm (Campbell 2013). The ERU system is based on the “polluter pays” principle (Brooks 2010). Increases in impervious area result in more stormwater runoff that causes flooding, erosion, and water quality problems that communities need to address. Rosenbloom et al. (2013) and U.S. EPA (2009) illustrate how stormwater utility fees can contribute to a larger community-wide strategy to promote effective stormwater management.

Western Kentucky University has identified 1,412 stormwater utilities in 39 states and the District of Columbia in the United States (Campbell 2013). Nationwide, the median monthly single family residential stormwater fee is \$3.75 and the average is \$4.57 (Campbell 2013). The average ERU is 3,050 square feet of impervious cover (Campbell 2013).

Campbell (2013) found 100 stormwater utilities in Ohio. Of these, eleven have stormwater fee credit manuals available online. Many Ohio stormwater utilities do not offer credits for reducing their fees. Of the Ohio stormwater utilities that offer fee credits, maximum credit amount varies from 50% to 100%. Lucas County, Butler County, Lake County, the City of Lancaster, and the City of Toledo allow for a maximum credit of 50% of the fee. Portage County allows for a maximum credit of 75% of stormwater fees for churches and schools; other non-residential property owners can receive a maximum credit of 50% of the fee. Groveport’s maximum credit is 60%. Hamilton’s maximum credit of 65% is well justified in its manual with a statement that 35% of the utility’s costs are related to services that customers cannot provide including planning, administration, and regulatory compliance. The City of Hilliard offers up to 80% fee credit. The Northeast Ohio Regional Sewer District and the City of Columbus offer up to 100% fee credit.

Stormwater utility fee credits can achieve a range of objectives for communities, which are often linked to the reasons why the stormwater utility was formed. Some communities use them to incentivize installation of stormwater control measures on private property that communities do not have direct jurisdiction over in order to help address water quantity or quality problems. The City of Toledo is an example of a community that used this approach with its fee credit system. This strategy can be taken further to incentivize specific types of stormwater control measures such as green infrastructure that communities would like to encourage. It can also grant bonuses for installing stormwater control measures in high need areas. Many communities credit activities that help comply with MS4 permit requirements such as public education and public involvement. Some communities use stormwater fee credits to compensate property owners for doing maintenance on components of the MS4. Butler County and the City of Lancaster reward brownfield reuse with stormwater fee credits. Butler County also offers credit for stream restoration. Sometimes credit availability is offered to increase the perception of fairness of stormwater fees since then property owners that contribute to stormwater management pay less than those that do not (American Rivers (no date)). In addition

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to fee credit programs, U.S. EPA (2009) notes that stormwater utility fees can incentivize reduction of impervious area if stormwater fees are based on impervious area.

Stormwater Quantity and Quality Credits

Incentivizing installation and maintenance of stormwater control measures on private properties is the primary goal of some stormwater utility fee credit programs. Stormwater utility fee credits are most effective at encouraging stormwater control measure installation when fee and credit amounts are high enough that fee savings exceeds the cost of stormwater control measure installation in a reasonable timeframe (Valderrama and Levine 2012).

NEORS D offers credit for peak discharge control, volume reduction, and water quality treatment. For peak discharge control, 25% credit is available for SCMs designed using the critical storm method, 15% for meeting member community or NEORS D Title IV detention standards other than the critical storm method, and 10% for existing on-site detention SCMs that lack documentation that they meet critical storm or current community detention standards. For runoff reduction, SCMs receive a 25% credit for preventing post-development runoff from exceeding pre-development runoff for the 2-year, 24-hour design storm for sites that are < 50% existing impervious. For sites > 50% impervious, SCMs must reduce the pre-development 2-year, 24-hour design storm by 25%. SCMs that prevent the post-development 100-year, 24-hour design storm from exceeding the pre-development runoff receive a 50% credit. If wetlands or streams are present on the site development must abide by riparian or wetland setbacks in order to be eligible for runoff reduction credits. NEORS D grants credit for water quality SCMs that treat the water quality volume. 25% credit is given for bioretention, infiltration basins, constructed wetlands, subsurface gravel wetlands, and rainwater harvesting; 15% credit is granted for sand/media filtration, permeable pavement, tree filters, infiltration trenches, wet extended detention, and enhanced water quality swales; 10% credit is received for vegetative swales, dry extended detention basins, and manufactured units that remove 80% TSS. Only impervious areas that drain to SCMs are eligible for reductions of stormwater fees. NEORS D requires annual recertification of credits. Stormwater quality, quantity, and education credits can be combined up to a maximum credit of 100%.

The City of Columbus offers credits for peak flow management and green infrastructure. Customers can receive credit for managing peak flow from the 100-year storm in a manner that exceeds City requirements (runoff from the 100-year post-development storm must be less than the 10-year pre-development storm). The rate of critical storm discharge must also be less than the predevelopment 1-year, 24-hour storm to receive peak flow credit. An engineering analysis is required for the peak flow credit. Customers eligible for this fee can also receive a reduction in the "Clean River Fee," which is a sanitary sewer charge related to helping the City reduce wet weather overflows from its sewers. Maximum peak flow credit is 80%. Columbus also grants non-residential property owners credit for using green infrastructure (bioretention, permeable pavement with infiltration, green roofs, and rainwater harvesting) to meet stormwater management requirements. Property owners can receive 25% credit for meeting water quality requirements using only green infrastructure and 100% credit for meeting water quantity and water quality requirements using only green infrastructure.

Lucas County grants 10% credit for detention or retention basins built prior to 2003 in compliance with the *Lucas County Subdivision Regulations Manual*. Lucas County grants up to 30% credit for detention/retention exceeding County standards, water quality ponds, vegetated swales/grass filter strips, grass lined conveyance channels/dry swales, riparian water quality

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buffers, percolation/infiltration trenches, constructed wetlands, permeable pavement, green roofs, and bioretention/rain gardens. Water quality credits are granted at the discretion of the utility.

Portage County grants 25% credit for green roofs, 5% credit for rain barrels with a water use program, 10% credit for rain gardens, 20% credit for managing the volume of water such that the runoff volume from a 2 year event does not exceed predevelopment conditions, up to 10% credit for maintaining SCMs designed to treat the water quality volume, and 50% credit for adjacency to undeveloped parcels protected with conservation easements. These regulations indicate that other forms of green infrastructure can be credited if approved by the utility.

The City of Toledo offers credits for water quality SCMs, water quantity SCMs, and offers an extra 25% discount for properties within priority zones with SCMs. Toledo's credits are based on the portion of the impervious area treated by an SCM. At least 10% of the impervious area on a site must be treated by an SCM for a property to be eligible for the 25% discount. Water quantity credit is available based on the size of the design storm. Detaining the 100-year storm year qualifies for a 100% credit on the property fee portion of the stormwater fee, while managing the 25-year storm year qualifies for a 25% credit. Permeable pavement, infiltration basins/trenches, rain gardens, sand filters, and swales are eligible for 50% water quality credit of the property fee component of the stormwater fee. Catch basin inserts, green roofs, retention basins, grassed channels, and vegetated filter strips can receive 25% water quality credit. Property owners must reapply for credits every 5 years and when the property transfers ownership.

The City of Lancaster offers a 10% credit for retention/detention facilities that meet City standards, an additional up to 10% credit for providing additional retention/detention for water quality purposes or benefitting upstream or downstream properties by providing more than required storage, and an additional 10% for demonstration projects. Lancaster also offers credits of up to 20% for preservation of special flood hazard areas or creation of flood storage basins.

The City of Hamilton offers water quality credits to property owners that have vegetated swales and filter strips, infiltration and percolation basins, percolation trenches, buffer strips and swales, permeable pavement, extended detention basins, retention basins, constructed wetlands, or media filtration constructed according to Urban Runoff Quality Management – WEF Manual of Practice No. 23. Detention basins, retention basins, storm sewers, storm culverts, and stormwater channels may be eligible to receive quantity credit. Nonresidential property owners can receive water quality and/or water quantity credits if they manage stormwater from upstream drainage areas in addition to managing stormwater generated on their property. Property owners receive some credit if they manage stormwater from an upstream area larger than the size of their property but less than or equal to 0.5 square mile. Property owners that manage stormwater from an upstream area larger than the size of their property larger than 0.5 square mile receive more credit. Separate credits are granted for capital expenditures and operation and maintenance of stormwater control measures. Property owners can receive a maximum quantity credit of 25.2% and a maximum quality credit of 39.6%.

The City of Groveport offers 10% credit for detention/retention facilities that exceed the City's peak discharge requirements. Additional credits of 10% (each) can be received if the detention/retention facilities benefit upstream or downstream properties not covered by a joint use agreement and for demonstration projects for specific site conditions approved by the City Engineer.

Butler County, Ohio grants credits for vegetative stream buffers, grass filter strips, infiltration trenches, water quality ponds, and stream channel restoration. However, their credit

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manual indicates that properties that fall under the statewide construction general permit are not eligible for credits. Up to 50% credit is available for water quality stormwater control measures. 10% credit is granted for 100-foot vegetated stream buffers, 15% credit is granted for 125-foot vegetated stream buffers, and 20% credit is granted for 150-foot vegetated stream buffers. 15% credit is granted for infiltration trenches. The following pond retrofits or components each earn a 10% credit: extended detention, wet pool and reverse flow pipe, aquatic benches and wetlands, optimum flow length and optimum pool depth, and a forebay and shading. Grass filter strips with a 75% particulate trapping efficiency receive 15% credit; those with 90% particulate trapping efficiency receive 30% credit. Stream restoration can receive up to 100% credit for up to 20 years.

The City of Hilliard stormwater utility has a credit program, but no property owners have applied for credit as of the 2015 annual stormwater report. Non-residential property owners can receive 10 to 50% for peak flow reduction. Peak flow credits are based on the percent reduction in the 100-year storm peak flow rate and the amount of impervious surface draining to the stormwater control measure. Property owners can also receive additional credit of up to 10% for exceeding the City's detention requirements – each percent of detention volume in excess of City requirements yields on tenth of a percent of credit. Property owners can also earn up to 10% for installing infiltration basins, infiltration strips, rain gardens, or bioretention as demonstration projects.

Lake County offers up to 20% credit for stormwater quantity management and up to 20% for water quality management. Non-residential customers can receive credit for retrofitting flood control basins to provide water quality treatment or by installing stormwater control measures that improve water quality on sites developed prior to 2003. Quantity credit can be received for substantially reducing stormwater volumes through infiltration and/or rainwater harvesting or for exceeding local stormwater detention requirements. Applicants only receive credit for rainwater harvesting systems if the system is allowed by the municipality or township in which the site is located. Quantity and quality credit amounts are determined by Lake County on a case-by-case basis based on the benefits provided.

NEORS, Lancaster, and Lucas County require annual documentation of stormwater management practice maintenance for applicants to continue to receive credit for these stormwater management practices. Toledo requires recertification of credits every 5 years, and Portage County requires recertification each NPDES Phase II permit term.

Industrial NPDES Permits

NEORS grants a 25% credit to businesses in compliance with an Industrial General Permit, Marina General Permit, or an Individual Industrial Permit with stormwater provisions. NEORS also credits industries with a no exposure certificate from Ohio EPA. NEORS does not allow businesses to receive both water quality and Industrial NPDES credit. Lucas County offers credits of up to 10% for compliance with an Industrial NPDES permit. Lancaster gives up to 30% credit to property owners complying with Industrial Stormwater or their own MS4 permits. Butler County grants a 20% credit for industries complying with individual industrial stormwater permits or to other MS4s complying with an MS4 permit. Lake County offers 15% credit for complying with an Industrial General Permit or an Individual Industrial Permit with stormwater provisions.

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Education Credits for Schools

Many utilities offer schools credits for incorporating stormwater education into their curricula. The Northeast Ohio Regional Sewer District (NEORS) offers a fee reduction of 25% if schools provide approved education to at least 25% of the grade levels of the school or district. NEORS offers curriculum materials for grades 3, 5, 7, and 10. Portage County schools that implement Project Learning Tree, Project WILD, or Project WET curricula and engage in staff training are eligible for 50% credit. Schools that install a water quality SCM with an education component or install and use a land lab and implement Project Learning Tree, Project WILD, or Project WET curricula and staff training receive 75% credit. Lucas County grants credits up to 50% for using Project Aquatic WILD, Project WET, GLOBE or other similar curricula to teach 20% of the student body each year and conduct one awareness activity such as a water festival day, poster contest, or litter collection for 20% of the students. Groveport offers a credit of up to 50% for stormwater education provided by schools and does not require a credit application fee for the education credit. Schools need to reach at least 35% of students to receive credit. They may use curriculum materials such as Project WET or Project Aquatic WILD, an essay or poster contest, provide website, brochure, or public service announcement development, or do a service project with participation of 5% of the students to receive credit. Lancaster grants education credits of up to 50% to schools that reach 15% of the students with a stormwater curriculum, engage 15% of students in a poster or essay contest, involve 5% of students in a service project, or provide website, brochure, or public service announcement development. Butler County provides 30% credit to schools that integrate stormwater education into their curriculum using materials such as Project WET or Project Aquatic WILD and including activities such as essay and poster contests. The City of Hilliard offers up to 50% credit to schools for reaching 35% of the student population through incorporation of stormwater education curriculum materials such as Project WET or Project Aquatic WILD or activities such as essay or poster contests or involving 5% of students in public service activities such as stream clean ups or assisting with the City's production of educational materials. Lake County grants 15% credits to schools for educating 20% of the students annually through presentations by Lake County stormwater staff or its partners or use of materials such as Project WET, Project Aquatic WILD, or GLOBE. Utilities generally require annual reporting for schools to demonstrate compliance with requirements.

Public Involvement or Adult Education Credits

Lucas County offers 30% credit for participation in an Adopt-a-Stream/Road or stream clean-up program, and 5% credit for participation in the following activities: water festival day, storm drain stenciling program, poster contest, brochure development, essay contest, public service announcement, litter collection day, multimedia, or County staff presentation to business facility. Butler County offers 5% credit for participation in each Adopt-a-Stream event up to a maximum of 30%. Lancaster grants up to 10% credit for participating in an Adopt-a-Road program or up to 10% credit for participating in a City sanctioned clean-up program. The City of Groveport offers credits up to 20% for participation in Adopt-a-Stream/Park/Road or a City sanctioned clean-up program.

Portage County offers schools 25% credit for classroom staff participating in curriculum workshops (Project Learning Tree, Project WILD, or Project WET) and non-classroom staff participating in pollution prevention workshops led by Portage SWCD staff. Portage County grants churches 25% credit for distributing educational stormwater literature and having a water

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quality display, 50% credit for installing a SCM and educating the congregation annually about it and distributing educational stormwater literature and having a water quality display, and 75% credit for conducting an annual service event related to water quality, installing a SCM and educating the congregation annually about it and distributing educational stormwater literature and having a water quality display. Portage County grants nonresidential property owners (other than schools, churches, and farmers) 5% credit for display of stormwater educational materials.

Maintenance Credits

Columbus grants non-residential customers fee reductions for maintaining open stormwater conveyances that would otherwise be maintained by the City. Credits are \$0.75 per linear foot per year for channels draining less than 10 acres and \$1.50 per linear foot per year for channels draining more than 10 acres. To receive the maintenance credit, property owners must keep the channel free of materials that limit the flow of water, repair erosion, and remove accumulated sediment. A site plan and maintenance plan is required for the maintenance credit. Credit amount cannot exceed fee amount.

The City of Groveport offers credits for private maintenance of open channels that would otherwise be maintained by the City. Up to 30% credit is given for maintaining public open channels (requires a \$500 application fee). Lancaster and Hilliard both grant up to 30% credit for maintaining public open channels.

Agricultural Credits

NEORSD and Portage County grant credits to agricultural property owners implementing conservation plans. Property owners with Conservation Plans certified by a U.S. Department of Agricultural National Resources Conservation Service (NRCS) District Conservationist or Forest Management Plans approved by an Ohio Department of Natural Resources (ODNR) Service Forester receive 15% credit from NEORSD. Property owners with Comprehensive Nutrient Management Plans or Prescribed Grazing Plans certified by a NRCS District Conservationist receive 25% credit. NEORSD classifies these credits as water quality credits, and the total amount of water quality credit cannot exceed 25% of the fee amount. Property owners in Portage County with more than 4 parcels operated by a producer following a farm plan approved by NRCS or Portage Soil and Water Conservation District can receive up to 50% credit. Portage County property owners with multiple adjacent parcels less than two acres enrolled in the Current Agricultural Use Valuation program can also receive up to 50% credit.

Residential Credit Programs

NEORSD is the only Ohio stormwater utility that offers a residential fee credit program. Individual residential property owners can receive a 25% credit for effectively implementing rain gardens, on-site-stormwater storage, impervious surface reduction, permeable pavement, or vegetated filter strips. In order to receive credit, rain gardens must treat runoff from at least 25% of the house's roof or equivalent impervious area. 50% of the house's roof must be directed to rain barrels, cisterns, or rain bladders that provide at least 40 gallons of storage per downspout and storage containers must be drained in no less than 24 hours and no more than 4 days after a rain event. Cisterns or rain bladders can also be used as long as they hold the runoff from an inch of rain for at least 50% of the property's area. A simple calculation is provided to help homeowners size their cisterns. Replacing 500 or more feet of impervious area with vegetated pervious area earns the impervious surface reduction credit. Residents can earn the permeable

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pavement credit by installing at least 1,000 square feet of permeable pavement that has a stone reservoir depth of at least 10 inches and meets municipal standards for driveway installations. If 50% of a property's roof area travels through a fully vegetated area at least 50 feet long with a minimal slope, a vegetated filter strip credit is granted. Documentation of maintenance of these SCMs is required to continue to receive credit (recertification occurs every 3 years). Residential property owners can also receive credit for stormwater storage provided by stormwater control measures that detain water from their subdivisions with appropriate documentation of their function.

At least a few stormwater utilities outside of Ohio also offer fee credit reductions for residential customers. The City of Minneapolis, Minnesota offers residential credit users the opportunity for credit reductions. Residents can receive water quality credits if they install and maintain rain gardens, permeable pavers, wet ponds, dry wells, sand filters, filter strips, infiltration trenches, or green roofs. Credit discounts are based on the percent of impervious area treated by SCMs. Residential property owners can also receive credit for stormwater storage provided by SCMs that detain water from their subdivisions with appropriate documentation of their function.

Oshkosh, Wisconsin offers residential customers stormwater fee credit for installing rain gardens or rain barrels or equivalent stormwater control measure with documentation of function. Rain gardens receive up to a 75% stormwater fee credit and rain barrels receive up to a 25% fee credit. Oshkosh also offers credits to residents that drain directly into a water body without using City storm sewers. Oshkosh residents must pay a \$10 application fee to apply for stormwater fee reduction.

The City of Harrisonburg, Virginia offers credits for downspout disconnection, rain gardens, vegetated filter strips, rain barrels/cisterns, tree planting, conservation landscaping, homeowner nutrient management and lawn care agreement, impervious cover reduction. If 50% of the roof is disconnected from the storm sewer network by traveling through a lawn or to an SCM, the property owner receives a 10% credit. If 100% of the roof is disconnected, the property owner receives a 20% credit. Rain gardens that treat runoff from 25% of the impervious surface on a parcel receive a 25% credit and rain gardens that treat runoff from 50% of the impervious surface on a parcel receive a 50% credit. Residents can receive a 10% vegetated filter strip credit if downspouts are directed into fully vegetated areas with minimal slope that are at least 25 feet long and not treated with fertilizers and pesticides. The City waives its Tall Grass and Weeds Ordinances within dedicated vegetated filter strips that meet these criteria. Harrisonburg offers 20% credit to homeowners that use rain barrels or cisterns. Tree planting credit of 10% is given to homeowners that have canopy coverage on at least 20% of their parcel. Planting mulch beds with perennials, shrubs and/or small trees earns a credit of 10%. Native plants and organic mulch are recommended for this conservation landscaping credit. Homeowners that commit to adhering to measures to reduce fertilizer and pesticide use receive a 10% credit. Impervious cover reduction results in fee savings because Harrisonburg's fees are based on each 500 feet of impervious surface. Homeowners must grant the City the right to inspect the SCMs and must provide evidence of maintenance at least every 5 years to continue receiving the credit. Homeowners whose stormwater is treated by a regional SCM that they contribute to the maintenance of are eligible for 15-50% credit depending on whether the SCMs were built to comply with the Virginia Stormwater Management Program and the City's Stormwater Management Ordinance.

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Lynchburg, Virginia allows its residential customers to earn up to 50% reduction of their stormwater fees by implementing stormwater control measures. Treating 50% of a property's impervious area with a rain garden receives 20% credit. If 50% of a property's roof area drains to vegetated filter strips that have a minimum flow length of 50 feet with a slope of 5% or less and a splash block is used, residents receive 20% credit. Residents can direct 50% or more of their roof area to self-emptying rain barrels that drain 24-48 hours after a rainfall for a 20% credit. At least one gallon of storage must be provided for every 3 square feet of roof area with the goal of storing the 0.5 inch rain event. If at least 1,000 square feet of permeable pavement is installed with at least 10 inches of reservoir storage, the property owner receives a 20% credit. The City requires photos of installed stormwater control measures with credit applications. A construction photo illustrating the depth of stone underlying permeable pavement is required for permeable pavement credit.

Portland, Oregon allows residents to receive discounts of up to 35% of their stormwater fee by managing their roof runoff using downspout disconnection, rain gardens, dry wells, infiltration trenches, or green roofs. Residents can also receive discounts for having less than 1,000 square feet of impervious surface on their properties and/or more than 4 trees taller than 15 feet.

Conclusions

Maximum credit amounts of Ohio stormwater utilities that grant stormwater fee credits range from 50 to 100%. For utilities that credit stormwater quantity management (all that have credit programs except Butler County), credit amounts range from 20% to 80%. All Ohio stormwater utilities offer some form of water quality credits – amounts range from 10% to 50%. 10% to 30% credit is granted by five Ohio stormwater utilities for compliance with an industrial NPDES stormwater permit. Education credits for schools range from 15% to 75% of the stormwater fee amount for the eight utilities that credit schools for education. Four utilities grant between 30% and 100% credit for private maintenance of publicly owned open channels within the MS4. Utilities that credit public involvement or adult education award 5% for 35% for this activity. One Ohio stormwater utility offers 25% credit to residential properties that install stormwater control measures.

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Summary of Findings on Feasibility of Implementing a Lake County Stormwater Management Department Residential Credit Program

INTRODUCTION

Most stormwater utilities in Ohio do not offer fee credits to residential customers. Northeast Ohio Regional Sewer District (NEORS) does have a residential stormwater fee credit program. The City of Columbus does not have a residential fee credit program, but does offer rebates to its customers for rain barrels, compost bins, native plants, and approved tree species. This Green Spot Community Backyards Conservation Program is offered in partnership with Franklin Soil and Water Conservation District. Communities outside of Ohio that have residential stormwater fee credit programs include: Minneapolis, Minnesota; Oshkosh, Wisconsin; Harrisonburg, Virginia; Lynchburg, Virginia; and Portland, Oregon.

NEORS's individual residential property owners can receive a 25% credit for effectively implementing rain gardens, on-site-stormwater storage, impervious surface reduction, permeable pavement, or vegetated filter strips. In order to receive credit, rain gardens must treat runoff from at least 25% of the house's roof or equivalent impervious area. 50% of the house's roof must be directed to rain barrels, cisterns, or rain bladders that provide at least 40 gallons of storage per downspout and storage containers must be drained in no less than 24 hours and no more than 4 days after a rain event. Replacing 500 or more feet of impervious area with vegetated pervious area earns the impervious surface reduction credit. Residents can earn the permeable pavement credit by installing at least 1,000 square feet of permeable pavement that has a stone reservoir depth of at least 10 inches and meets municipal standards for driveway installations. If 50% of a property's roof area travels through a fully vegetated area at least 50 feet long with a minimal slope, a vegetated filter strip credit is granted. Documentation of maintenance of these SCMs is required to continue to receive credit (recertification occurs every 3 years). Residential property owners can also receive credit for stormwater storage provided by stormwater control measures that detain water from their subdivisions with appropriate documentation of their function.

In order to assist residents with participating in the credit program, NEORS has a separate credit manual for residential properties. Education of rate payers is one of NEORS's primary goals of this program. NEORS residential stormwater fee credit manual includes lots of graphics that explain activities that generate credit, clear guidance for what activities are eligible for credit, and examples of credit applications and application checklists that remind residents of program requirements and application components. The residential credit manual includes a broad overview of NEORS's stormwater program and how granting residential credits helps NEORS meet program goals. Customers can receive assistance with credit applications from NEORS's Watershed Team Leaders and/or their watershed organizations. NEORS provides financial support to local watershed organizations with annual service agreements that allow watershed organizations to assist residents with implementing stormwater control measures and applying for credits along with other services provided by watershed organizations.

The City of Minneapolis, Minnesota offers residential property owners the opportunity for credit reductions. Residents can receive water quality credits if they install and maintain rain gardens, permeable pavers, wet ponds, dry wells, sand filters, filter strips, infiltration trenches, or

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green roofs. Credit discounts are based on the percent of impervious area treated by SCMs. Residential property owners can also receive credit for stormwater storage provided by SCMs that detain water from the 10 or 100-year storm.

Oshkosh, Wisconsin offers residential customers stormwater fee credit for installing rain gardens or rain barrels or equivalent stormwater control measure with documentation of function. Rain gardens receive up to a 75% stormwater fee credit and rain barrels receive up to a 25% fee credit. Oshkosh also offers credits to residents that drain directly into a water body without using City storm sewers. Oshkosh residents must pay a \$10 application fee to apply for stormwater fee reduction.

The City of Harrisonburg, Virginia offers credits for downspout disconnection, rain gardens, vegetated filter strips, rain barrels/cisterns, tree planting, conservation landscaping, homeowner nutrient management and lawn care agreement, impervious cover reduction. If 50% of the roof is disconnected from the storm sewer network by traveling through a lawn or to an SCM, the property owner receives a 10% credit. If 100% of the roof is disconnected, the property owner receives a 20% credit. Rain gardens that treat runoff from 25% of the impervious surface on a parcel receive a 25% credit and rain gardens that treat runoff from 50% of the impervious surface on a parcel receive a 50% credit. Residents can receive a 10% credit vegetated filter strip if downspouts are directed into fully vegetated areas with minimal slope that are at least 25 feet long and not treated with fertilizers and pesticides. The City waives its Tall Grass and Weeds Ordinances within dedicated vegetated filter strips that meet these criteria. Harrisonburg offers 20% credit to homeowners that use rain barrels or cisterns. Tree planting credit of 10% is given to homeowners that have canopy coverage on at least 20% of their parcel. Planting mulch beds with perennials, shrubs and/or small trees earns a credit of 10%. Native plants and organic mulch are recommended for this conservation landscaping credit. Homeowners that commit to adhering to measures to reduce fertilizer and pesticide use receive a 10% credit. Impervious cover reduction results in fee savings because Harrisonburg's fees are based on each 500 feet of impervious surface. Homeowners must grant the City the right to inspect the SCMs and must provide evidence of maintenance at least every 5 years to continue receiving the credit. Homeowners whose stormwater is treated by a regional SCM that they contribute to the maintenance of are eligible for 15-50% credit depending on whether the SCMs were built to comply with the Virginia Stormwater Management Program and the City's Stormwater Management Ordinance.

Lynchburg, Virginia allows its residential customers to earn up to 50% reduction of their stormwater fees by implementing stormwater control measures. Treating 50% of a property's impervious area with a rain garden receives 20% credit. If 50% of a property's roof area drains to vegetated filter strips that have a minimum flow length of 50 feet with a slope of 5% or less and a splash block is used, residents receive 20% credit. Residents can direct 50% or more of their roof area to self-emptying rain barrels that drain 24-48 hours after a rainfall for a 20% credit. At least one gallon of storage must be provided for every 3 square feet of roof area with the goal of storing the 0.5 inch rain event. If at least 1,000 square feet of permeable pavement is installed with at least 10 inches of reservoir storage, the property owner receives a 20% credit. The City requires photos of installed stormwater control measures with credit applications. A construction photo illustrating the depth of stone underlying permeable pavement is required for permeable pavement credit.

Portland, Oregon allows residents to receive discounts of up to 35% of their stormwater fee by managing their roof runoff using downspout disconnection, rain gardens, dry wells,

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infiltration trenches, or green roofs. Residents can also receive discounts for having less than 1,000 square feet of impervious surface on their properties and/or more than 4 trees taller than 15 feet. To receive the discount, residents fill out a simple one page form indicating what stormwater control measures they are using and whether they treat all or a portion of their roof runoff. The City conducts random site visits to residential property owners to verify stormwater control measure existence and functionality. The City offers materials on its website to assist residents with implementing stormwater control measures including: how to guides for stormwater control measure installation and maintenance, lists of design and construction contractors who attended City-offered stormwater retrofit training, and a brochure explaining what City permits are or may be required for stormwater retrofits. The City also offers site-specific recommendations for stormwater management to its residents.

Running a residential credit program requires substantial utility resources. Personal communication with Northeast Ohio Regional Sewer District (NEORS) staff (2016) indicates that their residential credit program requires substantial staff time to implement. One of three Watershed Team Leaders initially reviews each application, coordinates with applicants if additional information is needed, and confirms that the application is acceptable to the municipality where the resident lives. NEORS's billing, customer service, and GIS departments are also involved in administering this program. Processing each application takes a minimum of 2 hours of NEORS staff time, and some applications take substantially more if the application results in an appeals hearing.

The stormwater utilities that offer residential credit programs described above charge more than LCSMD. NEORS has 3 tiers of residential fees: customers with less than 2,000 square feet of impervious surface pay \$3.09 per month, customers with 2,000 -3,900 square feet pay \$5.15 per month, customers with 4,000 or more square feet pay \$9.27 per month. There is also a homestead rate of \$2.07 per month. Harrison, Virginia charges \$6 per 500 square feet of impervious surface per year. Prior to 2016, Harrison, Virginia charged \$10.50 per 500 square feet of impervious surface per year. Lynchburg, Virginia charges property owners with less than 1,300 square feet of impervious surface \$2 per month, property owners with 1,301 – 4,300 square feet of impervious surface \$4 per month, and property owners with 4,301 square feet of impervious surface \$6.40 per month. Oshkosh, Wisconsin charges middle-tier single-family residential customers \$11.38 per month. Portland, Oregon is charging residential users \$27.44 each month for stormwater management for the 2016-2017 fiscal year. In contrast, all LCSMD residential users pay \$3.50 per month.

RECOMMENDATIONS

Chagrin River Watershed Partners, Inc. (CRWP) recommends that if LCSMD adds a residential stormwater fee credit program, it also increases its fees. This would support an increased staff size to implement the program. Staff resources would be needed to develop the residential fee credit manual, process credit applications, and confirm implementation of residential stormwater control measures. LCSMD could also choose to contract with its partner organizations (Chagrin River Watershed Partners, Inc., Lake County Soil and Water Conservation District, and Lake County General Health District) to provide assistance to customers with implementing stormwater control measures and applying for credits.

NEORS and Harrisonburg, Virginia provide good examples of the types of stormwater control measures that could be credited by LCSMD and how to layout residential stormwater

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manuals. Before undertaking a residential stormwater fee credit program, LCSMD staff may also find it helpful to review guidance documents on how to run effective residential stormwater control measure programs, such as [Chesapeake RiverWise Communities](#). LCSMD staff may also find it useful to review the [nutrient load reduction estimates](#) for residential stormwater control measures put forth by the Urban Stormwater Work Group in the Chesapeake Bay basin.



Stormwater Fee Credits for Non-Residential Properties

Property owners in communities that participate in Lake County Stormwater Management Department pay stormwater fees to finance improvements that address flooding, erosion, and water quality problems and to allow the County and their communities to comply with state stormwater requirements. Non-residential property owners pay stormwater fees of \$3.50 per month for each 3,050 square feet of impervious surface on their properties. Non-residential property owners can apply to reduce their stormwater fees for taking actions that assist Lake County Stormwater Management Department (LCSMD) with managing stormwater and/or meeting its Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) stormwater permit requirements. Activities eligible for fee credit reduction are listed below. Credits are additive, but the total credit amount may not exceed 50% of the stormwater fee or reduce the fee to less than \$3.50 per month. Additionally, since stormwater fees are based on the amount of impervious surface on a parcel, property owners can also reduce their fees by reducing impervious surfaces such as parking lots, driveways, and roofs on their properties. Permeable pavement and green roofs do not count as impervious surfaces in stormwater credit calculations.

Types of Credits

- Education Credit (Schools Only)
- NPDES Industrial Stormwater Permit Credit
- Water Quality Credit
- Stormwater Quantity Credit



Lake stormwater educators can provide field or classroom education that will earn credits.

Credits for Schools

K-12 schools can receive fee credit reduction of 15% just by inviting Lake County stormwater educators to teach 20% of their students about water quality each year and documenting this education. Contact Susan Haboustak Newcomer at 440-350-5900 or susan.haboustak@lakecountyohio.gov to schedule lessons for your students. Schools are also eligible for water quantity and water quality credits.

NPDES Industrial Stormwater Permit Credit

Property owners covered by and in compliance with an Ohio Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Industrial Stormwater General Permit or an Individual Industrial NPDES Permit with stormwater provisions are eligible for a 15% credit. These entities must submit copies of the facility's NPDES permit, Stormwater Pollution Prevention Plan, and annual reports to Ohio EPA to LCSMD to receive credit.



Stormwater Fee Credits for Non-Residential Properties

Water Quality & Quantity Credits

Property owners can apply for credit for exceeding minimum stormwater management requirements. Properties developed before 2003 can receive credit for retrofitting flood control basins to improve water quality or adding stormwater control measures that improve water quality such as rain gardens, stormwater wetlands, or infiltration basins. Property owners can receive quantity credit for substantially reducing stormwater volumes through infiltration or rainwater harvesting or for managing stormwater from drainage areas larger than their property. Properties can receive credit reductions of up to 20% for water quality treatment and up to 20% for stormwater quantity management. Property owners interested in pursuing these credits are encouraged to contact LCSMD at 440-350-5900 to discuss potential crediting of stormwater control measures prior to making improvements to their property.



Bioretention (left), permeable pavement (middle), and rainwater harvesting (right) can potentially receive quantity credit for runoff reduction. Bioretention and permeable pavement could potentially also be credited for water quality if installed on properties developed before 2003 (when state stormwater regulations first required water quality treatment) or properties where less than 1 acre was disturbed during development and stormwater control measures were not required.

Credit Manual & Forms

The *Lake County Stormwater Utility Fee Credit Manual for Non-residential Users* is available at: <http://www.lakecountyohio.gov/smd>. Credit application forms are appendices in this document.

Chagrin River Watershed Partners, Inc. received funding from the Lake Erie Protection Fund (www.lakeerie.ohio.gov) to help LCSMD update the credit manual and produce this publication. The LEPF is supported by tax-deductible donation and voluntary contributions of Ohioans who purchase a Lake Erie license plate featuring the Marblehead lighthouse, Toledo Harbor lighthouse, or Lake Erie life preserver.